

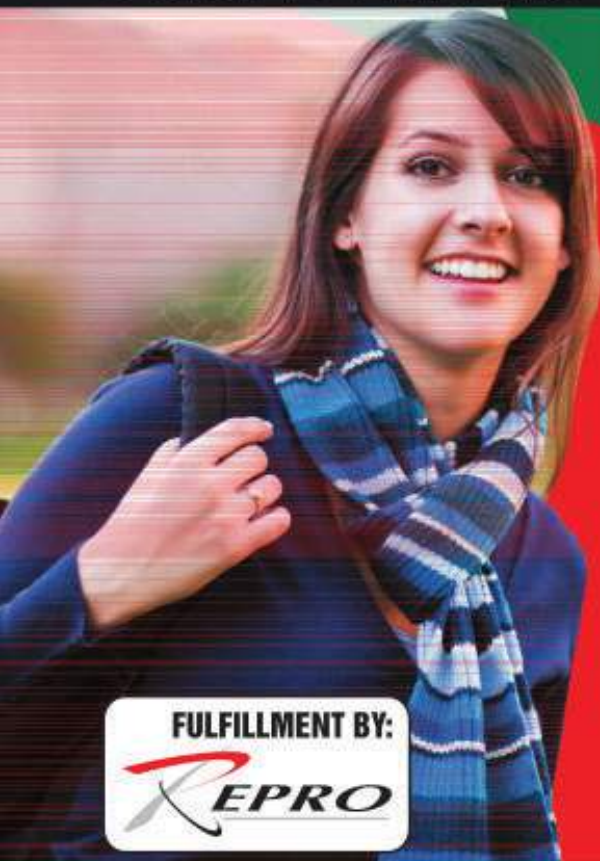
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## COMBINED GRADUATE LEVEL EXAMS

# QUESTION BANK

SOLVED PAPERS OF PREVIOUS YEARS' EXAMS

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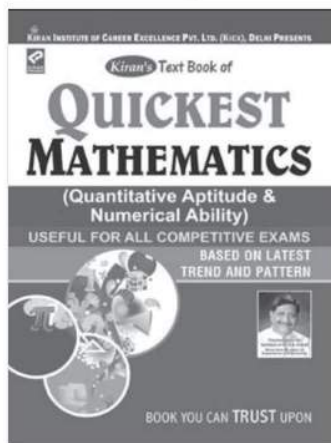
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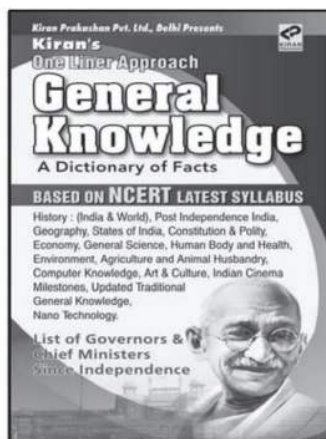
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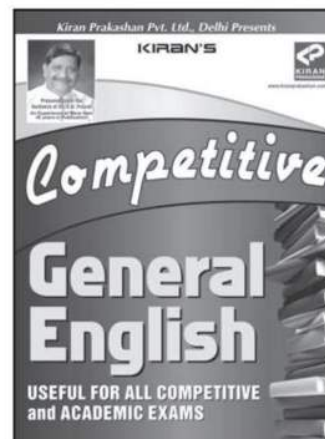
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# CURRENT AFFAIRS

## NOBEL PRIZE 2021

### PEACE

Two journalists – Maria Ressa of the Philippines and Dmitry Muratov of Russia – whose work has angered the rulers of their countries, won the 2021 Nobel Peace Prize on October 8, 2021 for their relentless fight for freedom of expression in countries where media outlets have faced persistent attacks.

In 2012, Maria Ressa co-founded “Rappler”, a digital media company for investigative journalism.

Dmitry Andreyevich Muratov was one of the founders of the independent Russian newspaper “Novaya Gazeta” in 1993.

### LITERATURE

United Kingdom-based Tanzanian writer Abdulrazak Gurnah won the Nobel Prize for Literature on October 7, 2021. He is only the sixth Africa-born writer to be awarded the Nobel Prize for Literature. He has published 10 novels and a number of short stories.

He released his debut novel “Memory of Departure” in 1987. Other novels : Pilgrims Way (1988); Dottie (1990); Paradise (1994); Desertion (2005); The Last Gift (2011) and Afterlives (2020).

### PHYSICS

Three scientists – Giorgio Parisi of Italy (Sapienza University of Rome : one-half of the prize); Klaus Hasselmann of Germany (Max Planck Institute for Meteorology, Hamburg : one-fourth of prize) and Syukuro Manabe, Japanese – born American (Princeton University : one-fourth of prize) – won the Nobel Prize for Physics on October 5, 2021 for work that found order in disorder, helping to explain and predict complex forces of nature, including our understanding of the global climate crisis.

### CHEMISTRY

Benjamin List of the Max Planck Institute and David MacMillan of Princeton University won the Nobel Prize in Chemistry on October 6, 2021 for pioneering a unique way to build molecules. The new method is known as asymmetric organocatalysis.

### MEDICINE OR PHYSIOLOGY

David Julius from the University of California, San Francisco and Ardem Patapoutian from Scripps Research in La Jolla, California won the Nobel Prize in Medicine on October 4, 2021 for their seminal work in identifying the gene and understanding the mechanism through which our body perceives temperature and pressure.

### ECONOMIC SCIENCES

The Royal Swedish Academy of Sciences, on 11 October 2021, awarded the Nobel Prize in Economic Science to:

David Card for his empirical contributions to labour economics and

Joshua D. Angrist and Guido W. Imbens for their methodological contributions to the analysis of causal relationships.

The Nobel Prize in Economic Sciences is formally known as the ‘Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel 2021’.

## RAJINIKANTH HONOURED WITH DADASAHEB PHALKE AWARD

Actor Rajinikanth was honoured with the prestigious 51st Dadasaheb Phalke Award at the 67th National Film Awards ceremony in October 2021.

Reason: for his contribution as an actor, producer and screenwriter.

He received the prestigious award from Vice President M Venkaiah Naidu.

## 73RD EMMY AWARD 2021

The 73rd Primetime Emmy Awards ceremony was held on September 19, 2021, in Los Angeles, California.

The award honoured the best in U.S. prime time television programming from June 1, 2020, until May 31, 2021.

### 2021 Emmy Awards:

- Outstanding Drama Series: The Crown
- Outstanding Comedy Series: Ted Lasso
- Outstanding Variety Talk Show: Last Week Tonight with John Oliver
- Outstanding Limited Series: The Queen’s Gambit
- Outstanding Actor-Comedy: Jason Sudeikis (Ted Lasso)
- Outstanding Actor-Drama: Josh O’Connor



## 2020 OLYMPICS GAMES

- The 2020 Summer Olympics was held from 23 July to 8 August 2021 in Tokyo, Japan, with some preliminary events that began on 21 July 2021.
- It was the 32nd Edition of Olympic Games.
- Tokyo was selected as the host city during the 125th International Olympic Committee Session in Buenos Aires, Argentina, on 7 September 2013.
- The 2020 Olympics was scheduled to take place from 24 July to 9 August 2020.
- The event was postponed to 2021 in March 2020 as a result of the COVID-19 pandemic: first such instance in the history of the Olympic Games.
- The 2020 Games are the Fourth Olympic Games to be held in Japan, following the Tokyo 1964 (Summer), Sapporo 1972 (Winter), and Nagano 1998 (Winter) games.
- Tokyo became the first city in Asia to hold the Summer Games twice.
- New Games added to the Olympic programme: Surfing, sport climbing, skateboarding and karate
- Baseball and Softball returned to Olympics after their absence since the 2008 Beijing Olympic Games.
- Summer Olympic Mascot – 'MIRAITOWA'
- 339 Medal Events in the Tokyo 2020 Olympic Games

### INDIA'S PERFORMANCE

- India sent 228-member contingent to the Tokyo Olympics including 119 athletes (67 male & 52 female).
- It competed in 85 medal events.
- India's official cheer song: Cheer4India: Hindustani Way
- It is performed by singer Ananya Birla and composed by AR Rahman.
- India's flag bearers in the Opening Ceremony: Mary Kom (Boxing) & Manpreet Singh (Hockey)
- India's flag bearer for the closing ceremony: Bajrang Punia (Wrestling)
- Deepak Kabra: 1st Indian to be selected for judging the Gymnastics competition of the Olympic Games.

- India recorded its best-ever medal tally (7) at Tokyo Olympics; winning 1 Gold, 2 Silver and 4 Bronze medals.

#### MEDAL WINNERS

##### Neeraj Chopra

- Neeraj Chopra, on 7 August 2021, won gold in the men's javelin throw final with a best attempt of 87.58m.
- He became the first Indian to win a gold medal in athletics at the Olympic Games
- It was India's first gold at Tokyo Olympics 2020.
- He became the second Indian to win an individual gold medal in Olympics after Abhinav Bindra.
- With Neeraj's gold on the penultimate day, India ended its campaign at the XXXII Olympiad with seven medals – the country's best performance at the Olympics.

##### Mirabai Chanu

- Chanu he bagged the silver medal after she lifted 202kg (87kg+115kg) in the 49kg category to better Karnam Malleswari's bronze in the 2000 Sydney Olympics.

##### PV Sindhu

- Sindhu bagged the bronze medal in Tokyo and created history by becoming the first Indian woman to win two Olympic medals.
- She beat China's He Bing Jiao 21-13, 21-15 in the bronze medal match of the women's badminton singles event.

##### Lovlina Borgohain

- Indian boxer Lovlina Borgohain took the bronze medal in the in women's welterweight (64-69kg) category on 4 August 2021.
- She was defeated by Turkey's Busenaz Surmeneli.
- She has become only the third Indian boxer to win a medal at the Olympics.
- Mary Kom, Vijender Singh clinched bronze at 2008 Beijing & Olympics 2012 London Olympics.

##### Ravi Dahiya

- Indian wrestler Ravi Kumar Dahiya on 5 August 2021 clinched an Olympic silver medal after losing his 57 kg final to Russian two-time defending world champion Zavur Uguev.
- This was India's second silver medal and fifth medal overall at the Tokyo Olympics.

**Indian Men's Hockey Team**

- India men's hockey team won the bronze medal in Tokyo after defeating Germany 5-4.
- It was India's first Olympic medal in hockey since they won the gold medal in the 1980 Olympics in Moscow.
- Barring the 7-1 defeat against Australia, and the 5-2 loss in the semifinal to the World Champions Belgium, India won all their games in Tokyo.

**Bajrang Punia**

- Indian Wrestler Bajrang Punia on 7 August 2021 won a Bronze Medal for India after defeating Daulet Niyazbekov of Kazakhstan by 8-0 in men's freestyle 65 kg Bronze Medal match.

Medal Winners for India at the 2020 Olympics				
Medal	Name	Sport	Event	Date
Gold	Neeraj Chopra	Javelin Throw	Final	7 August 2021
Silver	Saikhom Mirabai Chanu	Weightlifting	Women's 49 kg	24 July 2021
Silver	Ravi Dahiya	Wrestling	Men's 57 kg	5 August 2021
Bronze	P. V. Sindhu	Badminton	Women's singles	1 August 2021
Bronze	Lovlina Borgohain	Boxing	Women's welterweight (64-69kg)	4 August 2021
Bronze	Men's Team	Hockey	Bronze Medal decider	5 August 2021
Bronze	Bajrang Punia	Wrestling	Men's Freestyle 65 kg	7 August 2021

**OTHER ACHIEVERS:**

- Indian women's hockey team made history on 2 August as they defeated Australia 1-0 to book their place in the semi-final for the first time in the Olympics. Goal scorer for India: Gurjit Kaur.
- The Indian women's hockey team lost to Argentina 1-2 in the semi-finals on 4 August 2021.
- The spirited team later went down 3-4 in a heroic match against Great Britain in the Bronze medal decider on 6 August 2021.
- Kamalpreet Kaur: Kamalpreet Kaur finished sixth in the final of the women's discus throw event. She managed a best throw of 63.70m with USA's Valarie Allman taking gold with a throw of 68.98m.
- Neeraj Chopra qualifies for javelin throw final: Star Javelin thrower Neeraj Chopra earned a direct qualification into the finals with a stunning throw of 86.65m on 4 August 2021. He became the first Indian javelin thrower to enter the finals of the Games.
- Golfer Aditi Ashok finishes fourth: Indian Golfer Aditi Ashok, on 7 August 2021, narrowly missed the Olympic medal as she finished fourth in the Women's Individual Golf tournament. She finished just two shots behind gold medal winner Nelly Korda of USA and just a shot behind Mone Inami of Japan and New Zealand's Lydia Ko, who win silver and bronze, respectively.

**MEDAL TALLY : TOP TEN COUNTRY**

	Gold	Silver	Bronze	Total
1. United States	39	41	33	113
2. China	38	32	18	88
3. Japan	27	14	17	58
4. Great Britain	22	21	22	65
5. R.O.C.	20	28	23	71
6. Australia	17	7	22	46
7. Netherlands	10	12	14	36
8. France	10	12	11	33
9. Germany	10	11	16	37
10. Italy	10	10	20	40
<b>48. India</b>	<b>1</b>	<b>2</b>	<b>4</b>	<b>7</b>

**UEFA EURO : 2020**

Italy won the European Championship for the first time since 1968 as Gianluigi Donnarumma saved two England penalties en route to a 3-2 shootout win after the teams had fought out a 1-1 extra-time draw at a raucous Wembley on July 12, 2021.

The giant keeper saved from Jadon Sancho and Bukayo Saka after Marcus Rashford hit a post, as Federico Bernardeschi, Leonardo Bonucci and Domenico Berardi all scored for the Italians.

Luke Shaw had given England a dream start with a superb goal after two minutes but Italy, who offered almost nothing in response in the first half, gradually took command as the hosts sat back and levelled through Bonucci after 67 minutes.

### 67TH NATIONAL FILM AWARDS

The 67th National Film Awards are announced in New Delhi. The awards are for films from the year 2019. The event is organised by the Directorate of Film Festivals, which comes under the Ministry of Information and Broadcasting.

CATEGORY	WINNER		
<b>SCREENPLAY</b>		Best Marathi Film	Bardo
Original Screenplay	Jyeshthoputri	Best Konkani Film	Kaajro
Adapted Screenplay	Gumnaami	Best Kannada Film	Akshi
Dialogue Writer	The Tashkent Files (Hindi)	Best Hindi Film	Chhichhore
Best Cinematography	Jallikkettu (Malayalam)	Best Bengali Film	Gumnaami
Best Female Playback Singer	Bardo (Marathi)	Best Assamese Film	Ronuwa-Who Never Surrender
Best Male Playback Singer	Kesri, Teri Mitti (Hindi)	<b>NON FEATURE FILM</b>	
Best Supporting Actress	The Tashkent Files, Pallavi Joshi	Best Narration	Wild Karnataka, Sir David Attenborough
Best Supporting Actor	Super Deluxe, Vijaya Sethupathi	Best Editing	Shut Up Sona, Arjun Gourisaria
Best Actress	Kangana Ranaut (Manikarnika, Panga)	Best Audiography	Radha (Musical), Allwin Rego and Sanjay Maurya
Best Actor	Manoj Bajpayee for Bhonsle and Dhanush for Asuran	Best On-Location Sound Recordist	Rahas (Hindi), Saptarshi Sarkar
Best Direction	Bahattar Hoorain	Best Cinematography	Sonsi, Savita Singh
Best Children Film	Kastoori (Hindi)	Best Direction	Knock Knock Knock (English/Bengali), Sudhanshu Saria
Best Film on Environment Conservation	Water Burial	Best Film on Family Values	Oru Paathiraa Swapnam Pole (Malayalam)
Indira Gandhi Award for Best Debut Film of Director	Helen (Malayalam)	Best Short Fiction Film	Custody (Hindi/English)
Best Feature Film	Marakkar Arabikadalinte Simham (Malayalam)	Special Jury Award	Small Scale Societies (English)
<b>MUSIC DIRECTION</b>		Best Animation Film	Radha (Musical)
Song	Viswasam (Tamil)	Best Investigative Film	Jakkal
Music Direction	Jyeshthoputro	Best Exploration Film	Wild Karnataka (English)
Make-Up Artist	Helen	Best Education Film :	Apples and Oranges (English)
Best Production Design	Anandi Gopal	Best Film on Social Issues	Holy Rights (Hindi) and Ladli (Hindi)
Best Editing	Jersey (Telugu)	Best Environment Film	The Stork Saviours (Hindi)
Best Audiography	lewduh (Khasi)	Best Promotional Film	The Shower (Hindi)
<b>FEATURE FILM</b>		Best Art and Culture Film	Shrikshetra-Ru Sahijata (Odia)
Best Tulu Film	Pingara	Best Biographical Film	Elephants Do Remember (English)
Best Paniya Film	Kenjira	Best Ethnographic Film	Charan-Atva The Essence of Being a Nomad (Gujarati)
Best Mishing Film	Anu Ruwad	Best Debut Non-Feature Film of a Director	Khisa (Marathi)
Best Khasi Film	Lewduh	Best Non-Feature Film	An Engineered Dream (Hindi)
Best Haryanvi Film	Chhoriyan Chhoron		
Best Chattisgarhi Film	Se Kam Nahi Hoti		
Best Telugu Film	Bhulan The Maze		
Best Tamil Film	Jersey		
Best Punjabi Film	Asuran		
Best Odiya Film	Rab Da Radio 2		
	Sala Budhar Badla and Kalira Atita		
Best Manipuri Film	Eigi Kona		
Best Malayalam Film	Kalla Nottam		

### PADMA AWARDS - 2021

Padma Awards - one of the highest civilian Awards of the country, are conferred in three categories, namely, Padma Vibhushan, Padma Bhushan and Padma Shri. The Awards are given in various disciplines/ fields of activities, viz. - art, social work, public affairs, science and engineering, trade and industry, medicine, literature and education, sports, civil service, etc. 'Padma Vibhushan' is awarded for exceptional and distinguished service; 'Padma Bhushan' for distinguished service of high order and 'Padma Shri' for distinguished service in any field. The awards are announced on the occasion of Republic Day every year.

This year the President has approved conferment of 119 Padma Awards including 1 duo case (in a duo case, the Award is counted as one) as per list below. The list comprises 7 Padma Vibhushan, 10 Padma Bhushan and 102 Padma Shri Awards. 29 of the awardees are women and the list also includes 10 persons from the category of Foreigners/NRI/PIO/OCI, 16 Posthumous awardees and 1 transgender awardee.

#### Padma Vibhushan (7)

Name	Field	State/Country
Shri Shinzo Abe	Public Affairs	Japan
Shri S P Balasubramaniam (Posthumous)	Art	Tamil Nadu
Dr. Belle Monappa Hegde	Medicine	Karnataka
Shri Narinder Singh Kapany (Posthumous)	Science and Engineering	United States of America
Maulana Wahiduddin Khan	Others-Spiritualism	Delhi
Shri B. B. Lal	Others-Archaeology	Delhi
Shri Sudarshan Sahoo	Art	Odisha

#### Padma Vibhushan (10)

Name	Field	State/Country
Ms. Krishnan Nair Shantakumari Chithra	Art	Kerala
Shri Tarun Gogoi (Posthumous)	Public Affairs	Assam
Shri Chandrashekhar Kambara	Literature and Education	Karnataka
Ms. Sumitra Mahajan	Public Affairs	Madhya Pradesh
Shri Nripendra Misra	Civil Service	Uttar Pradesh
Shri Ram Vilas Paswan (Posthumous)	Public Affairs	Bihar
Shri Keshubhai Patel (Posthumous)	Public Affairs	Gujarat
Shri Kalbe Sadiq (Posthumous)	Others-Spiritualism	Uttar Pradesh
Shri Rajnikant Devidas Shroff	Trade and Industry	Maharashtra
Shri Tarlochan Singh	Public Affairs	Haryana

#### Padma Shri (102)

Name	Field	State/Country
Shri Gulfam Ahmed	Art	Uttar Pradesh
Ms. P. Anitha	Sports	Tamil Nadu
Shri Rama Swamy Annavarapu	Art	Andhra Pradesh
Shri Subbu Arumugam	Art	Tamil Nadu
Shri Prakasarao Asavadi	Literature and Education	Andhra Pradesh
Ms. Bhuri Bai	Art	Madhya Pradesh
Shri Radhe Shyam Barle	Art	Chhattisgarh
Shri Dharma Narayan Barma	Literature and Education	West Bengal
Ms. Lakhimi Baruah	Social Work	Assam
Shri Biren Kumar Basak	Art	West Bengal
Ms. Rajni Bector	Trade and Industry	Punjab
Shri Peter Brook	Art	United Kingdom
Ms. Sangkhumi Bualchhuak	Social Work	Mizoram
Shri Gopiram Bargayn Burabhakat	Art	Assam
Bijoya Chakravarty	Public Affairs	Assam
Shri Sujit Chattopadhyay	Literature and Education	West Bengal
Shri Jagdish Chaudhary (Posthumous)	Social Work	Uttar Pradesh
Shri Tsultrim Chonjor	Social Work	Ladakh
Ms. Mouma Das	Sports	West Bengal
Shri Srikant Datar	Literature and Education	United States of America
Shri Narayan Debnath	Art	West Bengal
Chutni Devi	Social Work	Jharkhand
Ms. Dulari Devi	Art	Bihar
Ms. Radhe Devi	Art	Manipur
Ms. Shanti Devi	Social Work	Odisha
Shri Wayan Dibia	Art	Indonesia
Shri Dadudan Gadhavi	Literature & Education	Gujarat
Shri Parshuram Atmaram Gangavane	Art	Maharashtra
Shri Jai Bhagwan Goyal	Literature and Education	Haryana
Shri Jagadish Chandra Halder	Literature and Education	West Bengal
Shri Mangal Singh Hazowary	Literature and Education	Assam
Ms. Anshu Jamsenpa	Sports	Arunachal Pradesh
Ms. Purnamasi Jani	Art	Odisha
Matha B. Manjamma Jogati	Art	Karnataka



Shri Damodaran Kaithapram	Art	Kerala
Shri Namdeo C Kamble	Literature and Education	Maharashtra
Shri Maheshbhai & Shri Nareshbhai Kanodia (Duo)*(Posthumous)	Art	Gujarat
Shri Rajat Kumar Kar	Literature and Education	Odisha
Shri Rangasami Lakshminarayana Kashyap	Literature and Education	Karnataka
Ms. Prakash Kaur	Social Work	Punjab
Shri Nicholas Kazanas	Literature and Education	Greece
Shri K Kesavasamy	Art	Puducherry
Shri Ghulam Rasool Khan	Art	J & K
Shri Lakha Khan	Art	Rajasthan
Ms. Sanjida Khatun	Art	Bangladesh
Shri Vinayak Vishnu Khedekar	Art	Goa
Ms. Niru Kumar	Social Work	Delhi
Ms. Lajwanti	Art	Punjab
Shri Rattan Lal	Science and Engineering	United States of America
Shri Ali Manikfan	Others-Grassroots Innovation	Lakshadweep
Shri Ramachandra Manjhi	Art	Bihar
Shri Dulal Manki	Art	Assam
Shri Nanadro B Marak	Others-Agriculture	Meghalaya
Shri Rewben Mashangva	Art	Manipur
Shri Chandrakant Mehta	Literature and Education	Gujarat
Dr. Rattan Lal Mittal	Medicine	Punjab
Shri Madhavan Nambiar	Sports	Kerala
Shri Shyam Sundar Paliwal	Social Work	Rajasthan
Dr. Chandrakant Sambhaji Pandav	Medicine	Delhi
Dr. J N Pande (Posthumous)	Medicine	Delhi
Shri Solomon Pappaiah	Literature and Education-Journalism	Tamil Nadu
Ms. Pappammal	Others- Agriculture	Tamil Nadu
Dr. Krishna Mohan Pathi	Medicine	Odisha
Ms. Jaswantiben Jamnadas Popat	Trade and Industry	Maharashtra
Shri Girish Prabhune	Social Work	Maharashtra
Shri Nanda Prusty	Literature and Education	Odisha
Shri K K Ramachandra Pulavar	Art	Kerala
Shri Balan Putheri	Literature and Education	Kerala

Ms. Birubala Rabha	Social Work	Assam
Shri Kanaka Raju	Art	Telangana
Ms. Bombay Jayashri Ramnath	Art	Tamil Nadu
Shri Satyaram Reang	Art	Tripura
Dr. Dhananjay Diwakar Sagdeo	Medicine	Kerala
Shri Ashok Kumar Sahu	Medicine	Uttar Pradesh
Dr. Bhupendra Kumar Singh Sanjay	Medicine	Uttarakhand
Ms. Sindhutai Sapkal	Social Work	Maharashtra
Shri Chaman Lal Sapru (Posthumous)	Literature and Education	Jammu and Kashmir
Shri Roman Sarmah	Literature and Education-Journalism	Assam
Shri Imran Shah	Literature and Education	Assam
Shri Prem Chand Sharma	Others- Agriculture	Uttarakhand
Shri Arjun Singh Shekhawat	Literature and Education	Rajasthan
Shri Ram Yatna Shukla	Literature and Education	Uttar Pradesh
Shri Jitender Singh Shunty	Social Work	Delhi
Shri Kartar Paras Ram Singh	Art	Himachal Pradesh
Shri Kartar Singh	Art	Punjab
Dr. Dilip Kumar Singh	Medicine	Bihar
Shri Chandra Shekhar Singh	Others-Agriculture	Uttar Pradesh
Ms. Sudha Hari Narayan Singh	Sports	Uttar Pradesh
Shri Virender Singh	Sports	Haryana
Ms. Mridula Sinha (Posthumous)	Literature and Education	Bihar
Shri K C Sivasankar (Posthumous)	Art	Tamil Nadu
Guru Maa Kamali Soren	Social Work	West Bengal
Shri Marachi Subburaman	Social Work	Tamil Nadu
Shri P Subramanian (Posthumous)	Trade and Industry	Tamil Nadu
Ms. Nidumolu Sumathi	Art	Andhra Pradesh
Shri Kapil Tiwari	Literature and Education	Madhya Pradesh
Father Vallés (Posthumous)	Literature and Education	Spain
Dr. Thiruvengadam Veeraraghavan (Posthumous)	Medicine	Tamil Nadu
Shri Sridhar Vembu	Trade and Industry	Tamil Nadu
Shri K Y Venkatesh	Sports	Karnataka
Ms. Usha Yadav	Literature and Education	Uttar Pradesh
Col Quazi Sajjad Ali Zahir	Public Affairs	Bangladesh

### THE 65TH FILMFARE AWARD

65th Filmfare awards ceremony, presented by The Times Group, honoured the best Indian Hindi-language films of 2019. The ceremony was held on February 15, 2020 in Guwahati. This is the first time in six decades that a Filmfare Award ceremony was held outside Mumbai. Karan Johar and Vicky Kaushal were hosts of the award ceremony.

Alia Bhatt and Ranveer Singh-starrer Gully Boy won big at the awards. While Ranveer took home the Best Actor's trophy for his performance in the film, Alia won the Best Actor in a Leading Role (Female) for the same film.

The films nominated for the Best Film award this year were, Chhichhore, Gully Boy, Mission Mangal, Uri: The Surgical Strike and War. Gully Boy emerged as the winner.

#### Awards at a Glance

- **Best Film :** Gully Boy
- **Best Director :** Zoya Akhtar for Gully Boy
- **Best Film (Critics) :** Article 15 (Anubhav Sinha) and Sonchiriya (Abhishek Chaubey)
- **Best Actor In A Leading Role (Male) :** Ranveer Singh for Gully Boy
- **Best Actor (Critics) :** Ayushmann Khurrana for Article 15
- **Best Actor in a Leading Role (Female) :** Alia Bhatt for Gully Boy
- **Best Actress (Critics) :** Bhumi Pednekar and Taapsee Pannu for Saand Ki Aankh
- **Best Actor in a Supporting Role (Female) :** Amruta Subhash for Gully Boy
- **Best Actor in a Supporting Role (Male) :** Siddhant Chaturvedi for Gully Boy
- **Best Music Album :** Zoya Akhtar-Ankur Tewari for Gully Boy, Mithoon, Amaal Mallik, Vishal Mishra, SachetParampara and Akhil Sachdeva for Kabir Singh
- **Best Lyrics :** Divine and Ankur Tewari for Apna Time Aayega (Gully Boy)
- **Best Playback Singer (Male) :** Arijit Singh for Kalank Nahi (Kalank)
- **Best Playback Singer (Female) :** Shilpa Rao for Ghungroo (War)
- **Best Debut Director :** Aditya Dhar for Uri: The Surgical Strike
- **Best Debut Actor :** Abhimanyu Dassani for Mard Ko Dard Nahi Hota
- **Best Debut Actress :** Ananya Pandey for Student Of The Year 2, Pati Patni Aur Woh
- **Best Original Story :** Anubhav Sinha and Gaurav Solanki for Article 15
- **Best Screenplay :** Reema Kagti and Zoya Akhtar for Gully Boy
- **Best Dialogue :** Vijay Maurya for Gully Boy
- **Lifetime Achievement Award :** Ramesh Sippy
- **Excellence In Cinema :** Govinda
- **RD Burman Award For Upcoming Music Talent :** Sashwat Sachdev-UR

### ACADEMY AWARDS (OSCARs)-2021

Chloe Zhao won the Oscar for Best Director for the film Nomadland at the 93rd Annual Academy Awards on April 25, 2021. She became the first woman of color, first Chinese woman and second woman-ever to win the award.

Nomadland won the Oscar for 'Best Picture' at the 93rd Academy Awards. Frances McDormand bagged the Oscar for Best Actress for her performance in 'Nomadland', while Anthony Hopkins won the Best Actor honour for his performance in 'The Father'. Hopkins had previously won the Oscar award for his performance in 'The Silence of the Lambs'.

For McDormand, this is her third Best Actress Oscar, as she had previously won the award in 2018 for 'Three Billboards Outside Ebbing, Missouri' and for ' Fargo' in 1997.

#### List of Winners

- **Best Picture:** Nomadland
- **Best Actress in a Leading Role:** Frances McDormand, Nomadland
- **Best Actor in a Leading Role:** Anthony Hopkins, The Father
- **Actress in a Supporting Role:** Youn Yuh-jung, Minari
- **Actor in a Supporting Role:** Daniel Kaluuya, Judas and the Black Messiah
- **Best Costume Design:** Ma Rainey's Black Bottom
- **Best Music (Original Score):** Soul
- **Best Editing:** Sound of Metal
- **Best Sound:** Sound of Metal
- **Best Music (Original Song):** Fight for you, Judas and the Black Messiah
- **Best Writing (Adapted Screenplay):** The Father
- **Best Writing (Original Screenplay):** Promising Young Woman
- **Best Animated Short Film:** If Anything Happens I Love You
- **Best Live-Action Short Film:** Two Distant Strangers
- **Best Documentary Feature:** My Octopus Teacher
- **Best Documentary Short Subject:** Colette
- **Best Animated Feature Film:** Soul
- **Best International Feature Film:** Denmark, Another Round
- **Production Design:** Mank
- **Cinematography:** Mank
- **Visual Effects:** Tenet
- **Makeup and Hairstyling:** Ma Rainey's Black Bottom

### BAFTA AWARDS

The British Academy of Film and Television Arts or BAFTA Film Awards were presented on February 2, 2020 in London. Gut-wrenching World War I epic 1917 was the big winner, securing seven prizes including best picture and best director. Joaquin Phoenix was named best actor for superhero story Joker, which charts the origins of Batman's ginning nemesis. Renee Zellweger won the best actress prize for the Judy Garland biopic Judy.

1917 also won best British film and cinematography prizes—Roger Deakins' fifth win in that category. It also took trophies for production design, sound and visual effects.

**TENNIS GRAND SLAMS : 2021****AUSTRALIAN OPEN-2021**

- **Men's Singles** : Novak Djokovic (Serbia) beat Daniil Medvedev (Russia)
- **Women's Singles** : Naomi Osaka (Japan) beat Jennifer Brady (US)
- **Men's Doubles** : Filip Polasek (Slovakia) and Ivan Dodig (Croatia) beat Rajeev Ram (US) and Joe Salisbury (UK)
- **Women's Doubles** : Elise Mertens (Belgian) and Aryna Sabalenka (Belarus) beat Barbora Krejčíková (Czech) and Katerina Siniakova (Czech)
- **Mixed Doubles** : Barbora Krejčíková (Czech) and Rajeev Ram (US) beat Matthew Ebden (Australia) and Samantha Stosur (Australia)

**FRENCH OPEN-2021**

- **Men's Singles** : Novak Djokovic (Serbia) beat Stefanos Tsitsipas (Greece)
- **Women's Singles** : Barbora Krejčíková (Czech Republic) beat Anastasia Pavlyuchenkova (Russia)
- **Men's Doubles** : Pierre-Hugues Herbert and Nicolas Mahut (France) beat Andrey Golubev and Alexander Bublik (Kazakhstan)
- **Women's Doubles** : Barbora Krejčíková and Katerina Siniakova (Czech Republic) beat Iga Świątek (Poland) and Bethanie Mattek-Sands (US)
- **Mixed Doubles** : Desirae Krawczyk (US) and Joe Salisbury (UK) beat Elena Vesnina and Aslan Karatsev (Russia)

**WIMBLEDON : 2021**

- **Men's Singles** : Novak Djokovic (Serbia) beat Matteo Berrettini (Italy)
- **Women's Singles** : Ashleigh Barty (Australia) beat Karolina Pliskova (Czech Republic)
- **Men's Doubles** : Nikola Pietrangeli and Mate Pavić (Croatia) beat Marcel Granollers (Spain) and Horacio Zeballos (Argentina)
- **Women's Doubles** : Hsieh Su-wei (China) and Elise Mertens (Belgium) beat Veronika Kudermetova and Elena Vesnina (Russia)
- **Mixed Doubles** : Neal Skupski (U.K.) and Desirae Krawczyk (U.S.) beat Joe Salisbury and Harriet Dart (U.K.)

**US OPEN : 2021**

- **Men's Singles** : Daniil Medvedev (Russia) beat Novak Djokovic (Serbia)
- **Women's Singles** : Emma Raducanu (UK) beat Leylah Annie Fernandez (Canada)
- **Men's Doubles** : Rajeev Ram (USA) and Joe Salisbury (UK) beat Jamie Murray (UK) and Bruno Soares (Brazil)
- **Women's Doubles** : Samantha Stosur (Australia) and Zhang Shuai (China) beat Coco Gauff and McNally (USA)

# CENTRAL BUDGET : 2021-22

Finance Minister Nirmala Sitharaman presented the Union Budget 2021 on February 1, 2021. This was the first paperless budget. The Finance Minister read out the document from a Made-in-India tablet.

This was the third Budget presentation for FM Nirmala Sitharaman since she took over the mantle of Finance Ministry and the first one to be presented after the COVID-19 pandemic. The Union Budget 2020-21 was focused on the centre's Atmanirbhar Bharat vision. It did not propose any changes in personal income tax slabs.

**Sitharaman spelt out the six pillars on which she rested the Budget 2021-22 :**

1. Health and Well-Being
2. Physical and Financial capital and infrastructure
3. Inclusive Development for Aspirational India
4. Reinvigorating Human Capital
5. Innovation and R&D
6. Minimum government Maximum governance

**Nirmala Sitharaman identified eight areas of focus for the Union Budget 2021-22 as the "Sankalp of NATION FIRST".**

- Doubling farmers' income
- Strong Infrastructure
- Healthy India
- Good Governance
- Opportunities for Youth
- Education for All
- Women Empowerment, and
- Inclusive Development et. al.

## BUDGET 2021-22 HIGHLIGHTS

### Government's Earnings & Spendings

- Consequent to imposition of Agriculture Infrastructure and Development Cess (AIDC) on petrol and diesel, the Basic excise duty (BED) and Special Additional Excise Duty (SAED) rates have been reduced on them so that overall consumer does not bear any additional burden.
- Consequently, unbranded petrol and diesel will attract basic excise duty of Rs 1.4, and Rs 1.8 per litre respectively.
- The SAED on unbranded petrol and diesel shall be Rs 11 and Rs 8 per litre respectively.
- Similar changes have also been made for branded petrol and diesel.
- Fiscal deficit pegged at 9.5% of GDP during current fiscal ending March 31. It is pegged at 6.8% in the next financial year.

- The minister said that the government would need another Rs 80,000 crore for which we would be approaching the market in these two months.
- Finance Minister Nirmala Sitharaman said the government is rationalising custom duties on gold and silver.

Deficit	<ul style="list-style-type: none"> <li>❖ 2020-21 fiscal deficit seen at 9.5 per cent of GDP</li> <li>❖ 2021-22 fiscal deficit seen at 6.8 per cent of GDP</li> <li>❖ 2025-26 fiscal deficit target set at 4.5 per cent of GDP</li> </ul>
Expenditure	<ul style="list-style-type: none"> <li>❖ 2020-21 revised expenditure 4.39 trillion rupees (\$60.14 billion)</li> <li>❖ 2020-21 capital expenditure estimated at 5.54 trillion rupees (\$75.90 billion)</li> <li>❖ 2021-22 gross expenditure seen at 34.83 trillion rupees (\$477.16 billion) in 2021-22</li> <li>❖ To provide more than 2 trillion rupees (\$27.40 billion) for states and autonomous bodies</li> </ul>
Borrowing	<ul style="list-style-type: none"> <li>❖ India says will need 800 billion rupees (\$10.96 billion) in next two months from bond market</li> <li>❖ 2021-22 gross market borrowing seen at 12 trillion rupees (\$164.40 billion)</li> </ul>

### Tax:

- No IT filing for people above 75 years who get pension and earn interest from deposits
- Reopening window for IT assessment cases reduced from 6 to 3 years. However, in case of serious tax evasion cases (Rs. 50 lakh or more), it can go up to 10 years
- Affordable housing projects to get a tax holiday for one year
- Compliance burden of small trusts whose annual receipts does not exceed Rs. 5 crore to be eased
- Duty of copper scrap reduced to 2.5%
- Custom duty on gold and silver to be rationalised
- Duty on naphtha reduced to 2.5%.
- Duty on solar inverters raised from 5% to 20%, and on solar lanterns from 5% to 15%
- All nylon products charged with 5% customs duty
- Tunnel boring machines to attract customs duty of 7%



- Customs duty on cotton raised from 0 to 10%
- Agriculture infrastructure and development cess proposed on certain items including urea, apples, crude soyabean and sunflower oil, crude palm oil, kabuli chana and peas

#### Infrastructure:

- Vehicle scrapping policy to phase out old and unfit vehicles – all vehicles to undergo fitness test in automated fitness centres every 20 years (personal vehicles), every 15 years (commercial vehicles)
- Highway and road works announced in Kerala, Tamil Nadu, West Bengal and Assam
- Economic corridors being planned:
  - ✓ Rs. 1.03 lakh crore outlay for 3,500 km of NHs in Tamil Nadu
  - ✓ Rs. 65,000 crore investment for 1,100 km of NHs in Kerala
  - ✓ Rs. 25,000 crore for 675 km of NHs in West Bengal
- Over Rs. 34,000 crore to be allocated for 1300 km of NHs to be undertaken in next 3 years in Assam, in addition to Rs. 19,000 crore works of NHs currently in progress in the State
- Flagship Corridors/Expressways:
  - ✓ Delhi-Mumbai Expressway – Remaining 260 km to be awarded before 31.3.2021
  - ✓ Bengaluru-Chennai Expressway – 278 km to be initiated in the current FY; construction to begin in 2021-22
  - ✓ Kanpur-Lucknow Expressway – 63 km expressway providing an alternate route to NH 27 to be initiated in 2021-22
  - ✓ Delhi-Dehradun economic corridor – 210 km to be initiated in the current FY;
- Construction to begin in 2021-22
  - ✓ Raipur-Vishakhapatnam – 464 km passing through Chhattisgarh, Odisha and North Andhra Pradesh, to be awarded in the current year; construction to start in 2021-22
  - ✓ Chennai-Salem corridor – 277 km expressway to be awarded and construction to start in 2021-22
  - ✓ Amritsar-Jamnagar – Construction to commence in 2021-22
  - ✓ Delhi-Katra – Construction will commence in 2021-22
- National Asset Monetising Pipeline launched to monitor asset monetisation process
- National Rail Plan created to bring a future ready Railway system by 2030
- 100% electrification of Railways to be completed by 2023

- Future dedicated freight corridor projects –
  - ✓ East Coast corridor from Kharagpur to Vijayawada
  - ✓ East-West Corridor from Bhusaval to Kharagpur to Dankuni
  - ✓ North-South corridor from Itarsi to Vijayawada
- 'MetroLite' and 'MetroNeo' technologies to provide metro rail systems at much lesser cost with similar experience in Tier-2 cities and peripheral areas of Tier-1 cities.
- Metro services announced in 27 cities, plus additional allocations for Kochi Metro, Chennai Metro Phase 2, Bengaluru Metro Phase 2A and B, Nashik and Nagpur Metros
- Central counterpart funding to:
  - ✓ Kochi Metro Railway Phase-II of 11.5 km at a cost of Rs. 1957.05 crore
  - ✓ Chennai Metro Railway Phase –II of 118.9 km at a cost of Rs. 63,246 crore
  - ✓ Bengaluru Metro Railway Project Phase 2A and 2B of 58.19 km at a cost of Rs. 14,788 crore
  - ✓ Nagpur Metro Rail Project Phase-II and Nashik Metro at a cost of Rs. 5,976 crore and Rs. 2,092 crore respectively.
- National Hydrogen Mission to be launched to generate hydrogen from green power sources
- Recycling capacity of ports to be doubled by 2024
- Gas pipeline project to be set up in Jammu and Kashmir
- Pradhan Mantri Ujjwala Yojana (LPG scheme) to be extended to cover 1 crore more beneficiaries

#### Health and Sanitation:

- A new scheme, titled PM Atma Nirbhar Swasthya Bharat Yojana, to be launched to develop primary, secondary and tertiary healthcare
- Mission POSHAN 2.0 to improve nutritional outcomes across 112 aspirational districts
- Operationalisation of 17 new public health units at points of entry
- Modernising of existing health units at 32 airports, 15 seaports and land ports
- Jal Jeevan Mission Urban aimed at better water supply nationwide
- Strengthening of Urban Swachh Bharat Mission

#### Education:

- 100 new Sainik Schools to be set up
- 750 Eklavya schools to be set up in tribal areas
- A Central University to come up in Ladakh

**Economy and Finance:**

- Fiscal deficit stands at 9.5% of the GDP; estimated to be 6.8% in 2021-22
- Proposal to allow States to raise borrowings up to 4% of GSDP this year
- A Unified Securities Market Code to be created, consolidating provisions of the Sebi Act, Depositories Act, and two other laws
- Proposal to increase FDI limit from 49% to 74%
- An asset reconstruction company will be set up to take over stressed loans
- Deposit insurance increased from Rs 1 lakh to Rs 5 lakh for bank depositors
- Proposal to decriminalise Limited Liability Partnership Act of 2008
- Two PSU bank and one general insurance firm to be disinvested this year
- An IPO of LIC to debut this fiscal
- Strategic sale of BPCL, IDBI Bank, Air India to be completed

**Agriculture:**

- Agriculture infrastructure fund to be made available for APMCs for augmenting their infrastructure
- 1,000 more Mandis to be integrated into the E-NAM market place
- Five major fishing hubs, including Chennai, Kochi and Paradip, to be developed
- A multipurpose seaweed park to be established in Tamil Nadu

**Employment:**

- A portal to be launched to maintain information on gig workers and construction workers
- Social security to be extended to gig and platform workers
- Margin capital required for loans via Stand-up India scheme reduced from 25% to 15% for SCs, STs and women

**BUDGET KEY POINT**

1. The finance minister proposed the introduction of Aatma Nirbhar health programme with an outlay of Rs 64,180 crore over six years; this in addition to the national health mission.
2. Main interventions under PM Aatmanirbhar Swasth Bharat Yojana would include:
  - ✓ Support for Health and Wellness Centres
  - ✓ Setting up Integrated Public Health labs in all districts
  - ✓ Critical care hospital blocks
  - ✓ Strengthening of NCDC

3. Sitharaman allocated a record sum of Rs 1,10,055 crore for Indian Railways, of which Rs 1,07,100 crore has been reserved for capital expenditure in 2021-22.
4. Finance Minister Nirmala Sitharaman's budget comprised of a massive impetus for Highways and Road Transport projects. The minister set aside Rs 1.03 lakh crores from the government exchequer for the sector, of which a mammoth share was allocated to the states which are due for Legislative Assembly elections this year.
5. The government proposed further recapitalisation of state-owned banks and earmarked Rs 20,000 crore for the purpose in FY2022.
6. "FDI in insurance companies has been increased from 49 percent to 74 percent, subject to specific compliance," said Nirmala Sitharaman.  
In her 2019 budget speech, Sitharaman had said that the government will explore further easing the foreign direct investment (FDI) limit in insurance. The Insurance Regulatory and Development Authority of India (IRDAI) has also backed an increase in the limit to 74 percent.
7. BPCL, Air India, Shipping Corp, Container Corp and other disinvestments will be completed in 2021-22.
8. Barring four strategic areas, PSUs in other sectors will be divested, the finance minister said announcing the new disinvestment policy.
9. Sitharaman said the government will borrow about Rs 12 lakh crore in 2021-22. Presenting the Union Budget for 2021-22, she said expenditure for the next fiscal year has been pegged at Rs 34.83 lakh crore, which includes Rs 5.54 lakh crore of capital spending.
10. An announcement of Rs 25,000 crore road projects in poll-bound West Bengal was made during the Budget speech.
11. Ujjwala scheme will be expanded to over one crore more beneficiaries. "We will add 100 more districts in the next three years to the city gas distribution network. A gas pipeline project will be taken up in Jammu and Kashmir," said Sitharaman.
12. The finance minister also announced the scrapping of income tax for senior citizens under certain conditions, new rules for the removal of double taxation, among others.
  - ✓ "We shall reduce the compliance burden on our senior citizens who are 75 years of age and above. For senior citizens who only have pension and interest income, I propose exemption from filing their Income Tax return," the Union minister said.
13. Agriculture Infrastructure and Development Cess (AIDC) has been proposed on petrol and diesel. It will Rs 2.5/litre on petrol and Rs 4/litre on diesel.

# ECONOMIC SURVEY : 2020-21

Economic Survey, presented in the Parliament ahead of the Union Budget, is the Ministry of Finance's flagship document. The Economic Survey detailed information about the Indian economy over the past year. The Economic Survey also offers glimpses into the current state of the economy, and occasional insights into the economic outlook. Although the Constitution does not bind the government to present the Economic Survey, over the years, it has become common practice for every government to present the Economic Survey before the Union Budget.

## When was the first Economic Survey of India presented?

- ❖ India's first Economic Survey was presented in the year 1950-51.
- ❖ Up to 1964, it was presented along with the Union Budget.
- ❖ From 1964 Onwards, it has been delinked from the Budget.

## Who prepares the Economic Survey?

- ❖ The Economic Survey was prepared by the Economic Division of the Department of Economic Affairs in the Finance Ministry under the overall guidance of the Chief Economic Adviser.
- ❖ After receiving inputs from the senior officers in the Ministry of Finance, the final version of the Economic Survey is scrutinized by the Finance Secretary and finally approved by the Union Finance Minister.

## What is the significance of the Economic Survey?

- ❖ Bringing citizens close to economic policy making by providing data and analysis in a comprehensible manner is one of the services and the challenges of the Economic Survey.
- ❖ Citizen awareness and participation are key to democratize policies and economic decision making. For this reason, the Chief Economic Adviser and the Economic Division conduct extensive outreach to disseminate the Survey.

## Economic Survey: 2020-21

Finance Minister, Nirmala Sitharaman has presented Economic Survey 2020-21 in the Parliament on 29 January 2021. The major focus of this year's economic survey is the losses and impact of the Covid-19 pandemic. The survey will provide an assessment of how the Indian economy has been impacted by the deadly COVID-19 virus and how it is improving. It will also project India's gross domestic product growth for 2021-22. The Economic Survey document is prepared by the Economics Division of the Department of Economic

Affairs (DEA) under the guidance of the Chief Economic Advisor Krishnamurthy Subramanian.

According to the survey, India's economy could contract 7.7 per cent in the financial year that ends on March 31, pulled down mainly by the coronavirus pandemic and the weeks-long nationwide lockdown to contain the disease. Real GDP growth could be 11 per cent in the next financial year.

## The theme of Economic Survey, 2020-21

- ❖ Saving Lives & Livelihoods
- ❖ V shaped Recovery

### KEY HIGHLIGHTS FROM THE ECONOMIC SURVEY 2020-21

## Growth projections - Highest nominal growth since India's independence

- ❖ Government sees FY22 GDP growth at 11 per cent, and nominal GDP (which accounts for inflation) at 15.4 per cent.
- ❖ This would mark the strongest growth since India liberalised its economy in 1991, and the highest nominal growth since India's independence in 1947.
- ❖ The Economic Survey pegged India's economic contraction in 2020-21 at 7.7 per cent – the sharpest fall in four decades – mainly due to the nationwide lockdown to curb the Covid-19 pandemic.
- ❖ This matches CSO's first advance estimates that project the economy to decelerate at 7.7 per cent in 2020-21 and RBI's projection of 7.5 per cent contraction.

## Saving lives and livelihoods

- ❖ In the first chapter of the Economic Survey, the CEA writes that India turned the short-term trade-off between lives and livelihoods into a win-win situation in the medium and long term, in turn saving lives and livelihoods.
- ❖ The survey finds a strong correlation between how stringent the lockdown was, and the number of Covid cases and resultant deaths.

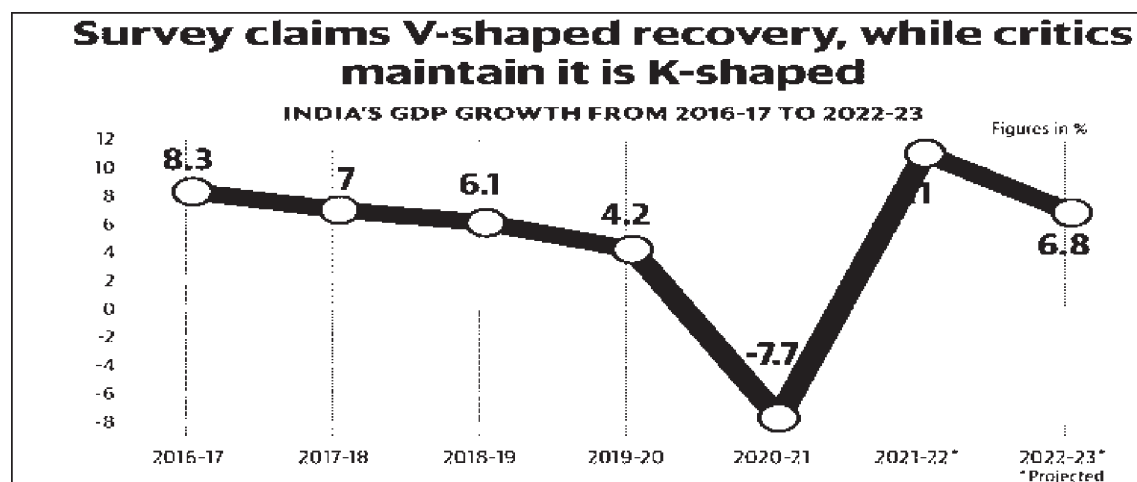
## Agriculture sector - Measures needed to double farmers income

- ❖ The agriculture sector has remained the silver lining while contact-based services, manufacturing, construction were hit the hardest.
- ❖ Starting July, a resilient V-shaped recovery is well underway, as demonstrated by the recovery in GDP growth and the sustained resurgence in high-frequency indicators such as power demand, E-way bills, GST collection, steel consumption, etc.

- ❖ However, the survey said that a paradigm shift is needed in how we view agriculture from a rural livelihood sector to a modern business enterprise.
- ❖ "In this context, both production and post-production in agriculture needs urgent reforms to enable sustainable and consistent growth,".

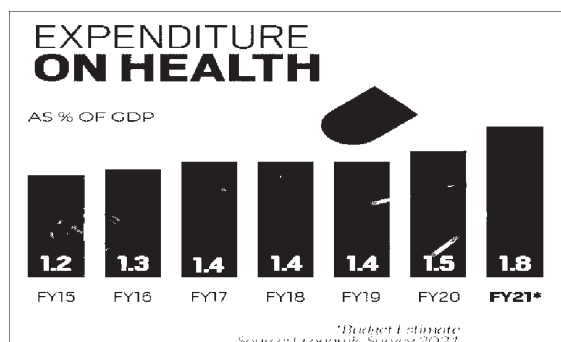
#### Agri laws and farmer welfare

- ❖ The three agricultural reform legislations are designed and intended primarily for the benefit of small and marginal farmers which constitute around 85 per cent of the total number of farmers and are the biggest sufferer of the regressive APMC regulated market regime.
- ❖ The newly introduced farm laws herald a new era of market freedom which can go a long way in the improvement of farmer welfare in India, reads the survey.



#### Healthcare in the Covid-era

- ❖ Covid-19 underlines how a healthcare crisis can become an economic and social crisis.
- ❖ Healthcare policy should not overweigh recent phenomenon however, believes Subramanian.
- ❖ There is a need for higher public spending, while healthcare infrastructure stays agile the survey suggests.
- ❖ The work done by the National health Mission (NHM) must continue, and there should be a sectoral regulator to supervise the healthcare sector, it adds.



#### PM-JAY success

- ❖ Pradhan Mantri Jan Arogya Yojana (PM-JAY) enhanced health insurance coverage, and the proportion of households with health insurance increased in Bihar, Assam and Sikkim from 2015-16 to 2019-20 by 89 per cent.
- ❖ Across all the states, the proportion of households with health insurance increased by 54 per cent for the states that implemented PM-JAY while falling by 10 per cent in states that did not.
- ❖ From 2015-16 to 2019-20, infant mortality rates declined by 12 per cent for states that did not adopt PM-JAY and by 20 per cent for the states that did.

#### GST collections above 1 lakh cr for 3 months in a row

- ❖ Owing to recovery, monthly revenue collections have witnessed an uptick.
- ❖ The monthly GST collections have crossed the Rs 1 lakh crore mark consecutively for the last 3 months; highest ever in December 2020.
- ❖ However, the general govt (centre plus states) is expected to register a fiscal slippage in FY 2020-21, on account of the shortfall in revenue and higher expenditure requirements.



**COVID pandemic affected both demand and supply**

- ❖ India was the only country to announce structural reforms to expand supply in the medium-long term and avoid long-term damage to productive capacities.
- ❖ Calibrated demand side policies to ensure that the accelerator is slowly pushed down only when the brakes on economic activities are being removed.
- ❖ A public investment programme centered around the National Infrastructure Pipeline to accelerate the demand push and further the recovery.

**Structure of India's debt**

- ❖ On the issue of debt sustainability, the survey points that India's overall debt levels as a per cent of GDP are the lowest amongst the group of G-20 OECD countries and also among the group of BRICS nations.
- ❖ India's public debt-to-GDP has been significantly low compared to high global debt levels.
- ❖ A cross-country comparison of debt levels points out that for India, the government debt level as a proportion of GDP is equal to the median in the group of G-20 OECD countries and in the group of BRICS nations.
- ❖ "India's overall debt levels as a per cent of GDP are the lowest amongst the group of G-20 OECD countries and also among the group of BRICS nations," it argues.

**India's Fiscal policies**

- ❖ The economic survey also makes a case for more active, counter-cyclical fiscal policies and warns against fiscal irresponsibility.
- ❖ "The Survey endeavours to provide the intellectual anchor for the government to be more relaxed about debt and fiscal spending during a growth slowdown or an economic crisis.
- ❖ The Survey's call for more active, counter-cyclical fiscal policy is not a call for fiscal irresponsibility.
- ❖ It is a call to break the intellectual anchoring that has created an asymmetric bias against the fiscal policy," it said.

**Rating agencies**

- ❖ The Economic Survey also hits out at sovereign rating methodology and argues fifth-largest economy can't be BBB- rated.
- ❖ "Never in the history of sovereign credit ratings has the 5th largest economy been rated as the lowest rung of investment-grade (BBB -).
- ❖ India's fiscal policy must not remain beholden to a noisy, biased measure of India's fundamentals.
- ❖ India's forex reserves can cover an additional 2.8 standard deviation negative event. It is imperative that sovereign credit rating methodology be made more transparent, less subjective," it said.

**Inflation**

- ❖ At the global level, inflation remained benign on the back of subdued economic activity in advanced economies.
- ❖ In India, headline CPI inflation averaged 6.6 per cent in 2020-21 (Apr-Dec) and stood at 4.6 per cent in December 2020 driven by rise in food inflation.
- ❖ Thali costs have increased between June 2020 and November 2020 after witnessing a sharp fall in the month of December 2020.

**Summary of economic survey 2020-21**

1. The survey expects the Indian economy to grow by 11 per cent during 2021-22 which is close to the growth forecast of 11.5 per cent made by the International Monetary Fund (IMF). This means that the Indian GDP in 2021-22 is expected to be at ₹149.2 lakh crore.
2. The gross tax revenue earned by the government during the period April to November 2020 fell by 12.6% to ₹10.26 lakh crore which can be attributed to the contraction of the economy.
3. Disinvestment which was targeted at ₹2.1 lakh crore has only been ₹15,220 crore, 7.2 per cent of the targeted amount which according to the survey happened due to the coronavirus pandemic.
4. The fiscal deficit has also gone up and as of January 8, the union government borrowed a total of ₹10.72 lakh crore, 65% more than what it had borrowed in the corresponding period in the previous financial year.
5. The survey points out that the economy is recovering during the second half of this year. The government consumption is expected to grow by 17%, after contracting by 3.9% during the first half. On the other hand, private consumption is expected to contract by 0.6% in the second half, after having contracted by 18.9% during the first half.
6. The only sector expected to grow this year according to the survey is the agriculture sector which is expected to grow by 3.4%.
7. The Goods and Services Tax (GST) collections have also increased in the second half of the year as the monthly GST collections in December 2020 stood at ₹1.15 lakh crore.
8. Bank credit growth as of January 1 stood at 6.7%. Since September 2019, bank credit growth has been in the single digits.
9. Inflation between April and December 2020 stood at 6.6% in comparison to the previous year on account of high food inflation of 9.1%.
10. The survey clearly points out the impact of the corona virus pandemic on the economy as CEA Subramanian said, "India focused on saving lives and livelihoods by its willingness to take short-term pain for long-term gain, at the onset of the Covid-19 pandemic." □□□



## SOLVED PAPER

# SSC COMBINED GRADUATE LEVEL PRELIM EXAM

Held on : 04.07.1999

(First Sitting)

### PART-(A) (I) :

#### GENERAL INTELLIGENCE

**Directions (1-2) :** From the alternatives, select the set which is most like the given set.

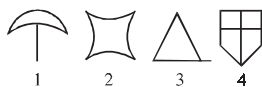
**1. Given set**

- (23, 29, 37)  
(1) (17, 21, 29)  
(2) (31, 37, 49)  
(3) (13, 15, 23)  
(4) (41, 47, 53)

**2. Given set**

- (8, 48, 64)  
(1) (8, 26, 30)  
(2) (16, 34, 31)  
(3) (12, 24, 36)  
(4) (11, 21, 13)

**3.** A series of figures are given which can be grouped into classes. From the responses, select the group into which the figures can be classified.



- (1) 2, 5, 9    (2) 1, 6, 7  
3, 6, 8    3, 5, 8  
1, 4, 7    2, 4, 9  
(3) 2, 5, 9    (4) 1, 3, 8  
3, 4, 8    2, 4, 6  
1, 6, 7    5, 7, 9

**Directions (4-5) :** Which one of the given responses would be a meaningful order of the following words?

- 4.** (a) Honey    (b) Flower  
(c) Bee    (d) Wax.  
(1) b, a, d, c    (2) b, c, a, d  
(3) d, c, b, a    (4) a, c, d, b
- 5.** (a) Plant    (b) Food  
(c) Seed    (d) Leaf  
(e) Flower  
(1) a, c, d, e, b  
(2) c, b, d, e, a  
(3) c, a, d, e, b  
(4) e, d, c, b, a

**6.** Which one set of letters when sequentially placed at the gaps in the given letter series shall complete it?

- Z X \_ T R \_ N L J \_ F D  
(1) V P H B    (2) V R H B  
(3) U P J B    (4) U P J D

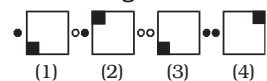
**Directions (7-9) :** From the given responses, find the missing number/date in the series.

- 7.** 10, 100, 200, 310 ?  
(1) 400    (2) 410  
(3) 420    (4) 430
- 8.** 4/12/95, 1/1/96, 29/1/96, 26/2/96?  
(1) 24/3/96    (2) 25/3/96  
(3) 26/3/96    (4) 27/3/96
- 9.** 2, 3, 10, 29, 66, ?  
(1) 89    (2) 99  
(3) 127    (4) 130

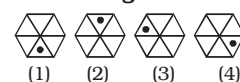
**Directions (10-11) :** Complete the series of figures, by selecting correct answer figure from the given responses.



**Answer Figures**



**Answer Figures**



**12.** A man starts from a point and walks 2 km towards north. He turns right and walks 3 km. Then he turns left and travels 2 km. What is the direction he is now facing?

- (1) East    (2) West  
(3) South    (4) North

**13.** Five men A, B, C, D and E read a newspaper. The one who reads first gives it to C, the one who reads last had taken it from A. E was not the first or last to read. There were

two readers between B and A. Find the person who read the newspaper last.

- (1) E    (2) B  
(3) D    (4) A

**14.** A is B's daughter. B is C's mother. D is C's brother. How is D related to A ?

- (1) Father    (2) Grandfather  
(3) Brother    (4) Son

**15.** 50 men can dig 40 holes in 30 days. How long will 25 men take to dig 20 holes?

- (1) 15 days    (2) 22½ days  
(3) 30 days    (4) 45 days

**16.** If GOLD is written as IQNF, how WIND can be written in the code?

- (1) YKPF    (2) VHMC  
(3) XJOE    (4) DNIW

**17.** If A = 1, PAT = 37, then TAP = ?

- (1) 73    (2) 37  
(3) 36    (4) 38

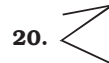
**18.** If D = 4, BAD = 7, then what is the value of ANT = ?

- (1) 8    (2) 17  
(3) 35    (4) 37

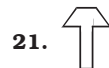
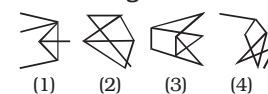
**19.** If HKUJ means FISH, what does UVCD mean ?

- (1) STAR    (2) STAB  
(3) STAL    (4) STAK

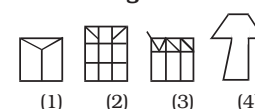
**Directions (20-21) :** In which answer figures is the given figure embedded?



**Answer Figures :**



**Answer Figures :**



**22.** Following a statement, conclusions I, II and III are given. Which one of the four alter-

natives is correct? **Statement :** Ministers arrived at the public function in their cars.

**Conclusions :**

- I. All ministers are rich
- II. Ministers have cars.
- III. Ministers came to the public function.
- (1) Only II and III are implicit in the statement.
- (2) Only I is implicit in the statement
- (3) Only I and II are implicit in the statement
- (4) Only III and I are implicit in the statement.

23. Following a statement, conclusions I and II are given. Which one of the four alternatives is correct?

**Statement :**

Philanthropes with their human compassion and zeal to help the needy have contributed to human welfare in every society.

**Conclusions :**

- I. Rich persons are philanthropes
- II. Poor people cannot act as philanthropes.
- (1) Only I is implicit in the statement.
- (2) Both I and II are implicit
- (3) Neither I nor II is implicit.
- (4) Only II is implicit.

24. Following a question, statements I and II are given. Which one of the four alternatives is correct?

**Question :**

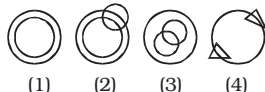
In which direction is statue of Vivekananda facing?

**Statements :**

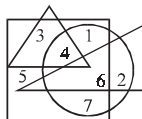
- I. The shadow of the statue falls towards east at 6 o'clock in the evening.
- II. The statue is towards the western end of the city.
- (1) Only I is sufficient to answer the question.
- (2) Only II is sufficient to answer the question.
- (3) Both I and II are needed to answer the question
- (4) Both I and II are not sufficient to answer the question.

25. Which one of the following figures represents the statement :

All the persons know English. Few of them know Hindi also. Those who know Hindi know Bengali.



26. Which number is present only in one figure?

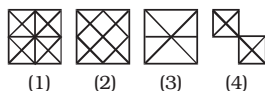


- (1) 1
- (2) 3
- (3) 5
- (4) 7

27. Among the four answer figures, which can be formed from the cut-pieces given below?



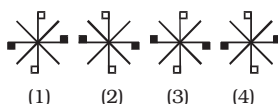
**Answer Figures**



28. Choose the correct water image of the figure from responses given below ?



**Answer Figures**



29. Which colour is opposite to yellow?

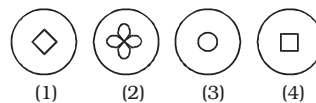


- (1) Violet
- (2) Red
- (3) Purple
- (4) Blue

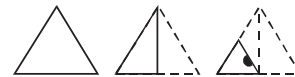
30. A piece of circular paper is folded and cut as shown below. How will it appear when opened? Select your response from answer figures.



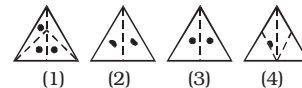
**Answer figures**



31. A triangular piece of paper is folded and punched as shown in the question figure. How will it appear when opened? Select your response from answer figures.

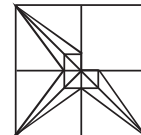


**Answer Figures :**

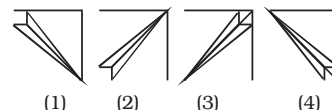


- Directions (32-33) : Which answer figure will complete the question figure ?

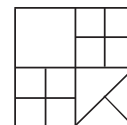
32.



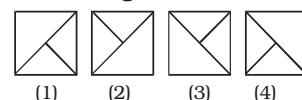
**Answer Figures :**



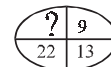
33.



**Answer Figures :**

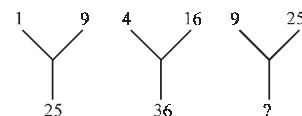


34.



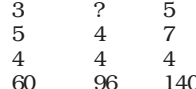
- (1) 40
- (2) 38
- (3) 39
- (4) 44

35.



- (1) 47
- (2) 49
- (3) 50
- (4) 57

36.



- (1) 4 (2) 6  
(3) 8 (4) 9
37. Find the word that cannot be formed from the letters in the word PHOTOSYNTHETIC.  
(1) THOSE (2) SCENT  
(3) PRONE (4) COTTON

**Directions (38-41) :** Select the related word/number from the given alternatives.

38. Touch : Feel :: Greet : ?  
(1) Smile  
(2) Acknowledge  
(3) Success (4) Manners
39. TALE : LATE :: ? : CAFE  
(1) FACE (2) CAEF  
(3) CEFA (4) FEAC

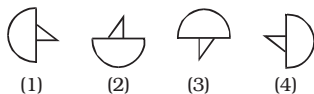
40. 3 : 243 :: 5 : ?  
(1) 405 (2) 465  
(3) 3125 (4) 546

41. 6 : 18 :: 4 : ?  
(1) 2 (2) 6  
(3) 9 (4) 16

**Directions (42-44) :** Select the related figure from the answer figures.



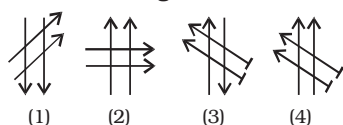
**Answer Figures**



**Answer Figures**



**Answer Figures**



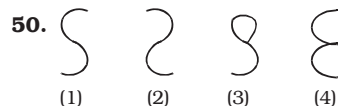
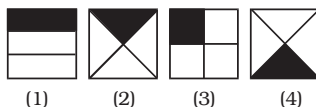
45. Which words of the following do not have the same relationship as between the words CHARITABLE and SELFISH ?  
(1) ILLUMINATE and DARKEN  
(2) ADHERE and STICK TO  
(3) CHASTE and IMMORAL  
(4) SADISTIC and KINDHEARTED

**Directions (46-48) :** Find the odd word/letters/ number pair from the given responses.

46. (1) Withdrawal  
(2) Deduction  
(3) Deposit  
(4) Debit
47. (1) 62 - 37 (2) 74 - 40  
(3) 85 - 60 (4) 103 - 78
48. (1) ABZY (2) BCYX  
(3) CDVW (4) DEVU

**Directions (49-50) :** From the given responses, find the odd figure out.

49.



**PART-(A) (II) :**

### GENERAL AWARENESS

51. Postal voting is otherwise called :  
(1) plural voting  
(2) proxy voting  
(3) weighted voting  
(4) secret voting
52. Stability of the Government is assured in :  
(1) Parliamentary Form of Government.  
(2) Presidential Form of Government.  
(3) Plural Executive System  
(4) Direction Democracy
53. According to the Indian Constitution, the vacancy in the office of the President of India shall be filled within :  
(1) 1 month (2) 6 months  
(3) 3 months (4) 1 year
54. Who is the Tennis star to become World No. 1 seed at the youngest age?  
(1) Steffi Graf  
(2) Monica Seles  
(3) Chris Evert  
(4) Martina Hingis
55. What is "Vishva Mohini"?  
(1) Name for India's Beauty Queen  
(2) The title given to Lata Mangeshkar for her contribution to music  
(3) An Indian ship  
(4) A famous book on Indian dances
56. The main function of the World Trade Organisation (WTO) is :  
(1) enforcing of Uruguay Round Agreements  
(2) facilitating multi-lateral trade relations of member countries and reviewing trade policies  
(3) administering trade dispute settlement procedures  
(4) None of the above
57. Name the author of the book *A Passage to England* :  
(1) E.M. Forster  
(2) Nirad C. Choudhary  
(3) Vikram Seth  
(4) Eric Segal
58. Which is the long-range missile that was tested by Pakistan in the wake of India testing Agni II ?  
(1) Ghauri II (2) Shaheen I  
(3) Hatf I (4) Hatf II
59. The Indian Naval Ship being converted into a maritime museum is :  
(1) Sagar Samrat  
(2) Kanishka  
(3) Samrat Ashoka  
(4) Vikrant
60. Prof. Amartya Sen is these days in the news because :  
(1) he is internationally known as a leading social economist  
(2) he has been awarded 'Bharat Ratna'  
(3) he is a recipient of Nobel Prize.  
(4) All of the above
61. The first country to legalize medically assisted suicide is :  
(1) Australia  
(2) United States  
(3) Netherlands  
(4) Switzerland
62. The Baisakhi Festival of the year 1999 is of great historical significance to Punjab because :  
(1) it commemorates the tercentenary of the foundation of Khalsa Panth

- (2) it being the last such festival of the twentieth century  
(3) of participation by a large number of Punjabis who are non resident Indians  
(4) None of the above
- 63.** Exobiology deals with the study of :  
(1) external characters of living organisms  
(2) life on the surface of the earth  
(3) life in the outer layers of atmosphere  
(4) life in other planets and space
- 64.** The Social System of the Harappans was :  
(1) Fairly egalitarian  
(2) Slave-Labour based  
(3) Colour (Varna) based  
(4) Caste based
- 65.** Which of the following Vedas provides information about the civilisation of the Early Vedic Age?  
(1) Rig-veda  
(2) Yajur-veda  
(3) Atharva-veda  
(4) Sama-veda
- 66.** The university which became famous in the post-Gupta Era was :  
(1) Kanchi (2) Taxila  
(3) Nalanda (4) Vallabhi
- 67.** Banabhatta was the court poet of which emperor ?  
(1) Vikramaditya  
(2) Kumaragupta  
(3) Harshavardhana  
(4) Kanishka
- 68.** The first Indian ruler, who established the supremacy of Indian Navy in the Arabian Sea was :  
(1) Rajaraja I  
(2) Rajendra I  
(3) Rajadhiraja I  
(4) Kulottunga I
- 69.** The Mughal painting reaches its / zenith during the reign of :  
(1) Akbar  
(2) Jahangir  
(3) Shahjahan  
(4) Aurangzeb
- 70.** Permanent Revenue settlement of Bengal was introduced by :  
(1) Clive (2) Hastings  
(3) Wellesley (4) Cornwallis
- 71.** The father of extremist movement in India is :  
(1) Motilal Nehru  
(2) Gopal Krishna Gokhale  
(3) Vallabhbhai Patel  
(4) Bal Gangadhar Tilak
- 72.** The World Bank normally gives :  
(1) short-term loans  
(2) medium-term loans  
(3) long-term loans  
(4) medium and long-term loans
- 73.** The International Monetary Fund (IMF) came into existence with :  
(1) Berlin Conference  
(2) London Conference  
(3) Brettonwoods Conference  
(4) Rome Conference
- 74.** Multiplier process in economic theory is conventionally taken to mean :  
(1) the manner in which prices increase  
(2) the manner in which banks create credit  
(3) income of an economy grows on account of an initial investment  
(4) the manner in which government expenditure increases
- 75.** Structural adjustment loans given by the World Bank are meant for :  
(1) increasing employment in agriculture  
(2) increasing export-earning capacity of the borrower country  
(3) reducing inequalities of income distribution  
(4) encouraging capital-intensive industries
- 76.** A financial instrument is called a 'primary security' if it represents the liability of :  
(1) some ultimate borrower  
(2) the Government of India  
(3) a primary cooperative bank  
(4) a commercial bank
- 77.** Service cooperatives are :  
(1) single purpose societies  
(2) credit societies  
(3) marketing societies  
(4) multi-purpose societies
- 78.** Output at break-even point is that output at which the producer is able to :  
(1) recover only operating costs  
(2) recover total costs  
(3) wipe out earlier losses  
(4) earn a normal profit
- 79.** India's share in world trade since 1950.  
(1) has been rising  
(2) has been constant  
(3) has been declining  
(4) has shown a mixed trend
- 80.** Animals do not have enzyme systems which enable them to make use of the energy from :  
(1) fat (2) water  
(3) protein  
(4) carbohydrate
- 81.** A clone is a colony of :  
(1) cells having different shapes  
(2) cells having similar shape  
(3) cells having similar genetic constitution  
(4) cells having different genetic constitutions
- 82.** The pollen grains of flowers pollinated by insects are :  
(1) smooth and dry  
(2) rough and sticky  
(3) rough and dry  
(4) large and showy
- 83.** Which one of the following substances is used for preservation of food grains?  
(1) Sodium benzoate  
(2) Vinegar  
(3) Sodium chloride  
(4) Potassium permanganate
- 84.** The disease caused by Asbestos is :  
(1) Emphysema  
(2) Paralysis  
(3) Diarrhoea  
(4) Dysentery
- 85.** In the eye, colour vision is effected by the presence of :  
(1) Choroid coat  
(2) Sclerotic coat  
(3) Rods  
(4) Cones
- 86.** The famous Lagoon lake of India is :  
(1) Dal Lake  
(2) Chilka Lake  
(3) Pulicat Lake  
(4) Mansarovar
- 87.** The splitting of different colours of light in a prism is :  
(1) Reflection of light  
(2) Dispersion of light  
(3) Diffraction of light  
(4) Refraction of light



88. Where are most of the earth's active volcanoes concentrated :

- (1) Europe
- (2) Pacific Ocean
- (3) Africa
- (4) South America

89. The deflection of the winds to the right in the northern hemisphere is caused by :

- (1) revolution of the earth
- (2) rotation of the earth
- (3) uneven heating of the earth
- (4) All the above

90. Which of the following is NOT one of the important steps in processing tea leaves?

- (1) Rolling (2) Drying
- (3) Fermenting
- (4) Withering

91. The Grand Canyon is located on the :

- (1) Colorado River
- (2) Rhine River
- (3) Tapi River (4) Niger River

92. The Savannah finds its ideal conditions of growth in :

- (1) mild and humid climate
- (2) dry summer and wet winter climate
- (3) hot humid climate with long dry season
- (4) hot summer and cool winter climate

93. What should be the proportion of forest cover for India to maintain her ecological balance?

- (1) 11.1 percent
- (2) 22.2 percent
- (3) 33.3 percent
- (4) 44.4 percent

94. Match List I with List II and find out the correct answer from the codes given below the Lists :

**List I**

**(Thermal Power Plants)**

- (a) Kahalgaon
- (b) Farakka
- (c) Ramagundam
- (d) Gandhar

**List II**

**(Locations)**

1. West Bengal
2. Bihar
3. Gujarat
4. Andhra Pradesh

**Codes :**

	a	b	c	d
(1)	1	2	3	4
(2)	4	3	1	2

- (3) 2 1 4 3
- (4) 3 2 1 4

95. Which one of the following States/Union Territories of India recorded the lowest density of population in 1991 Census?

- (1) Sikkim (2) Nagaland
- (3) Mizoram
- (4) Arunachal Pradesh

96. Three of the following pairs are wrong. Find out the correct one :

- (1) Written Constitution — England
- (2) Unitary State — USA
- (3) UN General Assembly — Veto power
- (4) SAARC — No bilateral issues

97. In Indian Republic the real executive authority rests with the :

- (1) Prime Minister
- (2) President
- (3) Bureaucrats
- (4) Council of Ministers

98. The Secretary - General of the UNO is appointed by the :

- (1) General Assembly
- (2) Security Council
- (3) Trusteeship Council
- (4) World Bank

99. Through which principle or device did Gandhiji strive to bridge economic inequalities?

- (1) Abolition of machinery
- (2) Establishment of village industries
- (3) Trusteeship theory
- (4) None of the above

100. Governance through trade union organisations is known as :

- (1) Guild Socialism
- (2) Fabian Socialism
- (3) Syndicalism
- (4) Liberalism

**PART-(B) :**

**ARITHMETIC**

101. The area of a circle is 38.5 sq. cm. Its circumference (in

cm) is  $\left( \text{use } \pi = \frac{22}{7} \right)$  :

- (1) 22 (2) 24
- (3) 26 (4) 32

102. The breadth of a rectangular hall is three-fourths of its length. If the area of the floor is 768 sq. m. then the difference between the length and breadth of the hall is :

- (1) 8 metres (2) 12 metres
- (3) 24 metres (4) 32 metres

103. A metallic hemisphere is melted and recast in the shape of a cone with the same base radius (R) as that of the hemisphere. If H is the height of the cone, then :

$$(1) H = 2R \quad (2) H = \frac{2}{3}R$$

$$(3) H = \sqrt{3}R \quad (4) B = 3R$$

104. A conical vessel whose internal radius is 12 cm and height 50 cm is full of liquid. The contents are emptied into a cylindrical vessel with radius (internal) 10 cm. The height to which the liquid rises in the cylindrical vessel is :

- (1) 25cm (2) 20cm
- (3) 24cm (4) 22cm

105. Two right circular cylinders of equal volume have their heights in the ratio 1 : 2. The ratio of their radii is :

- (1)  $\sqrt{2} : 1$  (2) 2 : 1
- (3) 1 : 2 (4) 1 : 4

106. A and B can do a work in 12 days. B and C in 15 days. C and A in 20 days. If A, B and C work together, they will complete the work in :

$$(1) 5 \text{ days} \quad (2) 7\frac{5}{6} \text{ days}$$

$$(3) 10 \text{ days} \quad (4) 15\frac{2}{3} \text{ days}$$

107. A is thrice as good a workman as B and therefore, able to finish a job in 60 days less than B. Working together they will do it in :

$$(1) 20 \text{ days} \quad (2) 22\frac{1}{2} \text{ days}$$

$$(3) 25 \text{ days} \quad (4) 30 \text{ days}$$

108. Two pipes A and B can fill a tank in 20 minutes and 30 minutes respectively. If both pipes are opened together, the time taken to fill the tank is :

- (1) 50 minutes

- (2) 12 minutes  
(3) 25 minutes  
(4) 15 minutes
- 109.** If 6 men and 8 boys can do a piece of work in 10 days and 26 men and 48 boys can do the same in 2 days, the time taken by 15 men and 20 boys to do the same type of work will be :  
(1) 5 days (2) 4 days  
(3) 6 days (4) 7 days
- 110.** A and B can do a work in 18 and 24 days respectively. They worked together for 8 days and then A left. The remaining work was finished by B in :  
(1) 5 days (2)  $5\frac{1}{3}$  days  
(3) 8 days (4) 10 days
- 111.** If a man walks 20 km at 5 km/hr, he will be late by 40 minutes. If he walks at 8 km per hr. how early from the fixed time will he reach?  
(1) 15 minutes  
(2) 25 minutes  
(3) 50 minutes  
(4)  $1\frac{1}{2}$  hours
- 112.** A boy rides his bicycle 10 km at an average speed of 12 km per hr and again travels 12 km at an average speed of 10 km per hr. His average speed for the entire trip is approximately:  
(1) 10.4 km/hr  
(2) 10.8 km/hr  
(3) 11.0 km/hr  
(4) 12.2 km/hr
- 113.** A train 180 m long moving at the speed of 20 m/sec. overtakes a man moving at a speed of 10 m/sec in the same direction. The train passes the man in :  
(1) 6 sec (2) 9 sec  
(3) 18 sec (4) 27 sec
- 114.** The distance between two cities A and B is 330 km. A train starts from A at 8 a.m. and travels towards B at 60 km/hr. Another train starts from B at 9 a.m. and travels towards A at 75 km/hr. At what time do they meet?  
(1) 10 a.m. (2) 10 : 30 a.m.  
(3) 11 a.m. (4) 11 : 30 a.m.

- 115.** In covering a certain distance, the speeds of A and B are in the ratio of 3 : 4. A takes 30 minutes more than B to reach the destination. The time taken by A to reach the destination is :

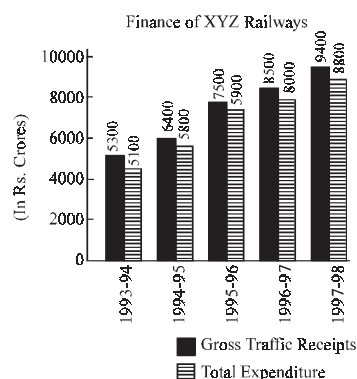
- (1) 1 hour (2)  $1\frac{1}{2}$  hours  
(3) 2 hours (4)  $2\frac{1}{2}$  hours

**Directions (115-120) :** A survey of film-watching habits of people living in 5 cities, I, II, III, IV and V is summarised below. The column (1) gives percentage of film-watchers in each city who see only one film a week. The column (2) gives the total number of film-watchers who see more than one film per week. Read the table and answer the following questions.

City	(1)	(2)
I	50	3200
II	30	3500
III	65	7000
IV	25	5400
V	80	2900

- 116.** How many film-watchers in city II see only one film a week?  
(1) 900 (2) 1500  
(3) 1600 (4) 3200
- 117.** Which city has the highest number of film-watchers who see only one film a week?  
(1) I (2) II  
(3) III (4) IV
- 118.** The city with the lowest number of film-watcher is :  
(1) I (2) II  
(3) IV (4) V
- 119.** The city with the highest number of film-watchers is :  
(1) I (2) V  
(3) IV (4) III
- 120.** The total number of all film-watchers in the five cities who see only one film a week is :  
(1) 31100 (2) 29500  
(3) 28600 (4) 28300

**Directions (121-125) :** In the following questions are based on the following bar graph. Read the graph and answer the questions.



- 121.** What is the percentage increase in the gross traffic receipts in 1995-96 as compared to 1993-94?  
(1) 33.9% (2) 41.5%  
(3) 20.7% (4) 17%
- 122.** If profit = gross traffic receipts— total expenditure, then in 1996-97, what percentage of gross traffic receipts is the profit made?  
(1) 5.9% (2) 6.4%  
(3) 7.2% (4) 8%
- 123.** In which year was the profit as a percentage of gross traffic receipts the highest?  
(1) 1997-98 (2) 1996-97  
(3) 1995-96 (4) 1994-95
- 124.** In order to make a profit of 10%. What should have been the gross traffic receipts (in Rs. crores) in 1994-95, total expenditure remaining the same?  
(1) 5,667 (2) 5,876  
(3) 6,444 (4) 7,667
- 125.** By what amount (in Rs. crores) has the expenditure increased over the period 1993-94 to 1997-98?  
(1) 4,100 (2) 3,900  
(3) 3,850 (4) 3,700
- 126.** Simplify :  $1 + \frac{1}{2 + \frac{3}{2 + \frac{4}{1 + \frac{5}{5}}}}$
- (1)  $1\frac{11}{17}$  (2)  $1\frac{5}{7}$   
(3)  $1\frac{6}{17}$  (4)  $1\frac{11}{17}$

**127.** Assume that

$$\sqrt{13} = 3.605 \text{ (approximately)}$$

$$\sqrt{130} = 11.40 \text{ (approximately)}$$

Find the value of :

$$\sqrt{1.3} + \sqrt{1300} + \sqrt{0.013}$$

$$(1) 36.164 \quad (2) 37.304$$

$$(3) 36.304 \quad (4) 37.164$$

**128.** On simplification of

$$\frac{(2.644)^2 - (2.356)^2}{0.288}$$

we get :

$$(1) 1 \quad (2) 4$$

$$(3) 5 \quad (4) 6$$

**129.** Evaluate :  $\frac{93 - 51 - 54 \div 10}{-3(5) - 2 \times 4 \div 2}$

$$(1) \frac{9}{10} \quad (2) -\frac{8}{17}$$

$$(3) -\frac{16}{19} \quad (4) \frac{4}{7}$$

**130.** By how much does  $\sqrt{12} + \sqrt{18}$

exceed  $\sqrt{3} + \sqrt{2}$  ?

$$(1) 2(\sqrt{3} - \sqrt{2})$$

$$(2) 2(\sqrt{3} - \sqrt{2})$$

$$(3) \sqrt{3} + 2\sqrt{2}$$

$$(4) \sqrt{2} - 4\sqrt{3}$$

**131.** The value of

$$\sqrt{5+2\sqrt{6}} - \frac{1}{\sqrt{5+2\sqrt{6}}} \text{ is :}$$

$$(1) 2\sqrt{2} \quad (2) 2\sqrt{3}$$

$$(3) 1 + \sqrt{5} \quad (4) \sqrt{5} - 1$$

**132.** The value of  $(243)^{0.16} \times (243)^{0.04}$  is equal to :

$$(1) 0.16 \quad (2) 3$$

$$(3) \frac{1}{3} \quad (4) 0.04$$

**133.** The simplification of

$$\frac{0.06 \times 0.06 \times 0.06 - 0.05 \times 0.05 \times 0.05}{0.06 \times 0.06 + 0.06 \times 0.05 + 0.05 \times 0.05}$$

gives :

$$(1) 0.01 \quad (2) 0.001$$

$$(3) 0.1 \quad (4) 0.02$$

**134.**  $1 + \frac{1}{2} + \frac{1}{4} + \frac{1}{7} + \frac{1}{14} + \frac{1}{28}$  is equal

to :

$$(1) 2 \quad (2) 2.5$$

$$(3) 3 \quad (4) 3.5$$

**135.**  $5 - [4 - \{3 - (3 - 3 - 6)\}]$  is equal to :

$$(1) 10 \quad (2) 6$$

$$(3) 4 \quad (4) 0$$

**136.** If the square root of 841 is 29, then 0.00000841 is equal to :

$$(1) 0.029 \quad (2) 0.0029$$

$$(3) 0.00029 \quad (4) 0.29$$

**137.** The value of  $\sqrt{2^4} + \sqrt[3]{64} + \sqrt[4]{2^8}$  is :

$$(1) 12 \quad (2) 16$$

$$(3) 18 \quad (4) 24$$

**138.** If  $a * b = 2a - 3b + ab$ , then  $3 * 5 + 5 * 3$  is equal to :

$$(1) 22 \quad (2) 24$$

$$(3) 26 \quad (4) 28$$

**139.** What is the square root of 0.09?

$$(1) 0.3 \quad (2) 0.03$$

$$(4) 0.003 \quad (4) 3.0$$

**140.** Simplify :  $\left[ \sqrt[3]{6\sqrt{5^9}} \right]^4 \left[ \sqrt[3]{6\sqrt{5^9}} \right]^4$

$$(1) 5^2 \quad (2) 5^4$$

$$(3) 5^8 \quad (4) 5^{12}$$

**141.** If  $27^{2x-1} = (243)^3$  then the value of x is :

$$(1) 3 \quad (2) 6$$

$$(3) 7 \quad (4) 9$$

**142.**  $\sqrt{\frac{0.49}{0.25}} + \sqrt{\frac{0.81}{0.36}}$  is equal to :

$$(1) 7\frac{9}{10} \quad (2) 2\frac{9}{10}$$

$$(3) \frac{9}{10} \quad (4) 9\frac{9}{10}$$

**143.** If  $\log(0.57) = 1.756$  then the value of  $\log 57 + \log(0.57)^3 +$

$\log \sqrt{0.57}$  is :

$$(1) 0.902 \quad (2) 1.902$$

$$(3) 1.146 \quad (4) 2.146$$

**144.** Which of the following fractions is the smallest?

$$\frac{7}{6}, \frac{7}{9}, \frac{4}{5}, \frac{5}{7}$$

$$(1) \frac{7}{6} \quad (2) \frac{7}{9}$$

$$(3) \frac{4}{5} \quad (4) \frac{5}{7}$$

**145.**  $9^6 - 11$  when divided by 8 would leave a remainder of :

$$(1) 0 \quad (2) 1$$

$$(3) 2 \quad (4) 3$$

**146.** The square root of a positive number less than 100 lies between :

$$(1) 0 \text{ and } 1000$$

$$(2) 0 \text{ and } 10$$

$$(3) -10 \text{ and } 10$$

$$(4) -100 \text{ and } 100$$

**147.** One-fourth of a tank holds 135 litres of water. What part of the tank is full if it contains 180 litres of water?

$$(1) \frac{2}{5} \quad (2) \frac{2}{3}$$

$$(3) \frac{1}{3} \quad (4) \frac{1}{6}$$

**148.** The HCF and LCM of two numbers are 13 and 455 respectively. If one of the numbers lies between 75 and 125 then, that number is :

$$(1) 78 \quad (2) 91$$

$$(3) 104 \quad (4) 117$$

**149.** The LCM of two numbers is 864 and their HCF is 144. If one of the numbers is 288, the other number is :

$$(1) 576 \quad (2) 1296$$

$$(3) 432 \quad (4) 144$$

**150.** What is two-thirds of half of 369?

$$(1) 123 \quad (2) 246$$

$$(3) 246\frac{3}{8} \quad (4) 271\frac{3}{4}$$

**151.** A boy was asked to multiply a certain number by 50. He multiplied it by 30 and got his answer less than the correct one by 400. The number to be multiplied was :

$$(1) 10 \quad (2) 20$$

$$(3) 30 \quad (4) 40$$

**152.** 0.6 of a number is equal to 0.08 of another number. The ratio of the numbers will be :

$$(1) 3 : 4 \quad (2) 4 : 3$$

$$(3) 2 : 15 \quad (4) 2 : 9$$

**153.**  $\frac{1}{5}$  of a number exceeds  $\frac{1}{7}$  of the same number by 10. The number is :

$$(1) 125 \quad (2) 150$$

$$(3) 175 \quad (4) 200$$

**154.** A boy was asked to find the

value of  $\frac{3}{8}$  of a sum of money.

Instead of multiplying the

sum by  $\frac{3}{8}$  he divided it by  $\frac{3}{8}$

and then his answer exceeded by Rs. 55. Find the correct answer ?

- (1) Rs. 9      (2) Rs. 24  
(3) Rs. 64      (4) Rs. 1,320
- 155.** The sum of three consecutive odd natural numbers each divisible by 3 is 72. What is the largest among them?  
(1) 21      (2) 24  
(3) 27      (4) 36
- 156.** If \*381 is divisible by 11, then the digit at the place of \* is :  
(1) 0      (2) 1  
(3) 4      (4) 7
- 157.** By which smallest number should 5808 be multiplied so that it becomes a perfect square?  
(1) 2      (2) 7  
(3) 11      (4) 3
- 158.** The least number which when divided by 4, 6, 8, 12 and 16 leaves a remainder of 2 in each case is :  
(1) 46      (2) 48  
(3) 50      (4) 56
- 159.** Sum of two numbers is 40 and their product is 375. What will be the sum of their reciprocals?  
(1)  $\frac{8}{75}$       (2)  $\frac{1}{40}$   
(3)  $\frac{75}{8}$       (4)  $\frac{75}{4}$
- 160.** The product of the LCM and HCF of two numbers is 24. The difference of the two numbers is 2. Find the numbers?  
(1) 8 and 6      (2) 8 and 10  
(3) 2 and 4      (4) 6 and 4
- 161.** In a class  $\frac{3}{5}$  of the students are girls and rest are boys. If  $\frac{2}{9}$  of the girls and  $\frac{1}{4}$  of the boys are absent. What part of the total number of students are present?  
(1)  $\frac{23}{30}$       (2)  $\frac{23}{36}$   
(3)  $\frac{18}{49}$       (4)  $\frac{17}{25}$
- 162.** Two numbers differ by 5. If their product is 336, the sum of the two numbers is :  
(1) 21      (2) 28  
(3) 37      (4) 51
- 163.** The maximum number of students among whom 1001 pens and 910 pencils can be distributed in such a way that each student gets same number of pens and same number of pencils, is :  
(1) 91      (2) 910  
(3) 1001      (4) 1911
- 164.** Unit digit in  $(264)^{102} + (264)^{103}$  is :  
(1) 0      (2) 4  
(3) 6      (4) 8
- 165.** Which one of the following is the least?  
 $\sqrt{3}, \sqrt[3]{2}, \sqrt{2}$  and  $\sqrt[3]{4}$   
(1)  $\sqrt{2}$       (2)  $\sqrt[3]{4}$   
(3)  $\sqrt{3}$       (4)  $\sqrt[3]{2}$
- 166.** A person who spends  $66\frac{2}{3}\%$  of his income is able to save Rs. 1,200 per month. His monthly expenses (in Rs) is :  
(1) 1,200      (2) 2,400  
(3) 3,000      (4) 3,200
- 167.** If 80% of A = 50% of B and B = x% of A, then the value of x is :  
(1) 400      (2) 300  
(3) 160      (4) 150
- 168.** If x is 80% of y, what percent of x is y?  
(1) 75%      (2) 80%  
(3) 100%      (4) 125%
- 169.** In a town, the population was 8000. In one year, male population increased by 10% and female population increased by 8% but the total population increased by 9%. The number of males in the town was :  
(1) 4000      (2) 4500  
(3) 5000      (4) 6000
- 170.** In an examination, there were 1000 boys and 800 girls. 60% of the boys and 50% of the girls passed. Find the percent of the candidates failed ?  
(1) 46.4      (2) 48.4  
(3) 44.4      (4) 49.6
- 171.** If A exceeds B by 40%, B is less than C by 20%, then A : C is :  
(1) 28 : 25      (2) 26 : 25  
(3) 3 : 2      (4) 3 : 1
- 172.** Price of sugar rises by 20%. By how much percent should the consumption of sugar be reduced so that the expenditure does not change?  
(1) 20      (2) 10  
(3)  $16\frac{2}{3}$       (4) 15
- 173.** In a school 70% of the students are girls. The number of boys are 510. Then the total number of students in the school is :  
(1) 850      (2) 1700  
(3) 1830      (4) 1900
- 174.** Applied to a bill for Rs. 1,00,000 the difference between a discount of 40% and two successive discounts of 36% and 4% is :  
(1) Nil      (2) Rs. 1,440  
(3) Rs. 2,500      (4) Rs. 4,000
- 175.** A tradesman marks his goods 10% above his cost price. If he allows his customers 10% discount on the marked price, how much profit or loss does he make, if any?  
(1) 1% gain  
(2) 1% loss  
(3) 5% gain  
(4) No gain, no loss
- 176.** A discount of 15% on one article is the same as discount of 20% on a second article. The costs of the two articles can be :  
(1) Rs. 85, Rs. 60  
(2) Rs. 60, Rs. 40  
(3) Rs. 40, Rs. 20  
(4) Rs. 80, Rs. 60
- 177.** An agent gets a commission of 2.5% on the sales of cloth. If on a certain day, he gets Rs. 12.50 as commission, the cloth sold through him on that day is worth :  
(1) Rs. 250      (2) Rs. 500  
(3) Rs. 750      (4) Rs. 1,250
- 178.** A sum of money doubles itself at compound interest in 15 years. In how many years it will become eight times?  
(1) 30      (2) 45  
(3) 50      (4) 60
- 179.** Compound interest (compounded annually) on a certain sum of money for 2 years at 4% per annum is Rs. 102.

The simple interest on the same sum for the same rate and for the same period will be :

- (1) Rs. 99 (2) Rs. 101  
(3) Rs. 100 (4) Rs. 98

- 180.** A sum of money becomes  $\frac{7}{6}$  of itself in 3 years at a certain rate of simple interest. The rate per annum is :

- (1)  $5\frac{5}{9}\%$  (2)  $6\frac{5}{9}\%$   
(3) 18% (4) 25%

- 181.** The simple interest on a certain sum at 5% per annum for 3 years and 4 years differ by Rs. 42. The sum is :

- (1) Rs. 210 (2) Rs. 280  
(3) Rs. 750 (4) Rs. 840

- 182.** Oranges are bought at 7 for Rs. 3. At what rate per hundred must they be sold to gain 33%?

- (1) Rs. 56 (2) Rs. 60  
(3) Rs. 58 (4) Rs. 57

- 183.** The cost price of 36 books is equal to the selling price of 30 books. The gain is :

- (1) 20% (2)  $16\frac{4}{6}\%$   
(3) 18% (4)  $82\frac{2}{6}\%$

- 184.** A man wanted to sell an article with 20% profit; but he actually sold at 20% loss for Rs. 480. At what price he wanted to sell it to earn the profit?

- (1) Rs. 720 (2) Rs. 840  
(3) Rs. 600 (4) Rs. 750

- 185.** A person sells two machines at Rs. 396 each. On one he gains 10% and on the other he loses 10%. His profit or loss in the whole transaction is :

- (1) no gain no loss  
(2) 1% loss  
(3) 1% profit  
(4) 8% profit

- 186.** A trader bought 10 kg of apples for Rs. 405 out of which 1 kg of apples were found to be rotten. If he wishes to make a profit of 10%, at what rate should he sell the remaining apples per kg?

- (1) Rs. 45 (2) Rs. 49.50  
(3) Rs. 50 (4) Rs. 51

- 187.** If  $a : b = 7 : 9$  and  $b : c = 15 : 7$ , then what is  $a : c$ ?

- (1) 5 : 3 (2) 3 : 5  
(3) 7 : 21 (4) 7 : 15

- 188.** By mistake, instead of dividing Rs. 117 among A, B and

C in the ratio  $\frac{1}{2} : \frac{1}{3} : \frac{1}{4}$  it was

divided in the ratio of 2 : 3 : 4. Who gains the most and by how much?

- (1) A, Rs. 28 (2) B, Rs. 3  
(3) C, Rs. 20 (4) C, Rs. 25

- 189.** A and B have money in the ratio 2 : 1. If A gives Rs. 2 to B, the money will be in the ratio 1 : 1. What were the initial amounts they had?

- (1) Rs. 12 and Rs. 6  
(2) Rs. 16 and Rs. 8  
(3) Rs. 8 and Rs. 4  
(4) Rs. 6 and Rs. 3

- 190.** The incomes of A, B and C are in the ratio 3 : 7 : 4 and their expenses in the ratio 4 : 3 : 5. If A saves Rs. 300 out of an income of Rs. 2,400, the savings of B and C are :

- (1) Rs. 4,025 and Rs. 575  
(2) Rs. 1,575 and Rs. 2,625  
(3) Rs. 2,750 and Rs. 1,525  
(4) Rs. 3,725 and Rs. 1,525

- 191.** An 85m long rod is divided into two parts. If one part is  $\frac{2}{3}$  of the other part, then the

longer part (in metres) is :

- (1) 34 (2)  $56\frac{2}{3}$   
(3) 85 (4) 51

- 192.** A student was asked to find the arithmetic mean of the following 12 numbers :

3, 11, 7, 9, 15, 13, 8, 19, 17, 21, 14 and x

He found the mean to be 12. The value of x will be :

- (1) 3 (2) 7  
(3) 17 (4) 31

- 193.** A company produces an average of 4000 items per month for the first 3 months. How much items, it much produce on an average per month over

the next 9 months to average 4375 items per month over the whole year?

- (1) 4500 (2) 4600  
(3) 4680 (4) 4710

- 194.** The average of five numbers is 27. If one number is excluded, the average becomes 25. The excluded number is :

- (1) 25 (2) 27  
(3) 30 (4) 35

- 195.** The average of the marks obtained in an examination by 8 students was 51 and by 9 other students was 68. The average marks of the 17 students was :

- (1) 59 (2) 59.5  
(3) 60 (4) 60.5

- 196.** If the length of the diagonal AC of a square ABCD is 5.2 cm, then the area of the square is :

- (1) 15.12 sq.cm  
(2) 13.52 sq.cm  
(3) 12.62 sq.cm  
(4) 10.00 sq.cm.

- 197.** If diagonal of a cube is  $\sqrt{12}$  cm, then its volume in cubic cm is :

- (1) 8 (2) 12  
(3) 24 (4)  $3\sqrt{2}$

- 198.** The length and breadth of a rectangular field are in the ratio of 3 : 2. If the perimeter of the field is 80m, its breadth (in metres) is :

- (1) 18 (2) 16  
(3) 10 (4) 24

- 199.** The radius of a circular wheel is 1.75 m. The number of revolutions it will make in travelling 11 km is :

$$\left( \text{use } \pi = \frac{22}{7} \right)$$

- (1) 800 (2) 900  
(3) 1000 (4) 1200

- 200.** If the radius of a sphere is increased by 2 cm. its surface area increased by 352 cm<sup>2</sup>. The radius of sphere before change is :

$$\left( \text{use } \pi = \frac{22}{7} \right)$$

- (1) 3 cm (2) 4 cm  
(3) 5 cm (4) 6 cm



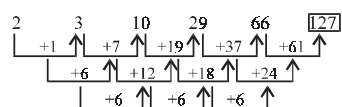
## ANSWERS

1. (4)	2. (3)	3. (3)	4. (2)
5. (3)	6. (1)	7. (4)	8. (2)
9. (3)	10. (3)	11. (4)	12. (4)
13. (3)	14. (3)	15. (3)	16. (1)
17. (2)	18. (3)	19. (2)	20. (3)
21. (3)	22. (1)	23. (3)	24. (4)
25. (1)	26. (3)	27. (2)	28. (2)
29. (1)	30. (3)	31. (3)	32. (2)
33. (2)	34. (2)	35. (2)	36. (2)
37. (3)	38. (2)	39. (1)	40. (3)
41. (4)	42. (1)	43. (1)	44. (4)
45. (2)	46. (3)	47. (2)	48. (3)
49. (1)	50. (3)	51. (2)	52. (2)
53. (2)	54. (4)	55. (4)	56. (2)
57. (2)	58. (1)	59. (4)	60. (4)
61. (3)	62. (1)	63. (4)	64. (1)
65. (1)	66. (3)	67. (3)	68. (1)
69. (2)	70. (4)	71. (4)	72. (4)
73. (3)	74. (3)	75. (4)	76. (2)
77. (3)	78. (2)	79. (4)	80. (2)
81. (3)	82. (2)	83. (1)	84. (1)
85. (4)	86. (2)	87. (2)	88. (2)
89. (2)	90. (3)	91. (1)	92. (3)
93. (3)	94. (3)	95. (4)	96. (4)
97. (4)	98. (1)	99. (3)	100. (3)
101. (1)	102. (1)	103. (1)	104. (3)
105. (1)	106. (3)	107. (2)	108. (2)
109. (2)	110. (2)	111. (3)	112. (2)
113. (3)	114. (3)	115. (3)	116. (2)
117. (3)	118. (2)	119. (4)	120. (1)
121. (2)	122. (1)	123. (4)	124. (3)
125. (4)	126. (1)	127. (3)	128. (3)
129. (3)	130. (3)	131. (1)	132. (2)
133. (1)	134. (1)	135. (1)	136. (2)
137. (1)	138. (1)	139. (1)	140. (2)
141. (1)	142. (2)	143. (1)	144. (4)
145. (3)	146. (3)	147. (3)	148. (2)
149. (3)	150. (1)	151. (2)	152. (3)
153. (3)	154. (2)	155. (3)	156. (4)
157. (4)	158. (3)	159. (1)	160. (4)
161. (1)	162. (3)	163. (1)	164. (1)
165. (4)	166. (2)	167. (3)	168. (4)
169. (1)	170. (3)	171. (1)	172. (3)
173. (2)	174. (2)	175. (2)	176. (4)
177. (2)	178. (2)	179. (3)	180. (1)
181. (4)	182. (4)	183. (1)	184. (1)
185. (2)	186. (2)	187. (1)	188. (4)
189. (3)	190. (1)	191. (4)	192. (2)
193. (1)	194. (4)	195. (3)	196. (2)
197. (1)	198. (2)	199. (3)	200. (4)

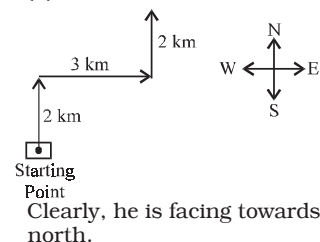
## EXPLANATIONS

- (4) All the three number in the given set are Prime Numbers. There is only one such option, i.e., (4) which contains the set of Prime Numbers.
- (3) The second and the third numbers in the given set are multiples of the first numbers. Thus,  
 $48 = 8 \times 6$  and  $64 = 8 \times 8$   
Similarly,  
 $24 = 12 \times 2$  and  $36 = 12 \times 3$
- (3) There are three types of figures:  
**Ist Type :** Figures consisting of straight lines only.  
**IInd Type :** Figures consisting of curved lines only.  
**IIIRD Type :** Figures consisting of straight - cum - curved lines.  
**Ist Type :** Figures (3), (4) and (8)  
**IInd Type :** Figures (2), (5) and (9).  
**III Type :** Figures (1), (6) and (7).
- (2) The meaningful order :  
Flower  $\rightarrow$  Bee  $\rightarrow$  Honey  $\rightarrow$  Wax  
(b) (c) (a) (d)
- (3) The meaningful order :  
Seed  $\rightarrow$  Plant  $\rightarrow$  Leaf  $\rightarrow$  Flower  $\rightarrow$  Food  
(c) (a) (d) (e) (b)
- (1)  
 $Z \xrightarrow{-2} X \xrightarrow{-2} \boxed{V} \xrightarrow{-2} T \xrightarrow{-2} R \xrightarrow{-2} \boxed{P}$ ;  
 $P \xrightarrow{-2} N \xrightarrow{-2} L \xrightarrow{-2} J \xrightarrow{-2} \boxed{H} \xrightarrow{-2} F \xrightarrow{-2} D$
- (4) The given number series is based on the following pattern:  
 $10 + 90 = 100$   
 $100 + (90 + 10) = 200$   
 $200 + (90 + 20) = 310$   
 $310 + (90 + 30) = \boxed{430}$
- (2)  $4 / 12 / 95$  to  $1 / 1 / 96 = 28$  days  
 $1 / 1 / 96$  to  $29 / 1 / 96 = 28$  days  
 $29 / 1 / 96$  to  $26 / 2 / 96 = 28$  days  
 $26 / 2 / 96$  to  $25 / 3 / 96 = 28$  days  
**Remember:** 1996 was a leap year and hence the month of February contained 29 days.

9. (3)



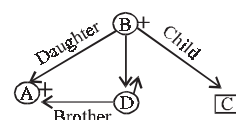
- (3) The square rotates through  $45^\circ$  clockwise while the white and the black dots move in anticlockwise direction (i.e., from left to right).
- (4) The black dot moves respectively, 2, 3, 4, 5 .. sectors in clockwise direction.
- (4)



- (3) According to question,  

I	II	III	IV	V
↓	↓	↓	↓	↓
B	C	E	A	D

The gap of two readers  
Therefore, D read the newspaper in the last.
- (3) A is the daughter of B.  
B is the mother of C.  
Therefore, B is the mother of A and C.  
D is the brother of C.  
Therefore, D is the son of B.  
Thus, D is the brother of A.  
**PICTORIAL METHOD**



- (3)  $\because 50$  men can dig 40 holes in 30 days  
 $\therefore 25$  men can dig 20 holes in

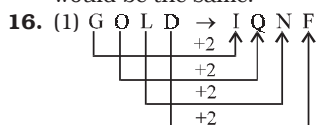
$$\frac{30 \times 50 \times 20}{40 \times 25} = 30 \text{ days}$$

**TRICK**

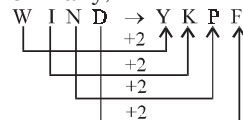
$$\text{Number of men} = \frac{x}{2}$$

$$\text{and work} = \frac{1}{2}$$

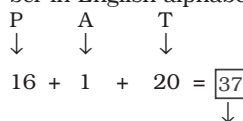
Therefore, days required would be the same.



Similarly,

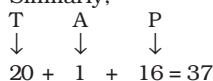


17. (2) A = 1 → The position number in English alphabet.

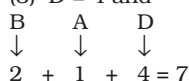


Sum of Position Numbers of the letters in English alphabet.

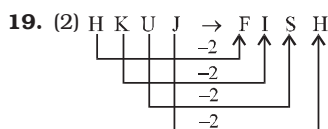
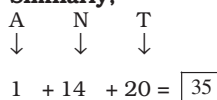
Similarly,



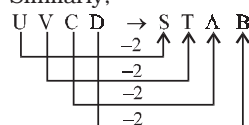
18. (3) D = 4 and



Similarly,



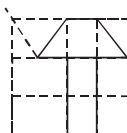
Similarly,



20. (3) The given figures is embedded in answer figure (3).



21. (3) The given figure is embedded in answer figure (3).

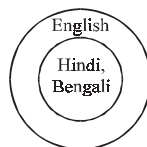


22. (1) Only II and III are implicit in the statement.

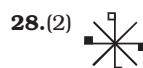
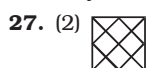
23. (3) Neither I nor II is implicit.

24. (4) Both I and II are not sufficient to answer the question.

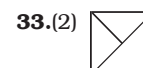
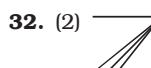
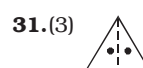
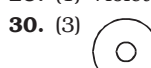
25. (1)



26. (3) The number '5' is present only in square.



29. (1) Violet



34. (2)  $9 + 2^2 = 13$

$$13 + 3^2 = 22$$

$$22 + 4^2 = 38$$

35. (2)  $(1)^2 \leftarrow 1 \rightarrow (3)^2$

$$25 \rightarrow (5)^2$$

$$(2)^2 \leftarrow 4 \rightarrow (4)^2$$

$$36 \rightarrow (6)^2$$

Similarly,

$$(3)^2 \leftarrow 9 \rightarrow (5)^2$$

$$? \rightarrow (7)^2 = 49$$

36. (2) The lowermost number in each column is the product of the other numbers.

$$3 \times 5 \times 4 = 60$$

$$5 \times 7 \times 4 = 140$$

Therefore,

$$? = \frac{96}{4 \times 4} = 6$$

37. (3) The letter 'R' is not present in the word PHOTOSYNTHETIC.

38. (2) A Touch has Feeling effect. Similarly, Greet is Acknowledged.

edged.

39. (1)

$$1 \ 2 \ 3 \ 4 \quad 3 \ 2 \ 1 \ 4$$

$$T \ A \ L \ E \Rightarrow L \ A \ T \ E$$

The first and the third letters have been interchanged.

Therefore,

$$3 \ 2 \ 1 \ 4 \quad 1 \ 2 \ 3 \ 4$$

$$C \ A \ F \ E \Rightarrow F \ A \ C \ E$$

40. (3)  $(3)^5 = 243$

$$\text{Therefore, } ? = (5)^5 = 3125$$

41. (4)  $6 + 12 = 18$

$$\text{Therefore, } ? = 4 + 12 = 16$$

42. (1) From first figure to second the design rotates  $90^\circ$  clockwise.



43. (1)

44. (4) From first figure to second figure the horizontal line rotates  $45^\circ$  clockwise.

45. (2) Charitable and selfish are antonyms to each other. But Adhere and Stick To are synonymous to each other.

46. (3) Except Deposit, all other words are relative synonyms of one another.

47. (2) In all other pairs of numbers the difference between the two numbers is of 25.

$$62 - 37 = 25$$

$$85 - 60 = 25$$

$$103 - 78 = 25$$

$$\text{But, } 74 - 40 = 34$$

48. (3)  $A \xrightarrow{+1} B$  and  $Z \xrightarrow{-1} Y$

$$B \xrightarrow{+1} C \text{ and } Y \xrightarrow{-1} X$$

$$D \xrightarrow{+1} E \text{ and } V \xrightarrow{-1} U$$

But

$$C \xrightarrow{+1} D \text{ and } V \xrightarrow{+1} W$$

49. (1) Except in figure (1), one-fourth part of the square is blackened. In figure (1) one-third part of the square is blackened.

50. (3) Figure (3) has one closed end.

51. (2) proxy voting

52. (2) Presidential Form of Government.

53. (2) 6 months

54. (4) Martina Hingis

55. (4) A famous book on Indian dances

56. (2) facilitating multi-lateral trade relations of member countries and reviewing trade

- policies
57. (2) Nirad C. Choudhary
58. (1) Ghauri II
59. (4) Vikrant
60. (4) All of the above
61. (3) Netherlands
62. (1) it commemorates the tercentenary of the foundation of Khalsa Panth
63. (4) life in other planets and space
64. (1) Fairly egalitarian
65. (1) Rig-veda
66. (3) Nalanda
67. (3) Harshavardhana
68. (1) Rajaraja I
69. (2) Jahangir
70. (4) Cornwallis
71. (4) Bal Gangadhar Tilak
72. (4) medium and long-term loans
73. (3) Brettonwoods Conference
74. (3) income of an economy grows on account of an initial investment
75. (4) encouraging capital-intensive industries
76. (2) the Government of India
77. (3) marketing societies
78. (2) recover total costs
79. (4) has shown a mixed trend
80. (2) water
81. (3) cells having similar genetic constitution
82. (2) rough and sticky
83. (1) Sodium benzoate
84. (1) Emphysema
85. (4) Cones
86. (2) Chilka Lake
87. (2) Dispersion of light
88. (2) Pacific Ocean
89. (2) rotation of the earth
90. (3) Fermenting
91. (1) Colorado River
92. (3) hot humid climate with long dry season
93. (3) 33.3 percent
94. (3)  $\begin{matrix} \mathbf{a} & \mathbf{b} & \mathbf{c} & \mathbf{d} \\ 2 & 1 & 4 & 3 \end{matrix}$
95. (4) Arunachal Pradesh
96. (4) SAARC — No bilateral issues
97. (4) Council of Ministers
98. (1) General Assembly
99. (3) Trusteeship theory
100. (3) Syndicalism
101. (1) We know that  
Area of circle =  $\pi r^2$   
 $\therefore$  According to question,  
 $\pi r^2 = 38.5 \text{ sq.cm.}$

$$\therefore r^2 = \frac{38.5}{22} \times 7 = (3.5)^2$$

$$\therefore r = 3.5 \text{ cm}$$

$$\therefore \text{Circumference of circle}$$

$$= 2\pi r = 2 \times \frac{22}{7} \times 3.5 = 22 \text{ cm}$$

102. (1) Let the length of rectangular hall =  $x \text{ m}$

$$\therefore \text{Breadth} = \frac{3}{4} \times x \text{ m}$$

we know that

Area of rectangular

= Length  $\times$  Breadth

$$= x \times \frac{3}{4} x \text{ sq.m.} = \frac{3}{4} x^2 \text{ m}^2$$

$\therefore$  According to question,

$$\frac{3}{4} x^2 = 768$$

$$\therefore x^2 = \frac{768 \times 4}{3}$$

$$\text{or, } x = \sqrt{\frac{768 \times 4}{3}} = 32 \text{ m}$$

$$\therefore \text{Length} = 32 \text{ cm and}$$

$$\text{Breadth} = 24 \text{ m}$$

$$\therefore \text{Required difference}$$

$$= 32 - 24 = 8 \text{ m}$$

103. (1) According to question,  
Volume of hemisphere  
= Volume of cone

$$\frac{2}{3} \pi R^3 = \frac{1}{3} \pi R^2 H \quad \therefore 2R = H$$

104. (3) In both the vessels, the volume of liquid will be same.

$\therefore$  Volume of liquid in cylinder = Volume of liquid in cone.

If the height of liquid in cylinder be  $h \text{ cm}$ , then

$$\pi r^2 h = \frac{1}{3} \pi \times (12)^2 \times 50$$

$$\therefore h = \frac{1}{3} \times \frac{12 \times 12 \times 50}{10 \times 10} = 24 \text{ cm}$$

105. (1) Let radius are  $r_1$  and  $r_2$  respectively, then  $\pi r_1^2 h_1 = \pi r_2^2 h_2$  where  $h_1$  and  $h_2$  are heights  
 $\therefore$  According to question,  
 $h_1 : h_2 = 1 : 2$

$$\therefore r_1 : r_2 = \sqrt{h_2 : h_1} = \sqrt{2 : 1} = \sqrt{2} : 1$$

106. (3) According to question,  
A and B can do a work in 12 days

$\therefore (A + B)$ 's one days's work

$$= \frac{1}{12}$$

Similarly,

$$(B + C)\text{'s one day's work} = \frac{1}{15}$$

and  $(C + A)$  one day's work

$$= \frac{1}{20}$$

$\therefore 2(A + B + C)$ 's one days's work

$$= \frac{1}{12} + \frac{1}{15} + \frac{1}{20} = \frac{10 + 8 + 6}{120} = \frac{1}{5}$$

$(A + B + C)$ 's one days's work

$$= \frac{1}{10}$$

$\therefore A, B$  and  $C$  together can finish the whole work in 10 days.

107. (2) Let  $A$  can finish the whole work in  $x$  days.

$\therefore B$  can finish the same work in  $3x$  days.

According to question,

$$3x - x = 60$$

$$\therefore x = 30 \text{ days}$$

$\therefore A$  can finish the work in 30 days and  $B$  can finish the same work in 90 days.

$\therefore (A + B)$ 's one day's work

$$= \frac{1}{30} + \frac{1}{90} = \frac{4}{90}$$

$\therefore (A + B)$ 's can finish the

$$\text{complete work in} = \frac{90}{4}$$

$$= 22 \frac{1}{2} \text{ days.}$$

108. (2) Required time =  $\frac{1}{\frac{1}{20} + \frac{1}{30}}$

$$= \frac{20 \times 30}{50} = 12 \text{ minutes}$$

109. (2) According to question,  
 $(6M + 8B) \times 10 = (26M + 48B) \times 2$   
 $\therefore 60M + 80B = 52M + 96B$   
or,  $1M = 2B$   
 $\therefore 15M + 20B = (30 + 20)B$   
 $= 50 \text{ boys and } 6M + 8B = (12 + 8) \text{ boys} = 20 \text{ boys}$   
20 boys can finish the work in 10 days

- $\therefore$  50 boys can finish the work  
in  $\frac{20 \times 10}{50}$  days  
 $= 4$  days
110. (2)  $\therefore$  A can finish the work  
in 18 days
- $\therefore$  A's one day's work  $= \frac{1}{18}$
- Similarly, B's one day's work  
 $= \frac{1}{24}$
- $\therefore$  (A + B)'s 8 days work  
 $= \left( \frac{1}{18} + \frac{1}{24} \right) \times 8 = \frac{7}{2} \times 8 = \frac{7}{9}$
- $\therefore$  Remining work  $= 1 - \frac{7}{9} = \frac{2}{9}$
- $\therefore$  Time taken to finish the  
remining work by B in  $\frac{2}{9} \times 24$
- $= \frac{16}{3} = 5\frac{1}{3}$  days
111. (3) Time taken to cover 20 km  
at the speed of 5 km/hr  
 $= 4$  hours.
- $\therefore$  Fixed time  $= 4$  hours  $- 40$   
minutes  
 $= 3$  hour 20 minutes
- Time taken to cover 20 km at  
the speed of 8 km/hr  $= \frac{20}{8} = 2$   
hours 30 minutes
- $\therefore$  Required time  $= 3$  hours  
20 minutes  $- 2$  hours 30 min-  
utes  $= 50$  minutes
112. (2) Total distance  $= 10 + 12$   
 $= 22$  km
- Total time  $= \frac{10}{12} + \frac{12}{10} = \frac{244}{120}$  hours
- $\therefore$  Required average speed  
 $= \frac{\text{Total distance}}{\text{Total time}} = \frac{22}{\frac{244}{120}} = \frac{22}{244} \times 120$   
 $= 10.8$  km/hr.
113. (3) Relative speed of man and  
train  $= 20 - 10 = 10$  m/sec.
- $\therefore$  Required time  $= \frac{180}{10}$   
 $= 18$  seconds
114. (3) Distance travelled by first  
train in one hour

- $= 60 \times 1 = 60$  km
- A  $\xleftarrow{330 \text{ km}}$  B
- Therefore, distance between  
two train at 9 a.m.  
 $= 330 - 60 = 270$  km
- Now, Relative speed of two  
trains  $= 60 + 75 = 135$  km/hr
- $\therefore$  Time of meet of two trains  
 $= \frac{270}{135} = \text{After } 2 \text{ hrs.}$
- Therefore, both the trains  
will meet at  $9 + 2 = 11$  A.M.
115. (3) Let the distance of desti-  
nation  $= D$  km
- Let the speed of A  $= 3x$  km/hr  
then speed of B  $= 4x$  km/hr
- $\therefore$  According to question,  
 $\frac{D}{3x} - \frac{D}{4x} = \frac{1}{2} \text{ hr} = 30 \text{ minutes}$
- $\therefore \frac{D}{12x} = \frac{1}{2} \text{ hr}$
- $\therefore \frac{D}{3x} = \frac{4}{2} = 2 \text{ hours}$
- $\therefore$  Time taken by A to reach  
destination  $= 2$  hr.
116. (2) Percentage of film-watch-  
ers in city II see more than  
one film  $= 100\% - 30\% = 70\%$
- $\therefore 70\% = 3500$
- $\therefore 30\% = \frac{3500}{70} \times 30 = 1500$
- $\therefore$  Number of film-watchers  
in city II see only one film a  
week  $= 1500$
117. (3) Number of film-watchers  
in city I see only one film a  
week  $= \frac{50}{(100-50)} \times 3200$   
 $= 3200$
- Number of film-watchers in  
city II see only one film a  
week  $= 1500$
- Number of film-watchers in  
city III see only one film a  
week  $= \frac{65}{100-65} \times 7000$   
 $= 13000$
- Number of film-watchers in  
city V see only one film a

- week  $= \frac{80}{100-20} \times 2900$   
 $= 11,600$
- Therefore, the number of  
film-watchers in city III see  
only one film a week is max-  
imum.
118. (2) Number of film-watchers  
in city I  
 $= \frac{100}{(100-50)} \times 3200 = 6400$
- Number of film-watchers in  
city II  
 $= \frac{100}{100-30} \times 3500 = 5000$
- Number of film-watchers in  
city IV  
 $= \frac{100}{100-25} \times 5400 = 7200$
- Number of film-watchers in  
city V  
 $= \frac{100}{100-80} \times 2900 = 14500$
- Therefore, the number of  
film-watchers in city II is  
minimum.
119. (4) Number of film-watchers  
in city I  $= 6400$
- Number of film-watchers in  
city V  $= 14500$
- Number of film-watchers in  
city IV  $= 7200$
- Number of film-watchers in  
city III
- $= \frac{100}{100-65} \times 7000 = 20,000$
- Therefore, number of film-  
watcher in city III is maxi-  
mum.
120. (1) Number of film-watcher in  
all city see only one film  
 $= 3200 + 1500 + 13000 + \frac{25}{100-25} \times 5400 + 1600$   
 $= 3200 + 1500 + 13000 + 1800$   
 $+ 11600 = 31100$
121. (2) Required percent increase  
 $= \frac{7500-5300}{5300} \times 100 = 41.5\%$
122. (1) Profit in year 1996-97  $=$   
Gross Traffic Receipt  $-$  Total  
expenditure  
 $= 8500 - 8000 = 500$

Therefore, profit percent of  
Gross Traffic Receipt

$$= \frac{500}{8500} \times 100 = 5.9\%$$

123. (4) Profit percent of Gross Traffic Receipt in year 1997-98

$$= \frac{9400 - 8800}{9400} \times 100 = 6.38\%$$

124. (3) Profit percent

$$= \frac{\text{Gross Traffic profit} - \text{Total expenditure}}{\text{Gross Traffic profit}} \times 100$$

∴ According to question,

$$10 = \left[ 1 - \frac{\text{Total expenditure}}{\text{Gross Traffic profit}} \right] \times 100$$

$$\therefore \frac{\text{Total Expenditure}}{\text{Gross Traffic profit}}$$

$$= 1 - \frac{10}{100} = 0.9$$

∴ According to question,  
Total expenditure = 5800

$$\therefore \text{Gross Traffic profit} = \frac{5800}{0.9}$$

= Rs. 6444 crore

125. (4) Required increase = Rs.  
(8800 - 5300) crore  
= Rs. 3700 crore

126. (1)

$$? = 1 + \frac{1}{1 + \frac{2}{2 + \frac{3}{1 + \frac{4}{5}}}}$$

$$= 1 + \frac{1}{1 + \frac{2}{2 + \frac{3}{5}}} = 1 + \frac{1}{1 + \frac{2}{2 + \frac{3}{5}}}$$

$$= 1 + \frac{1}{1 + \frac{2 \times 3}{6 + 5}} = 1 + \frac{1 \times 11}{11 + 6}$$

$$= 1 + \frac{11}{17} = 1 \frac{11}{17}$$

127. (3)  $\sqrt{13} + \sqrt{1300} + \sqrt{0.013}$

$$= \sqrt{\frac{130}{100}} + 10\sqrt{13} + \sqrt{\frac{130}{10000}}$$

$$= \frac{1}{10}\sqrt{130} + \frac{1}{10}\sqrt{13} + \frac{1}{100}\sqrt{130}$$

$$= \frac{1140}{10} + 3.605 \times 10 + \frac{1140}{100}$$

$$= 1.140 + 36.05 + 0.1140$$

$$= 37.304$$

$$128. (3) ? = \frac{(2.644)^2 - (2.356)^2}{0.288}$$

$$= \frac{(2.644 - 2.356)(2.644 + 2.356)}{0.288}$$

$$= \frac{0.288 \times 5}{0.288} = 5$$

$$129. (3) ? = \frac{9[3 - 5] - 5[4] \div 10}{-3(5) - 2 \times 4 \div 2}$$

$$= \frac{9 \times 2 - 5 \times 4 \div 10}{-15 - 8 \div 2}$$

$$= \frac{18 - 2}{-19} = \frac{-16}{19}$$

$$130. (3) (\sqrt{12} + \sqrt{18}) - (\sqrt{3} + \sqrt{2})$$

$$= (2\sqrt{3} - \sqrt{3}) + (3\sqrt{2} - \sqrt{2})$$

$$= \sqrt{3} + 2\sqrt{2}$$

$$131. (1) ? = \sqrt{5 + 2\sqrt{6}} - \frac{1}{\sqrt{5 + 2\sqrt{6}}}$$

$$= \frac{(\sqrt{5 + 2\sqrt{6}})^2 - 1}{\sqrt{5 + 2\sqrt{6}}} = \frac{5 + 2\sqrt{6} - 1}{\sqrt{5 + 2\sqrt{6}}}$$

$$= \frac{4 + 2\sqrt{6}}{\sqrt{5 + 2\sqrt{6}}} = 2\sqrt{2}$$

$$132. (2) (243)^{0.16} \times (243)^{0.04}$$

$$= (243)^{0.16 + 0.04}$$

$$= (243)^{0.2} = (243)^{1/5}$$

$$= (3^5)^{1/5} = 3$$

133. (1)

$$? = \frac{0.06 \times 0.06 \times 0.06 - 0.05 \times 0.05 \times 0.05}{0.06 \times 0.06 + 0.06 \times 0.05 + 0.05 \times 0.05}$$

We know that

$$\frac{a^3 - b^3}{a^2 + ab + b^2} = a - b$$

$$\therefore \text{Required answer} = 0.06 - 0.05 = 0.01$$

$$134. (1) ? = 1 + \frac{1}{2} + \frac{1}{4} + \frac{1}{7} + \frac{1}{14} + \frac{1}{28}$$

$$= \frac{28 + 14 + 7 + 4 + 2 + 1}{28}$$

$$= \frac{28 + 28}{28} = 2$$

$$135. (1) ? = 5 - [4 - \{3 - (3 - 3 - 6)\}]$$

$$= 5 - [4 - \{3 - (-6)\}]$$

$$= 5 - [4 - \{3 + 6\}]$$

$$= 5 - [4 - 9]$$

$$= 5 + 5 = 10$$

$$136. (2) ? = \sqrt{0.00000841} = 0.0029$$

$$137. (1) ? = \sqrt{2^4} + \sqrt[3]{64} + \sqrt[4]{2^8}$$

$$= 2^{4 \times \frac{1}{2}} + 4^{3 \times \frac{1}{3}} + 2^{8 \times \frac{1}{4}}$$

$$= 2^2 + 4 + 2^2$$

$$= 4 + 4 + 4 = 12$$

$$138. (1) a * b = 2a - 3b + ab$$

$$\Rightarrow 3 * 5 = 2 \times 3 - 3 \times 5 + 3 \times 5$$

$$= 6$$

$$5 * 3 = 2 \times 5 - 3 \times 3 + 3 \times 5$$

$$= 10 - 9 + 15 = 16$$

$$\text{Therefore, } 3 * 5 + 5 * 3$$

$$= 6 + 16 = 22$$

$$139. (1) \sqrt{0.09} = 0.3$$

$$140. (2) \left[ \sqrt[3]{\sqrt[6]{5^9}} \right]^4 \left[ \sqrt[6]{\sqrt[3]{5^9}} \right]^4$$

$$= \left[ 5^{9 \times \frac{1}{6} \times \frac{1}{3}} \right]^4 \left[ 5^{9 \times \frac{1}{6} \times \frac{1}{3}} \right]^4$$

$$= \left[ 5^{\frac{1}{2} \times 4} \right] \left[ 5^{\frac{1}{2} \times 4} \right] = 5^2 \times 5^2 = 5^4$$

$$141. (1) 27^{2x-1} = (243)^3$$

$$\therefore (3)^{3(2x-1)} = (3)^{5 \times 3}$$

$$\therefore 3(2x-1) = 5 \times 3$$

$$\text{or, } 2x - 1 = 5 \therefore x = 3$$

$$142. (2) \sqrt{\frac{0.49}{0.25}} + \sqrt{\frac{0.81}{0.36}}$$

$$= \frac{0.7}{0.5} + \frac{0.9}{0.6} = \frac{42 + 45}{30} = \frac{87}{30}$$

$$= \frac{29}{10} = 2 \frac{9}{10}$$

$$143. (1) \log 57 + \log (0.57)^3 + \log \sqrt{0.57}$$

$$= \log [(0.57) \times 100] + 3 \log 0.57$$

$$+ \frac{1}{2} \log 0.57$$

$$= \log 100 + \log (0.57) + 3 \log$$

$$(0.57) + \frac{1}{2} \log (0.57)$$



$$= 2 + \frac{9}{2} \log(0.57)$$

$$= 2 + \frac{9}{2} \times (1.756)$$

$$= 2 + \frac{9}{2} \times 0.756 - \frac{9}{2}$$

$$= 2 + 3.402 - 4.5 = 0.902$$

144. (4)  $\frac{7}{6} = 1.166$ ;  $\frac{7}{9} = 0.777$

$$\frac{4}{5} = 0.8 \text{ and } \frac{5}{7} = 0.714$$

Therefore, the smallest number is  $\frac{5}{7}$

145. (3) When  $9^6 - 1$  is divided by 8, the remainder is zero.

$\therefore 9^6 - 11$  is divided by 8, the remainder is  $1 + 1 = 2$

146. (3) Since the numbers between -10 and 10 will be single digit and the numbers below 100 will be either one digit or two digit. We know that the square root of one or two digit number is always single digit number. Therefore, required answer is option (3).

147. (3)  $\therefore 135 = \frac{1}{4}$

$$\therefore 180 = \frac{1}{4} \times \frac{180}{135} = \frac{1}{3}$$

148. (2) 91

149. (3) Required number

$$= \frac{864 \times 144}{288} = 432$$

150. (1)  $? = 369 \times \frac{1}{2} \times \frac{2}{3} = 123$

151. (2) Let required number be x

$\therefore$  According to question,

$$50x - 30x = 400$$

$$20x = 400$$

$$\therefore x = 20$$

152. (3) Let the numbers are x and y

$\therefore$  According to question,

$$x \times 0.6 = y \times 0.08$$

$$\therefore x : y = \frac{0.08}{0.6}$$

$$\therefore 2 : 15$$

153. (3) Let number be x

$\therefore$  According to question,

$$\frac{x}{5} - \frac{x}{7} = 10$$

$$\Rightarrow x = \frac{10 \times 35}{2} = 175$$

154. (2) Let amount be Rs. x

$\therefore$  According to question,

$$\frac{8}{3}x - \frac{3}{8}x = 55$$

or, x = Rs. 24

155. (3) According to question,

$$21 + 24 + 27 = 72$$

Therefore, largest number is 27.

156. (4) Since 7381 is completely divisible by 11.

$\therefore$  The value of 7.

157. (4)  $5808 = 2 \times 2 \times 2 \times 2 \times 3 \times 11 \times 11$

Therefore, when 5808 is multiplied by 3, then it will be perfect square number.

158. (3) L.C.M. of 4, 6, 8, 12 and 16 = 48

$\therefore$  Required number

$$= 48 + 2 = 50$$

159. (1)  $xy = 375$  and  $x + y = 40$

$$\therefore \text{Sum of reciprocals} = \frac{x+y}{xy}$$

$$= \frac{40}{375} = \frac{8}{75}$$

160. (4) From option,

The product of 6 and 4

$$= 24$$

and the difference =  $6 - 4 = 2$

161. (1) Let the total number of students in a class be x

$\therefore$  According to question,

$$\text{Number of girls} = \frac{3}{5}x$$

$$\text{and number of boys} = x - \frac{3x}{5}$$

$$= \frac{2}{5}x$$

Number of girls which are absent

$$= \frac{3}{5} \times \frac{2}{5}x = \frac{6x}{25}$$

and number of boys which are absent

$$= \frac{2}{5} \times \frac{1}{4} \times x = \frac{1}{10} \times x$$

$\therefore$  Total number of students which are present

$$= x - \frac{6x}{45} - \frac{x}{10}$$

$$= \frac{(90 - 12 - 9)x}{90}$$

$$= \frac{69x}{90} = \frac{23x}{30}$$

Therefore, the  $\frac{23}{30}$  part of the students are present in the class.

162. (3)  $x - y = 5$  and  $xy = 336$

$$\therefore x + y = \sqrt{(x-y)^2 + 4xy}$$

$$= \sqrt{5^2 + 4 \times 336}$$

$$= \sqrt{25 + 1344} = \sqrt{1369} = 37$$

163. (1) The H.C.F of 1001 and 910 = 91

164. (1) Unit digit in  $(264)^4$  i.e.

$$4 \times 4 \times 4 \times 4 \text{ is } 6$$

$\therefore$  Unit digit in  $(264)^{100}$  is also 6.

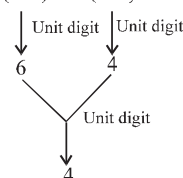
$$\text{Now, } (264)^{102} = (264)^{100} \times (264)^2$$

$$= (\text{Unit digit} = 6) \times (\text{Unit digit} = 6)$$

$\therefore$  Unit digit is 6

Similarly,

$$(264)^{103} + (264)^{100} \times (264)^3$$



Therefore, the unit digit in  $(264)^{102} + (264)^{103}$  is  $6 + 4 = 10$  i.e. 0.

165. (4) The smallest number is  $\sqrt[3]{2}$

$$166. (2) \text{ Saving} = 100\% - 66\frac{2}{3}\%$$

$$= 33\frac{1}{3}\% \therefore 33\frac{1}{3}\% = \text{Rs. } 1200$$

$$\therefore 100\% = \frac{1200}{100} \times 3 \times 100$$

$$= \text{Rs. } 3600$$

- $\therefore \text{Expenses} = 3600 - 1200$   
 $= \text{Rs. } 2400$   
**167. (3)** According to question,  

$$A \times \frac{80}{100} = B \times \frac{50}{100}$$

$$\therefore B = \frac{A \times 80}{50} = 1.6A$$

$$\therefore B = 160\% \text{ of } A$$

$$\therefore x = 160$$
- 168. (4)** According to question,  

$$y = \frac{100 \times 150}{80} \text{ of } x$$

$$= 125\% \text{ of } x$$
- 169. (1) By Alligation Rule**  

Men 10%	Women 8%
9%	
1%	1%

$$\therefore \text{Men} : \text{Women} = 1 : 1$$

$$\therefore \text{Number of men}$$

$$= \frac{1}{2} \times 8000 = 4000$$
- 170. (3)** Total candidates  
 $= 1000 + 800 = 1800$   
 The candidates which are passed  

$$= 1000 \times \frac{60}{100} + 800 \times \frac{50}{100}$$

$$= 600 + 400 = 1000$$
 The number of candidates which are failed  
 $= 1800 - 1000 = 800$   
 $\therefore \text{Required percent}$ 

$$= \frac{800}{1800} \times 100 = 44.4\%$$
- 171. (1)** Let  $B = 100$   
 $\therefore$  According to question,  
 A is 40% greater than B  
 $\therefore A = 140$   
 $\therefore B$  is 20% less than C  
 $\therefore 0.8C = 100$   
 $\therefore C = 125$   
 $\therefore A : C = 140 : 125$   
 $= 28 : 25$
- 172. (3) TRICK**  
 Required percentage decrease  

$$= \frac{\text{Increase}}{100 + \text{Increase}} \times 100$$

- $$= \frac{20}{100 + 20} \times 100$$
- $$= \frac{100}{6} = 16\frac{2}{3}$$
- 173. (2)** Percentage of boys  
 $= 100\% - 70\% = 30\%$   
 $\therefore$  According to question,  
 $30\% = 510$   

$$\therefore 100\% = \frac{510}{30} \times 100 = 1700$$
- 174. (2)** Successive discount of 36% and 4%  

$$= \left( 36 + 4 - \frac{36 \times 4}{100} \right) \%$$

$$= 38.56\%$$

$$\therefore \text{Difference} = 40 - 38.56$$

$$= 1.44\%$$
- 175. (2)** Required loss  

$$= \left( \frac{10 \times 10}{100} \right) \% = 1\%$$
- 176. (4)** 15% of Rs. 80  $= \frac{80 \times 15}{100}$   
 $= \text{Rs. } 12$   
 and 20% of 60  $= \frac{60 \times 20}{100}$   
 $= \text{Rs. } 12$   
 Therefore, 15% of 80 and 20% of 60 are same. Hence the cost price should be Rs. 80 and Rs. 60.
- 177. (2)** According to question,  
 2.5% commission  
 $= \text{Rs. } 12.50$   
 $\therefore \text{Price of cloth} = 100\%$   
 i.e.  $\frac{12.50}{2.5} \times 100 = \text{Rs. } 500$
- 178. (2)**  $2P = P \left\{ 1 + \frac{r}{100} \right\}^{1.5}$   

$$\therefore \left\{ 1 + \frac{r}{100} \right\}^{1.5} = 2$$

$$2^3 = 8 \text{ times}$$

$$\therefore \text{Required time} = 15 \times 3$$

$$= 45 \text{ years}$$
- 179. (3)** Let principal be Rs. P  
 $\therefore$  According to question,  

$$102 = P \left\{ \left( 1 + \frac{r}{100} \right)^t - 1 \right\}$$

- Where  $r = 4\%$  and  $t = 2 \text{ years}$   

$$\therefore P = \frac{102}{\left( \frac{26}{25} \right)^2 - 1} = \text{Rs. } 1250$$
- $\therefore$  Simple Interest at rate of 4% for 2 years  

$$= \frac{1250 \times 4 \times 2}{100} = \text{Rs. } 100$$

$$\therefore \text{Required answer is Rs. } 100$$
- 180. (1)** According to question,  
 Amount  $= \frac{7}{6} \times P$   

$$\therefore \text{Interest} = \frac{7P}{6} - P = \frac{1}{6}P$$

$$\therefore \frac{P}{6} = \frac{P \times 3 \times x}{100}$$
 (Let rate =  $x\%$ )  

$$\therefore x = \frac{100}{18} = 5\frac{5}{9}\%$$
- 181. (4)** According to question,  
 Interest of one year  
 $= \text{Rs. } 42$   
 Rate = 5% and Time = 1 year  

$$\therefore \text{Principal} = \frac{\text{Interest} \times 100}{\text{Rate} \times \text{Time}}$$

$$= \frac{42 \times 100}{5 \times 1} = \text{Rs. } 840$$
- 182. (4)** Cost price of 7 oranges  
 $= \text{Rs. } \frac{3}{7}$   
 $\therefore$  Cost price of 100 oranges  

$$= \frac{3}{7} \times 100 = \text{Rs. } \frac{300}{7}$$

$$\therefore 100\% = \text{Rs. } \frac{300}{7}$$

$$\therefore 133\% = \frac{300}{7} \times \frac{133}{100}$$

$$= \text{Rs. } 57$$
- 183. (1)** Required profit  

$$= \frac{36 - 30}{30} \times 100 = 20\%$$
- 184. (1)** According to question,  
 $80\% \Rightarrow 480$   

$$\therefore 120\% = \frac{480 \times 120}{80}$$

= Rs. 720  
Therefore, for 20% profit  
the S.P of article be Rs. 720

185. (2) Required loss

$$= \frac{10 \times 10}{100} = 1\%$$

186. (2) Selling price =  $405 \times 110\%$   
= Rs. 445.50

Remaining apple =  $10 - 1$   
= 9 kg

Therefore, the remaining ap-  
ples per kg cost

$$= \frac{445.50}{9} = \text{Rs. } 49.50$$

187. (1)  $a : c = (a : b) \times (b : c)$

$$= \frac{7}{9} \times \frac{15}{7} = \frac{15}{9} = 5 : 3$$

188. (4) Original ratio of A, B and C

$$= \frac{1}{2} : \frac{1}{3} : \frac{1}{4} = 6 : 4 : 3$$

∴ Share of A

$$= \frac{6}{13} \times 117 = \text{Rs. } 54$$

Share of B

$$= \frac{4}{13} \times 117 = \text{Rs. } 36$$

and share of C

$$= \frac{3}{13} \times 117 = \text{Rs. } 27$$

The ratio of A, B and C by  
mistake =  $2 : 3 : 4$

$$\therefore \text{Share of A} = \frac{2}{9} \times 117$$

= Rs. 26

$$\text{Share of B} = \frac{3}{9} \times 117$$

= Rs. 39

$$\text{Share of C} = \frac{4}{9} \times 117$$

= Rs. 52

Therefore, it is clear from  
above calculation that C gains  
maximum i.e. Rs. 25.

189. (3) According to question,

$$\frac{x}{y} = \frac{2}{1} \dots\dots(i)$$

$$\text{and } \frac{x-2}{y+2} = \frac{1}{1} \dots\dots(ii)$$

$$\begin{bmatrix} A & B \\ x & y \\ x-2 & y+2 \end{bmatrix}$$

After solving equation (i) and  
(ii), we get  $x = \text{Rs. } 8$  and  
 $y = \text{Rs. } 4$

190. (1) Rs. 4,025 and Rs. 575

191. (4) Let the longer part be  $x$   
∴ According to question,

$$\text{shortest part} = \frac{2x}{3}$$

$$\text{and } x + \frac{2}{3}x = 85\text{m}$$

$$\Rightarrow \frac{5x}{3} = 85$$

$$\therefore x = 51$$

192. (2) Mean

$$= \frac{3+11+9+7+15+13+8+19+17+21+14+x}{12}$$

According to question,

$$= \frac{137+x}{12} = 12$$

$$\therefore 137+x = 144$$

$$\therefore x = 144 - 137 = 7$$

193. (1) Let average production of  
a company in 9 months be  
 $x$  items

∴ According to question,

$$4375 = \frac{3 \times 4000 + 9 \times x}{12}$$

$$\text{or, } 4375 \times 12 = 12 \times 1000 + 9 \times x$$

$$\therefore 9 \times x = 12 (4375 - 1000)$$

$$= 12 \times 3375$$

$$\therefore x = \frac{12 \times 3375}{9} = 4500$$

194. (4) Total sum of five numbers

$$= 27 \times 5 = 135$$

Total sum of four numbers

$$= 25 \times 4 = 100$$

∴ Required number

$$= 135 - 100 = 35$$

195. (3) Sum of total number of 8  
students in exam

$$= 8 \times 51 = 408$$

Sum of total number of 9 stu-  
dents in exam

$$= 9 \times 68 = 712$$

∴ Required average

$$= \frac{408+712}{17} = \frac{1020}{17} \approx 60$$

196. (2) Sides of square

$$= \frac{\text{Diagonal}}{\sqrt{2}}$$

$$\therefore \text{Area} = \frac{(\text{Diagonal})^2}{2}$$

$$= \frac{(5.2)^2}{2} = \frac{27.04}{2} = 13.52\text{cm}^2$$

197. (1) Diagonal of cube =  $\sqrt{3}a$

∴ According to question,

$$\sqrt{12} = \sqrt{3a^2}$$

$$3a^2 \Rightarrow (12)^2$$

$$\text{or, } 3a^2 = \sqrt{12} \text{ cm}$$

$$3a^2 \Rightarrow 144$$

$$a = 2\text{cm}$$

$$a^2 \Rightarrow 48$$

$$\therefore \text{Volume} = a^3 = 2^3 = 8\text{cm}$$

198. (2) Let length be  $3x$  and  
breadth be  $2x$

∴ Perimeter =  $2 (\text{length} +$   
breadth)

$$= 2(3x + 2x) = 10x$$

∴ According to question,

$$10x = 80\text{m}$$

$$\therefore x = 8\text{m}$$

$$\therefore \text{Breadth} = 2x = 2 \times 8$$

$$= 16\text{ m}$$

199. (3) The distance travelled by  
wheel in one revolution

$$= 2\pi r = 2 \times \frac{22}{7} \times 1.75\text{m}$$

$$= 11\text{m}$$

Therefore, the number of rev-  
olution to cover 11 km i.e.  
1100 m by wheel

$$= \frac{1100}{11} = 1000$$

200. (4) Let the radius of first  
sphere =  $r$  cm  
and the radius of second  
sphere =  $(r + 2)$  cm

∴ Difference between surface  
area

$$\Rightarrow 4\pi \{(r + 2)^2 - r^2\} = 352$$

or,

$$4 \times \frac{22}{7} \{(r + 2 - r) + (r + 2 + r)\} = 352$$

$$\therefore 2 \times 2(r + 1) = \frac{352 \times 7}{4 \times 22}$$

$$\therefore r + 1 = \frac{352 \times 7}{4 \times 4 \times 22}$$

$$\therefore r + 1 = 7$$

$$\therefore r = 7 - 1 = 6\text{ cm}$$

$$a = 4\sqrt{3}$$

$$\sqrt{3}a = 12$$

$$3a^2 = 12^2$$

$$3a^2 = 144$$

$$a^2 \Rightarrow 48$$



**PART-(A) (I) :**

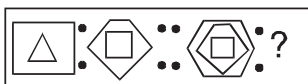
**GENERAL INTELLIGENCE**

Directions (1-6) : Find the related word/letters/number to complete the Analogy.

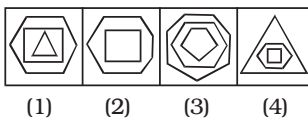
- Carbon : Diamond :: Corundum : ?  
(1) Garnet (2) Ruby  
(3) Pukhraj (4) Pearl
- Smoke : Pollution :: War : ?  
(1) Victory (2) Peace  
(3) Treaty (4) Destruction
- Ink : Pen :: Blood : ?  
(1) Accident (2) Doctor  
(3) Vein (4) Donation
- BOQD : ERTG :: ANPC : ?  
(1) DQSF (2) FSHU  
(3) SHFU (4) DSQF
- AFKP : ZUPK :: BGLQ : ?  
(1) YUQM (2) XURO  
(3) YXWV (4) YTOJ
- 182 : ? :: 210 : 380  
(1) 342 (2) 272  
(3) 240 (4) 156

Directions (7-11) : Select the related figure from the Answer Figures.

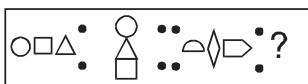
**7. Question Figures**



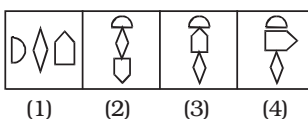
**Answer Figures**



**8. Question Figures**



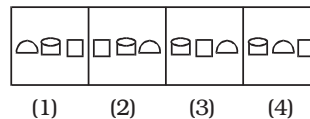
**Answer Figures**



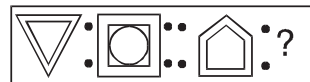
**9. Question Figures**



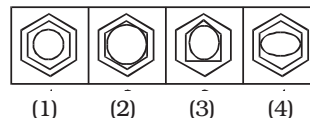
**Answer Figures**



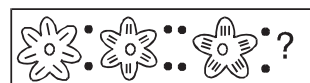
**10. Question Figures**



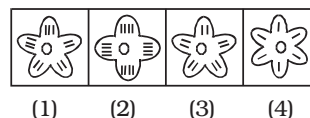
**Answer Figures**



**11. Question Figures**



**Answer Figures**



Directions (12-16) : Find the odd one out from the given alternatives.

- (1) Mizoram (2) Sikkim  
(3) Kohima (4) Manipur
- (1) Amoeba (2) Bacteria  
(3) Germs (4) Microbes
- (1) IJCD (2) WYTS  
(3) QRKL (4) PQMN
- (1) 8 (2) 42  
(3) 49 (4) 35
- (1) 81 : 243 (2) 16 : 64  
(3) 64 : 192 (4) 25 : 75

Directions : Which one of the given responses would be a meaningful order of the following?

1. Book 2. Pulp  
3. Timber 4. Jungle

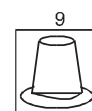
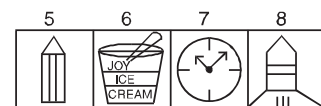
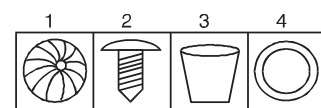
- (1) 3, 2, 5, 1, 4  
(2) 2, 5, 1, 4, 3  
(3) 4, 3, 2, 5, 1  
(4) 5, 4, 3, 1, 2

Directions : Arrange the following words according to dictionary arrangement.

1. Epitaxy 2. Episode  
3. Epigene 4. Epitome  
5. Epilogue
- (1) 1, 2, 3, 4, 5  
(2) 3, 5, 2, 1, 4  
(3) 5, 4, 2, 1, 3  
(4) 3, 2, 5, 4, 1

Directions (19-21) : A series of figures are given which can be grouped into classes. Select the groups into which the figures can be classified.

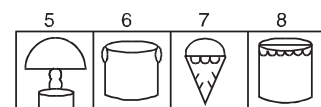
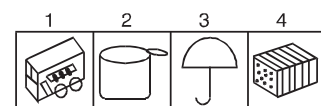
**19.**



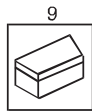
1, 4, 7	1, 3, 6	1, 2, 4	1, 4, 9
2, 5, 8	2, 5, 8	3, 5, 8	2, 5, 8
3, 6, 9	4, 7, 9	6, 7, 9	3, 6, 7

(1) (2) (3) (4)

**20.**



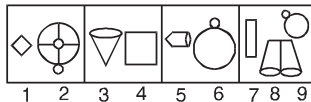
(1) (2) (3) (4)



1, 4, 9	1, 4, 5	1, 4, 6	1, 3, 6
2, 6, 8	3, 6, 8	2, 7, 8	2, 4, 7
3, 5, 7	2, 7, 9	3, 5, 9	5, 8, 9

(1) (2) (3) (4)

21.



1, 2, 4	9, 7, 6	2, 3, 4	1, 4, 7
3, 5, 6	5, 3, 1	7, 6, 5	2, 6, 9
8, 7, 9	4, 8, 2	9, 8, 1	3, 5, 8

(1) (2) (3) (4)

**Directions :** Which one set of letters when sequentially placed at the gaps in the given letter series shall complete it?

22. — stt — tt — tts —

(1) tsst (2) sstt  
(3) ttst (4) tsts

23. Number of letters skipped in between adjacent letters goes on increasing successively by one in the series. Identify the set following the above rule.

(1) AEIMQU (2) EHKNQT  
(3) DINSXC (4) FHKOTZ

**Directions (24-25) :** Find the missing number from the given responses.

24.  $\frac{2}{3}, \frac{4}{7}, \dots, \frac{11}{21}, \frac{16}{31}$

(1)  $\frac{6}{11}$  (2)  $\frac{5}{9}$

(3)  $\frac{9}{17}$  (4)  $\frac{7}{13}$

25. 25, 50, 30, 45, 35, 40, ?

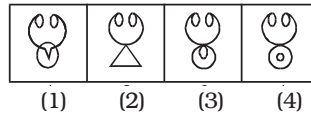
(1) 30 (2) 35  
(3) 40 (4) 45

**Directions (26-27) :** Find the missing figure in the series from the given answer figures.

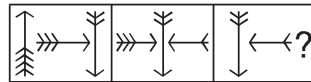
26. Question Figures



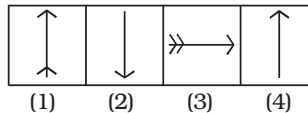
Answer Figures



27. Question Figures

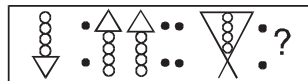


Answer Figures

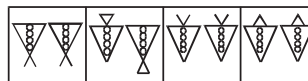


**Directions :** Select the related figures from the answer figures.

28. Question Figures



Answer Figures



(1) (2) (3) (4)

29. If '+' stands for division, '÷' stands for multiplication, 'x' stands for subtraction and '-' stands for addition, which one of the following is correct?

(1)  $18 \div 6 - 7 + 5 \times 2 = 20$   
(2)  $18 + 6 \div 7 \times 5 - 2 = 18$   
(3)  $18 \times 6 + 7 \div 5 - 2 = 16$   
(4)  $18 \div 6 \times 7 + 5 - 2 = 22$

30. If '-' stands for division, '+' for multiplication, '÷' for subtraction and 'x' for addition, which one of the following equations is correct?

(1)  $18 \div 3 \times 2 + 8 - 6 = 10$   
(2)  $18 - 3 + 2 \times 8 \div 6 = 14$   
(3)  $18 - 3 \div 2 \times 8 + 6 = 17$   
(4)  $18 \times 3 + 2 \div 8 - 6 = 15$

31. If  $324 \times 150 = 54$ ,  $251 \times 402 = 48$  and  $523 \times 246 = 120$  then  $651 \times 345 = ?$

(1) 120 (2) 85  
(3) 144 (4) 60

32. Some equations are solved on the basis of certain system. Find out the correct answer for the unsolved equation on that basis.

If  $12 \times 7 = 408$  and  $9 \times 8 = 207$  then  $13 \times 7 = ?$

(1) 190 (2) 91  
(3) 901 (4) 109

33. If NOIDA is written as STNIF, how MEERUT can be written in that code?

(1) QIIVYX (2) RJJWZV  
(3) RJJWZY (4) RIIVYX

34. In a certain code FORGET is written as DPPHCU, how would DOCTOR be written in that code?

(1) BPAUMS (2) BPAUPS  
(3) EMDRPP (4) BPARPP

35. In a certain code DECEMBER is written as ERMBCEDE, in that code which word will be written as ERM-BVENO ?

(1) SEPTEMBER  
(2) AUGUST  
(3) NOVEMBER  
(4) OCTOBER

36. If RED is coded as 6720, then how GREEN would be coded?

(1) 9207716 (2) 1677199  
(3) 1677209 (4) 16717209

37. If 9th of the month falls on the day preceding Sunday, on what day will 1st of the month fall?

(1) Friday (2) Saturday  
(3) Sunday (4) Monday

38. Average marks obtained by 9 students in one row of a class is 45. One student with 35 marks exchanges his seat with a student securing 48 marks. What is the average marks of these 9 students of this row?

(1) 56.4 (2) 46.4  
(3) 47.6 (4) 45.6

39. Kamu walks 5 kms straight from her house towards west then turns right and walks 3 kms. There-after she takes left turn and walks 2 km. Further, she turns left and walks 3 km. Finally, she turns right and walks 3 kms. In what direction she is now from her house?

(1) West (2) North  
(3) South (4) East



**Directions :** In the following question a statement is followed by four inferences. Select the one which is most appropriate.

40. **Statement :** In the university examination most of the candidates write in Hindi medium.

**Inferences :**

- (1) All the candidates who appear in this examination write answers in Hindi.
- (2) In this examination no candidate writes answers other than in Hindi.
- (3) Mostly candidates with Hindi medium appear in this examination.
- (4) Some candidates of this examination write in Hindi.

**Directions (41-42) :** In the following questions a word is followed by 4 other words, one of which cannot be formed by using the letters of the given word. Find this word.

41. **PROSPECTIVE**

- (1) PEPTIC (2) PEPPER
- (3) VECTOR (4) RESET

42. **APPROXIMATELY**

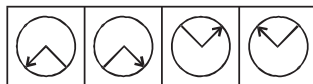
- (1) APEX
- (2) APPRISE
- (3) APPROXIMATE
- (4) APRIL

**Directions :** Which of the answer figures is exactly the mirror image of the given figure when the mirror is held at PQ?

43. **Question Figure**



**Answer Figures**



- (1) (2) (3) (4)

44. Amit travelled 15 kms. eastward, then turned left and travelled 5 kms, then turned left and travelled 15 kms. How far was Amit from the starting point?

- (1) 30 kms. (2) 35 kms.
- (3) 15 kms. (4) 5 kms.

45. At 12.30 the hour hand of a clock faces North and the minute hand faces South. At 2.45 the minute hand will be in which direction?

- (1) North-West
- (2) West
- (3) South-East
- (4) East

**Directions (46-47) :** Find the missing number from the given responses.

46.

20160	4
?	4
480	8
96	24

- (1) 860 (2) 1140
- (3) 2880 (4) 3240

47.

3	6	2
5	12	4
2	18	2
	3	9

- (1) 15 (2) 18
- (3) 17 (4) 16

48. The trend results are shown at the end of each column. Find out the figure against the missing number.

9	8	7
6	7	8
5	4	?
270	224	336

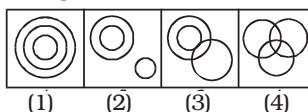
- (1) 9 (2) 6
- (3) 7 (4) 5

49. In the question given below the numbers given at the top follow a certain specific pattern. Study out the pattern and find out the missing number.

9	4	20
8	5	12
7	6	?

- (1) 2 (2) 4
- (3) 6 (4) 9

50. Which figure represents Rhombus, Quadrilaterals, Polygons?



- (1) (2) (3) (4)

**PART-(A) (II) :**

**GENERAL AWARENESS**

51. The Landmines Treaty became a global law in September 1998 with the approval of :

- (1) Norway
- (2) Burkina Faso
- (3) Thailand
- (4) Ethiopia

52. Leander Paes and Mahesh Bhupathi won two doubles Grand Slams in 1999. Which were they?

- (1) Australian Open and French Open
- (2) French Open and Wimbledon
- (3) Wimbledon and Australian Open
- (4) U.S. Open and French Open

53. Who created a world record for the maximum number of dismissals in Test Cricket as a Wicket Keeper?

- (1) Alan Knott
- (2) Rodney Marsh
- (3) Ian Healy
- (4) Moin Khan

54. Who invented optical fibre?

- (1) Samuel Cohen
- (2) Narinder Kapany
- (3) Percy L. Spencer
- (4) T.H. Maimah

55. Who amongst the following is renowned in the field of painting?

- (1) Parveen Sultana
- (2) Prof. T.N. Krishnan
- (3) Ram Kinkar
- (4) Raja Ravi Varma

56. Who amongst the following won the Nobel Prize in Science in two different disciplines?

- (1) Russell Hulse
- (2) David Lee
- (3) Madam Curie
- (4) Paul Boyer

57. Who is the author of "The Company of Women"?

- (1) John Gray
- (2) David Baldacci
- (3) Dick Francis
- (4) Khushwant Singh

58. In the 13th Lok Sabha elections in which of the following states did the ruling alliance won all the seats?  
 (1) Andhra Pradesh  
 (2) Orissa  
 (3) Haryana  
 (4) Gujarat
59. Who represented India in the Second Round Table Conference?  
 (1) Aruna Asaf Ali  
 (2) Sucheta Kripalani  
 (3) Sarojini Naidu  
 (4) Kalpana Joshi
60. The rulers of which dynasty started the practice of granting tax-free villages to Brahmanas and Buddhist Monks?  
 (1) Satavahanas  
 (2) Mauryas  
 (3) Guptas  
 (4) Cholas
61. The Bandung Conference was a major milestone in the history of :  
 (1) The Non-aligned movement  
 (2) Indo-Chinese relationship  
 (3) U.S.-Vietnam War  
 (4) Creation of ASEAN
62. The most important text of vedic mathematics is :  
 (1) Satapatha Brahman  
 (2) Atharva Veda  
 (3) Sulva Sutras  
 (4) Chhandogya Upanishad
63. Which of the following Indian States is broadly as large as the European nation-Austria?  
 (1) Kerala  
 (2) West Bengal  
 (3) Orissa  
 (4) Karnataka
64. Which of the following districts is on the international border of India?  
 (1) Sirsa  
 (2) Anantnag  
 (3) Karimganj  
 (4) Purulia
65. The deposits of the ancient Tethys Sea were folded to form the :  
 (1) Himalayas  
 (2) Rockies  
 (3) Andes  
 (4) Alps
66. The largest irrigation canal in India is called the :  
 (1) Yamuna canal  
 (2) Sirhand canal  
 (3) Indira Gandhi canal  
 (4) Upper Bari Doab canal
67. Atmospheric pressure exerted on earth is due to :  
 (1) rotation of earth  
 (2) revolution of earth  
 (3) gravitational pull  
 (4) uneven heating of earth
68. Pruning is an essential part in cultivation of :  
 (1) Rubber (2) Tobacco  
 (3) Coffee (4) Tea
69. Operating surplus arises in the  
 (1) Government sector  
 (2) Production for self-consumption  
 (3) Subsistence farming  
 (4) Enterprise sector
70. The most important of the non-tariff trade barriers are :  
 (1) Quotas  
 (2) Health regulations  
 (3) Pollution standards  
 (4) Labelling and packaging regulations
71. The maximum area under crops in India is used for the cultivation of :  
 (1) Wheat (2) Rice  
 (3) Sugarcane (4) Cotton
72. Investment is equal to :  
 (1) gross total of all types of physical capital assets  
 (2) gross total of all capital assets minus wear and tear  
 (3) stock of plants, machines and equipments  
 (4) None of the above
73. The Tarapore Committee recommended that before capital account was made convertible the rate of inflation should be brought down for three years to within :  
 (1) 3.5% (2) 0.3%  
 (3) 4.6% (4) 5.7%
74. Who among the following are not appointed by the President of India?  
 (1) Governors of States  
 (2) Chief Justice and Judges of High Court  
 (3) Vice-President  
 (4) Chief Justice and Judges of Supreme Court
75. What is the period within which a proclamation of national emergency made by the President is to be placed before each house of the Parliament for approval?  
 (1) within one month  
 (2) within two months  
 (3) within four months  
 (4) within six months
76. What was the exact constitutional position of the Indian Republic when the Constitution was brought into force with effect from 26th January, 1950?  
 (1) A Democratic Republic  
 (2) A Sovereign Democratic Republic  
 (3) A Sovereign Secular Democratic Republic  
 (4) A Sovereign Secular Socialist Democratic Republic
77. Fabianism is closely related to:  
 (1) Fascism  
 (2) Scientific socialism  
 (3) Democratic socialism  
 (4) Liberalism
78. A federal structure for India was first put forward by the :  
 (1) Act of 1909  
 (2) Act of 1919  
 (3) Act of 1935  
 (4) Act of 1947
79. Which Writ is issued by a High Court or the Supreme Court to compel an authority to perform a function that it was not performing?  
 (1) Writ of Certiorari  
 (2) Writ of Habeas Corpus  
 (3) Writ of Mandamus  
 (4) Writ of Quo Warranto
80. In case of a disagreement between the two Houses of Parliament over a non-money bill :

- (1) the bill will lapse  
(2) the President may sign it into a law  
(3) the President may call a joint sitting of both the Houses to consider it.  
(4) the President may ask both the Houses to reconsider it.
81. Commercial nitric acid is coloured because it contains dissolved :  
(1) Oxygen  
(2) Nitrous oxide  
(3) Nitrogen dioxide  
(4) Coloured impurities
82. Fertiliser having high nitrogen content is :  
(1) Urea  
(2) Ammonium sulphate  
(3) Ammonium nitrate  
(4) Calcium citrate
83. Quantity of fresh air required for a man is  
(1) 1000 cubic feet of air for every 20 minutes  
(2) 1000 cubic feet of air for every 20 seconds  
(3) 1000 cubic feet of air for every 10 minutes  
(4) 1000 cubic feet of air for every 10 seconds
84. A compact disc (CD) is a data storage system of the type :  
(1) Magnetic  
(2) Optical  
(3) Electrical  
(4) Electromechanical
85. Surface tension in a liquid is due to :  
(1) Adhesive force between molecules  
(2) Cohesive force between molecules  
(3) Gravitational force between molecules  
(4) Electrical force between molecules.
86. A circular plate, a cube and a sphere, all made up of same material and having the same mass, are heated to  $300^{\circ}\text{C}$  and left in a room. Which of them will have the slowest rate of cooling?  
(1) Circular plate  
(2) Cube  
(3) Sphere  
(4) All will cool at the same rate
87. Where does the oxygen that keeps us alive come from?  
(1) Carbon dioxide  
(2) Carbonates absorbed from soil  
(3) Oxides of minerals  
(4) Water
88. Reserpine is used to :  
(1) reduce high blood pressure  
(2) increase blood pressure when it is low  
(3) alleviate pain  
(4) cure arthritis
89. 'ELISA' test is employed to diagnose :  
(1) Polio virus  
(2) AIDS antibodies  
(3) Tuberculosis bacterium  
(4) Cancer
90. Why excessive heating and repeated use of cooking oil is most undesirable?  
(1) The oil vapours can cause indoor pollution  
(2) Carcinogenic substances like benzpyrene are produced  
(3) Nutrient value of food is lost  
(4) Loss and wastage of oil
91. The gas used for artificial fruit ripening of green fruit is —  
(1) Ethylene (2) Acetylene  
(3) Ethane (4) Methane
92. Optic fibres are used in :  
(1) CAT scans  
(2) X-ray photos  
(3) Ultrasound scans  
(4) Endoscopy
93. The three elements most needed in common fertilisers are :  
(1) Sulphur, Phosphorous and Sodium  
(2) Nitrogen, Potassium and Phosphorous  
(3) Phosphorous, Sodium and Nitrogen  
(4) Calcium, Phosphorous and Potassium
94. What was the ultimate goal of Mahatma Gandhi's Salt Satyagraha?  
(1) repeal of Salt Satyagraha  
(2) curtailment of the Government's power  
(3) economic relief to the common people  
(4) 'Purna Swaraj' for India
95. Who persuaded the ratings of the RIN (Royal India Navy) to surrender on the 23rd February 1946?  
(1) Mahatma Gandhi  
(2) Jawaharlal Nehru and Maulana Abul Kalam Azad  
(3) Vallabh Bhai Patel and M.A. Jinnah  
(4) Morarji Desai and J.B. Kripalani
96. On September 20, 1932 Mahatma Gandhi began a fast unto death in Yervada Jail against :  
(1) British repression of the Satyagrahis.  
(2) Violation of the Gandhi-Irwin Pact.  
(3) Communal award of Ramsay MacDonald.  
(4) Communal riots in Calcutta.
97. In 1939, for the first time, Gandhiji tried out his specific techniques of controlled mass struggle in a native state. He allowed a close associate of his to lead a satyagraha. Who was he?  
(1) K. T. Bhashyam in Mysore  
(2) Jamnalal Bajaj in Jaipur  
(3) Vallabh Bhai Patel in Rajkot  
(4) Nebakrushna Chaudhri in Dhenkanal
98. What is Obra known for?  
(1) a new refinery  
(2) a new aluminium plant  
(3) a bird sanctuary  
(4) a thermal power station
99. What is NABARD's primary role?  
(1) to provide term loans to state co-operative banks

- (2) to assist state governments for share capital contribution  
 (3) to act as re-finance institution  
 (4) All of the above
100. Where is the National Institute of Excellence in the field of Information Technology and Allied Sciences proposed to be set up?  
 (1) Bangalore  
 (2) Hyderabad  
 (3) Pune  
 (4) Allahabad

**PART-(B) :**  
**ARITHMETIC**

101.  $(36)^{\frac{1}{6}}$  is equal to :  
 (1) 1 (2) 6  
 (3)  $\sqrt{6}$  (4)  $\sqrt[3]{6}$
102. A common factor of  $(13^7 + 11^7)$  and  $(13^5 + 11^5)$  is :  
 (1) 24 (2)  $13^5 + 11^5$   
 (3)  $13^2 + 11^2$  (4) None of the above
103. If  $\log_{10} 2 = 0.3010$  is given, then  $\log_2 10$  is equal to :  
 (1) 0.3010 (2) 0.6990  
 (3)  $\frac{1000}{301}$  (4)  $\frac{699}{301}$
104. The value of  $\frac{(0.03)^2 - (0.01)^2}{0.03 - 0.01}$  is :  
 (1) 0.02 (2) 0.004  
 (3) 0.4 (4) 0.04
105. The next number of the sequence 3, 5, 9, 17, 33 ..... is :  
 (1) 65 (2) 60  
 (3) 50 (4) 49
106.  $(64)^{\frac{1}{3}} \times \left(\frac{1}{4}\right)^{-2}$  is equal to :  
 (1) 1 (2) 2  
 (3)  $\frac{1}{2}$  (4)  $\frac{1}{16}$
107. The H.C.F of two numbers is 8. Which one of the following can never be their L.C.M.?  
 (1) 24 (2) 48  
 (3) 56 (4) 60

108. If the sum of two numbers is 22 and the sum of their squares is 404, then the product of the numbers is :  
 (1) 40 (2) 44  
 (3) 80 (4) 88

109.  $\frac{1}{0.04}$  is equal to :

(1)  $\frac{1}{40}$  (2)  $\frac{2}{5}$

(3)  $\frac{5}{2}$  (4) 25

110. If  $1 \times 2 \times 3 \times \dots \times n$  is denoted by  $\lfloor n$ , then

$(\lfloor 8 - \lfloor 7 - \lfloor 6 \rfloor \rfloor)$  is equal to :

(1)  $6 \times 8 \times \lfloor 6$

(2)  $7 \times 8 \times \lfloor 6$

(3)  $6 \times 7 \times \lfloor 8$

(4)  $7 \times 8 \times \lfloor 7$

111. The sum of first 20 odd natural numbers is equal to :  
 (1) 210 (2) 300  
 (3) 400 (4) 420

112.  $\left(\frac{8}{125}\right)^{-\frac{4}{3}}$  simplifies to :

(1)  $\frac{625}{16}$  (2)  $\frac{625}{8}$

(3)  $\frac{625}{32}$  (4)  $\frac{16}{625}$

113.  $(6.5 \times 6.5 - 45.5 + 3.5 \times 3.5)$  is equal to :  
 (1) 10 (2) 9  
 (3) 7 (4) 6

114. What number should be subtracted from both terms of the ratio 15 : 19 in order to make it 3 : 4 ?  
 (1) 9 (2) 6  
 (3) 5 (4) 3

115. If  $p : q = r : s = t : u = 2 : 3$ , then  $(mp + nr + ot) : (mq + ns + ou)$  is equal to :  
 (1) 1 : 3 (2) 1 : 2  
 (3) 2 : 3 (4) 3 : 2

116. If  $a : b = c : d = e : f = 1 : 2$ , then  $(pa + qc + re) : (pb + qd + rf)$  is equal to :

(1)  $p : (q + r)$

(2)  $(p + q) : r$

(3) 2 : 3

(4) 1 : 2

117. If  $x : y = 3 : 1$ , then  $x^3 - y^3 : x^3 + y^3 = ?$

(1) 13 : 14 (2) 14 : 13

(3) 10 : 11 (4) 11 : 10

118. If 10% of  $m$  is the same as 20% of  $n$ , then  $m : n$  is equal to :

(1) 2 : 1 (2) 1 : 2

(3) 1 : 10 (4) 1 : 20

119. How many sides does a regular polygon have whose interior and exterior angles are in the ratio 2 : 1?

(1) 3 (2) 5

(3) 6 (4) 12

120. The area (in sq. cm.) of the largest circle that can be drawn inside a square of side 28 cm, is :

(1) 17248 (2) 784

(3) 8624 (4) 616

121. The circumference of the base of a circular cylinder is  $6\pi$  cm. The height of the cylinder is equal to the diameter of the base. How many litres of water can it hold?

(1)  $54\pi$  cc

(2)  $36\pi$  cc

(3)  $0.054\pi$  cc

(4)  $0.54\pi$  cc

122. If the circumference of a circle increases from  $4\pi$  to  $8\pi$ , what change occurs in its area?

(1) It doubles.

(2) It triples

(3) It quadruples

(4) It is halved

123. A starts business with Rs. 3500/- and after 5 months, B joins with A as his partner. After a year, the profit is divided in the ratio 2 : 3. What is B's contribution in the capital?

(1) Rs. 8000/-

(2) Rs. 8500/-

(3) Rs. 9000/-

(4) Rs. 7500/-

124. A, B and C rent a pasture. A puts in 10 oxen for 7 months, B 12 oxen for 5 months and C 15 oxen for 3 months for grazing. If the rent of the pasture is Rs. 175/-, how much must C pay as his share of rent?

- (1) Rs. 45/- (2) Rs. 50/-  
(3) Rs. 55/- (4) Rs. 60/-

125. A reduction of 20% in the price of oranges enables a man to buy 5 oranges more for Rs. 10/-. The price of an orange before reduction was:

- (1) 20 paise (2) 40 paise  
(3) 50 paise (4) 60 paise

126. In an examination, a student who gets 20% of the maximum marks fails by 5 marks. Another student who scores 30% of the maximum marks gets 20 marks more than the pass marks. The necessary percentage required for passing is :

- (1) 32% (2) 23%  
(3) 22% (4) 20%

127. When 60 is subtracted from 60% of a number, the result is 60. The number is :

- (1) 120 (2) 150  
(3) 180 (4) 200

128.

$\left( \frac{1+\sqrt{2}}{\sqrt{5}+\sqrt{3}} + \frac{1-\sqrt{2}}{\sqrt{5}-\sqrt{3}} \right)$  simplifies to:

- (1)  $\sqrt{5} + \sqrt{6}$  (2)  $2\sqrt{5} + \sqrt{6}$   
(3)  $\sqrt{5} - \sqrt{6}$  (4)  $2\sqrt{5} - 3\sqrt{6}$

129.  $(\sqrt{72} - \sqrt{18}) \div \sqrt{12}$  is equal to:

- (1)  $\sqrt{6}$  (2)  $\sqrt{3}/2$   
(3)  $\sqrt{2}/3$  (4)  $\sqrt{6}/2$

130. The next term of the sequence  $\frac{1}{2}, 3\frac{1}{4}, 6, 8\frac{3}{4}, \dots$  is :

- (1)  $10\frac{1}{4}$  (2)  $10\frac{3}{4}$   
(3)  $11\frac{1}{4}$  (4)  $11\frac{1}{2}$

131. If  $x = 7 - 4\sqrt{3}$ , then the value of  $\left( x + \frac{1}{x} \right)$  is :

- (1)  $3\sqrt{3}$  (2)  $8\sqrt{3}$

- (3)  $14 + 8\sqrt{3}$  (4) 14

132. If  $17^{200}$  is divided by 18, the remainder is :

- (1) 17 (2) 16  
(3) 1 (4) 2

133. On simplification  $3034 - (1002 \div 20.04)$  is equal to

- (1) 3029 (2) 2984  
(3) 2993 (4) 2543

134. The value of  $\frac{\sqrt{80} - \sqrt{112}}{\sqrt{45} - \sqrt{63}}$  is :

- (1)  $\frac{3}{4}$  (2)  $1\frac{3}{4}$

- (3)  $1\frac{1}{3}$  (4)  $1\frac{7}{9}$

135. When simplified, the

expression  $(100)^{\frac{1}{2}} \times (0.001)^{\frac{1}{3}} -$

$(0.0016)^{\frac{1}{4}} \times 3^0 + \left(\frac{5}{4}\right)^{-1}$  is equal

to:

- (1) 1.6 (2) 0.8  
(3) 1.0 (4) 0

136.  $\left( \frac{785 \times 785 \times 785 + 435 \times 435 \times 435}{(785)^2 + (435)^2 - (785)(435)} \right)$

simplifies to :

- (1) 350 (2) 785  
(3) 1220 (4) 1320

137. Find the missing number of the sequence :

"3, 14, 25, 36, 47, ?"

- (1) 1114 (2) 1111  
(3) 1113 (4) None of these

138. When simplified the product

$\left(1 - \frac{1}{3}\right)\left(1 - \frac{1}{4}\right)\left(1 - \frac{1}{5}\right) \dots \dots \left(1 - \frac{1}{n}\right)$

becomes :

- (1)  $\frac{1}{n}$  (2)  $\frac{2}{n}$

- (3)  $\frac{2(n-1)}{n}$  (4)  $\frac{2}{n(n+1)}$

139. The sum  $(101 + 102 + 103 + \dots + 200)$  is equal to :

- (1) 15000 (2) 15025  
(3) 15050 (4) 25000

140. The sum of all natural numbers from 75 to 97 is :

- (1) 1598 (2) 1798

- (3) 1958 (4) 1978

141. The fourth proportional to 0.12, 0.21, 8 is :

- (1) 8.9 (2) 56  
(3) 14 (4) 17

142. If 3 men or 6 women can do a piece of work in 16 days, in how many days can 12 men and 8 women do the same piece of work?

- (1) 4 days (2) 5 days  
(3) 3 days (4) 2 days

143. On what sum does the difference between the compound interest and the simple interest for 3 years at 10% is Rs. 31 ?

- (1) Rs. 1500  
(2) Rs. 1200  
(3) Rs. 1100  
(4) Rs. 1000

144. A builder borrows Rs. 2550 to be paid back with compound interest at the rate of 4% per annum by the end of 2 years in two equal yearly instalments. How much will each instalment be ?

- (1) Rs. 1352  
(2) Rs. 1377  
(3) Rs. 1275  
(4) Rs. 1283

145. At what percent per annum will Rs. 3000/- amount to Rs. 3993/- in 3 years if the interest is compounded annually?

- (1) 9% (2) 10%  
(3) 11% (4) 13%

146. The digit in the unit's place in the square-root of 15876 is :

- (1) 8 (2) 6  
(3) 4 (4) 2

147.  $\sqrt[3]{\frac{72.9}{0.4096}}$  is equal to :

- (1) 0.5625 (2) 5.625  
(3) 182 (4) 13.6

148.  $(5.5)^3 - (4.5)^3$  is equal to :

- (1) 1 (2) 75  
(3) 74.25 (4) 75.25

149.  $12345679 \times 72$  is equal to :

- (1) 88888888  
(2) 999999998  
(3) 888888888  
(4) 898989898



150. A six digit number is formed by repeating a three digit number; for example, 256, 256 or 678, 678 etc. Any number of this form is always exactly divisible by :  
 (1) 7 only (2) 11 only  
 (3) 13 only (4) 1001
151. Given that  $0.111 \dots = \frac{1}{9}$ ; 0.444 is equal to :  
 (1)  $\frac{1}{90}$  (2)  $\frac{2}{45}$   
 (3)  $\frac{1}{99}$  (4)  $\frac{4}{9}$
152. The smallest number to be added to 1000, so that 45 divides the sum exactly, is :  
 (1) 35 (2) 80  
 (3) 20 (4) 10
153. The sum of all natural numbers between 100 and 200, which are multiples of 3 is :  
 (1) 5000 (2) 4950  
 (3) 4980 (4) 4900
154. 1008 divided by which single digit number gives a perfect square?  
 (1) 9 (2) 4  
 (3) 8 (4) 7
155. A man, a woman and a boy can complete a job in 3, 4 and 12 days respectively. How many boys must assist 1 man and 1 woman to complete the job in  $\frac{1}{4}$  of a day?  
 (1) 1 (2) 4  
 (3) 19 (4) 41
156. A pipe of diameter d can drain a certain water tank in 40 minutes. The time taken by a pipe of diameter 2d for doing the same job in :  
 (1) 5 minutes  
 (2) 10 minutes  
 (3) 20 minutes  
 (4) 80 minutes
157. A contractor undertakes to make a road in 40 days and employs 25 men. After 24 days, he finds that only one-third of the road is made. How many extra men should he employ so that he is able to complete the work 4 days earlier?  
 (1) 100 (2) 60  
 (3) 75 (4) None of these
158. A can do a work in 15 days and B in 20 days. If they together work on it for 4 days, then the fraction of the work that is left is :  
 (1)  $\frac{8}{15}$  (2)  $\frac{7}{15}$   
 (3)  $\frac{1}{4}$  (4)  $\frac{1}{10}$
159. A tap can empty a tank in one hour. A second tap can empty it in 30 minutes. If both the taps operate simultaneously, how much time is needed to empty the tank?  
 (1) 20 minutes  
 (2) 30 minutes  
 (3) 40 minutes  
 (4) 45 minutes
160. The perimeter of the top of a rectangular table is 28m., whereas its area is 48m<sup>2</sup>. What is the length of its diagonal?  
 (1) 5m. (2) 10m.  
 (3) 12m. (4) 12.5 m.
161. The volume of a right circular cylinder whose height is 40cm, and circumference of its base is 66 cm, is :  
 (1) 55440 cm<sup>3</sup>  
 (2) 3465 cm<sup>3</sup>  
 (3) 7720 cm<sup>3</sup>  
 (4) 13860 cm<sup>3</sup>
162. ABC is a triangle with base AB. D is a point on AB such that AB = 5 and DB = 3. What is the ratio of the area of  $\triangle ADC$  to the area of  $\triangle ABC$  ?  
 (1)  $\frac{3}{2}$  (2)  $\frac{2}{3}$   
 (3)  $\frac{3}{5}$  (4)  $\frac{2}{5}$
163. A sum of Rs. 1600/- gives a simple interest of Rs. 252/- in 2 years and 3 months. The rate of interest per annum is:  
 (1)  $5\frac{1}{2}\%$  (2) 8%  
 (3) 7% (4) 6%
164. A sum of Rs.400/- amounts to Rs. 480/- in 4 years. What will it amount to if the rate of interest is increased by 2%?  
 (1) Rs. 484 (2) Rs. 560  
 (3) Rs. 512 (4) None of these
165. The marked price of a watch was Rs. 720/-. A man bought the same for Rs. 550.80, after getting two successive discounts, the first at 10%. What was the second discount rate?  
 (1) 12% (2) 14%  
 (3) 15% (4) 18%
166. A shopkeeper marks his goods 20% above cost price, but allows 30% discount for cash. His net loss is :  
 (1) 8% (2) 10%  
 (3) 16% (4) 20%
167. The arithmetic mean of the scores of a group of students in a test was 52. The brightest 20% of them secured a mean score of 80 and the duller 25% a mean score of 31. The mean score of remaining 55% is :  
 (1) 45% (2) 50%  
 (3) 51.4% approx.  
 (4) 54.6% approx.
168. A cricketer whose bowling average is 24.85, runs per wicket, takes 5 wickets for 52 runs and thereby decreases his average by 0.85. The number of wickets taken by him till the last match was :  
 (1) 64 (2) 72  
 (3) 80 (4) 96
169. The sum and product of two numbers are 12 and 35 respectively. What will be the sum of their reciprocals?  
 (1)  $\frac{1}{3}$  (2)  $\frac{1}{5}$   
 (3)  $\frac{12}{35}$  (4)  $\frac{35}{12}$
170. Which of the following is a perfect square as well as a cube?  
 343, 125, 81, or 64  
 (1) 81 (2) 125  
 (3) 343 (4) 64

171. If the sum of two numbers is 3 and the sum of their squares is 12, then their product is equal to :

(1)  $\frac{3}{2}$  (2)  $\frac{2}{3}$   
 (3)  $-\frac{3}{2}$  (4)  $-\frac{2}{3}$

172. Half of 1 per cent written as a decimal is :

(1) 0.2 (2) 0.02  
 (3) 0.05 (4) 0.005

173. 800 chocolates were distributed among the students of a class. Each student got twice as many chocolates as the number of students in the class. The number of students in the class was :

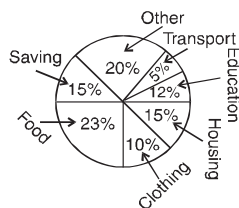
(1) 25 (2) 30  
 (3) 35 (4) 20

174. A runner runs  $1\frac{1}{4}$  laps of a 5 lap race. What fractional part of the race remains to be run?

(1)  $\frac{15}{4}$  (2)  $\frac{4}{5}$   
 (3)  $\frac{5}{6}$  (4)  $\frac{2}{3}$

**Directions (175-179) :** The circle graph given here shows the spendings by a family on various items during the year 1998. Study the graph and answer the following questions.

(Per cent of money spent by a family on various items during 1998)



175. If the total amount spent during the year 1998 was Rs. 46000/-, the amount spent on food, was :

(1) Rs. 2000/-  
 (2) Rs. 10580/-  
 (3) Rs. 23000/-  
 (4) Rs. 2300/-

176. If the total amount spent was Rs. 46000/-, how much was spent on clothing and housing together?

(1) Rs. 11500/-  
 (2) Rs. 1150/-  
 (3) Rs. 10000/-  
 (4) Rs. 15000/-

177. The ratio of the total amount of money spent on housing to that spent on education was :

(1) 5 : 2 (2) 2 : 5  
 (3) 4 : 5 (4) 5 : 4

178. Graph shows that the maximum amount was spent on:

(1) Food (2) Housing  
 (3) Clothing (4) Others

179. If the total expenditure of the family for the year 1998 was Rs. 46000/-, the family saved during the year.

(1) Rs. 1500/-  
 (2) Rs. 15000/-  
 (3) Rs. 6900/-  
 (4) Rs. 3067/- approx.

180. The length of a plot is five times its breadth. A playground measuring 245 square metres occupies half of the total area of the plot. What is the length of the plot?

(1)  $35\sqrt{2}$  metres  
 (2)  $175\sqrt{2}$  metres  
 (3) 490 metres  
 (4)  $5\sqrt{2}$  metres

181. Between a square of perimeter 44 cm and a circle of circumference 44 cm, which figure has larger area and by how much?

(1) Square,  $33\text{ cm}^3$   
 (2) Circle,  $33\text{ cm}^3$   
 (3) Both have equal area.  
 (4) Square,  $495\text{ cm}^2$

182. The average of 7 consecutive numbers is 20. The largest of these numbers is :

(1) 24 (2) 23  
 (3) 22 (4) 20

183. The average age of 14 girls and their teacher's age is 15 years. If the teacher's age is excluded, the average reduces by 1. What is the teacher's age?

(1) 35 years (2) 32 years  
 (3) 30 years (4) 29 years

184. The average age of four brothers is 12 years. If the age of their mother is also included, the average is increased by 5 years. The age of the mother (in years) is :

(1) 37 years (2) 43 years  
 (3) 48 years (4) 53 years

185. If 3 toys are sold at the cost price of 4 toys of the same kind, the profit will be :

(1) 25% (2)  $33\frac{1}{3}\%$   
 (3)  $66\frac{2}{3}\%$  (4) 50%

186. A sells a bicycle to B at a profit of 20%. B sells it to C at a profit of 25%. If C pays Rs. 225/- for it, the cost price of the bicycle for A is :

(1) Rs. 110/- (2) Rs. 125/-  
 (3) Rs. 120/- (4) Rs. 150/-

187. The price of an article is decreased by 10%. To restore its former value the new price must be increased by :

(1) 10% (2) 11%  
 (3)  $9\frac{1}{11}\%$  (4)  $11\frac{1}{9}\%$

188. A retailer buys 40 pens at the marked price of 36 pens from a wholesaler. If he sells these pens giving a discount of 1%, what is the profit percent?

(1) 9% (2) 10%  
 (3)  $10\frac{1}{9}\%$  (4) 11%

189. 12 copies of a book were sold for Rs. 1800/- thereby gaining cost-price of 3 copies. The cost price of a copy is :

(1) Rs. 120/-  
 (2) Rs. 150/-  
 (3) Rs. 1200/-  
 (4) Rs. 1500/-

190. If p% of p is 36, then p is equal to :

(1) 3600 (2) 600  
 (3) 60 (4) 15

191. The ratio 5 : 4 expressed as a per cent equals :

(1) 125% (2) 80%  
 (3) 40% (4) 12.5%

192. 2 is what percent of 50?  
 (1) 2 (2) 2.5  
 (3) 4 (4) 5
193. In a class 60% of the student pass in Hindi and 45% pass in Sanskrit. If 25% of them pass in atleast one subject, what percentage of the students fail in both the subjects?  
 (1) 80% (2) 75%  
 (3) 20% (4) 25%
194. If A's income is 40% less than that of B, how much percent B's income is more than that of A?  
 (1) 60% (2) 40%  
 (3) 66.66% (4) 33.33%
195. How many seconds will a 500 metre long train take to cross a man walking with a speed of 3 km/hr. in the direction of the moving train if the speed of the train is 63 km/hr?  
 (1) 25 (2) 30  
 (3) 40 (4) 45
196. A man walking at the rate of 5 km/hr. crosses a bridge in 15 minutes. The length of the bridge (in metres) is :  
 (1) 600 (2) 750  
 (3) 1000 (4) 1250
197. If a man reduces his speed to  $\frac{2}{3}$ , he takes 1 hour more in walking a certain distance. The time (in hours) to cover the distance with his normal speed is :  
 (1) 2 (2) 1  
 (3) 3 (4) 1.5
198. I walk a certain distance and ride back taking a total time of 37 minutes. I could walk both ways in 55 minutes. How long would it take me to ride both ways?  
 (1) 9.5 minutes  
 (2) 19 minutes  
 (3) 18 minutes  
 (4) 20 minutes
199. A thief is noticed by a policeman from a distance of 200m. The thief starts running and the policeman chases him. The thief and the policeman run at the rate of 10 km. and 11 k.m. per hour respectively.

What is the distance between them after 6 minutes?

- (1) 100 m (2) 190 m  
 (3) 200 m (4) 150 m

200. The numbers 2, 4, 6, 8 .....98, 100 are multiplied together. The number of zeros at the end of the product must be :

- (1) 13 (2) 12  
 (3) 11 (4) 10

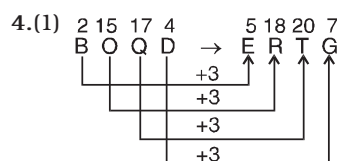
### ANSWERS

1. (2)	2. (4)	3. (3)	4. (1)
5. (4)	6. (1)	7. (3)	8. (4)
9. (3)	10. (2)	11. (2)	12. (3)
13. (1)	14. (2)	15. (1)	16. (2)
17. (3)	18. (2)	19. (1)	20. (1)
21. (4)	22. (1)	23. (4)	24. (4)
25. (3)	26. (4)	27. (4)	28. (3)
29. (2)	30. (2)	31. (3)	32. (4)
33. (3)	34. (1)	35. (3)	36. (3)
37. (1)	38. (2)	39. (1)	40. (4)
41. (2)	42. (2)	43. (2)	44. (4)
45. (2)	46. (3)	47. (2)	48. (2)
49. (2)	50. (1)	51. (4)	52. (2)
53. (3)	54. (2)	55. (4)	56. (3)
57. (4)	58. (3)	59. (3)	60. (1)
61. (1)	62. (3)	63. (2)	64. (2)
65. (1)	66. (3)	67. (3)	68. (4)
69. (4)	70. (1)	71. (2)	72. (1)
73. (1)	74. (3)	75. (1)	76. (2)
77. (3)	78. (3)	79. (3)	80. (3)
81. (2)	82. (1)	83. (2)	84. (2)
85. (2)	86. (3)	87. (4)	88. (1)
89. (2)	90. (2)	91. (2)	92. (4)
93. (2)	94. (4)	95. (3)	96. (3)
97. (3)	98. (4)	99. (4)	100. (1)
101. (4)	102. (1)	103. (3)	104. (4)
105. (1)	106. (1)	107. (4)	108. (1)
109. (4)	110. (1)	111. (3)	112. (1)
113. (2)	114. (4)	115. (3)	116. (4)
117. (1)	118. (1)	119. (3)	120. (4)
121. (1)	122. (3)	123. (3)	124. (1)
125. (3)	126. (3)	127. (2)	128. (3)
129. (4)	130. (4)	131. (4)	132. (3)
133. (2)	134. (3)	135. (1)	136. (3)

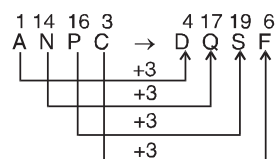
137. (4)	138. (2)	139. (3)	140. (4)
141. (3)	142. (3)	143. (4)	144. (1)
145. (2)	146. (2)	147. (2)	148. (4)
149. (3)	150. (4)	151. (4)	152. (1)
153. (2)	154. (4)	155. (4)	156. (2)
157. (3)	158. (2)	159. (1)	160. (2)
161. (4)	162. (4)	163. (3)	164. (3)
165. (3)	166. (3)	167. (3)	168. (3)
169. (3)	170. (4)	171. (3)	172. (4)
173. (4)	174. (1)	175. (2)	176. (1)
177. (4)	178. (1)	179. (3)	180. (1)
181. (2)	182. (2)	183. (4)	184. (1)
185. (2)	186. (4)	187. (4)	188. (2)
189. (1)	190. (3)	191. (1)	192. (3)
193. (2)	194. (3)	195. (2)	196. (4)
197. (1)	198. (2)	199. (1)	200. (3)

### EXPLANATIONS

- 1.(2) Diamond is a transparent precious stone of pure carbon. Similarly, corundum is equivalent to Ruby.
- 2.(4) Smoke leads to pollution. Similarly, War leads to destruction.
- 3.(3) Pen is filled with ink. Similarly, vein is filled with blood.



Similarly,



- 5.(4) The given pair is of opposite letters.

Series of opposite letters

A	B	C	D	E	F	G	H	I	J	K	L	M
↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
Z	Y	X	W	V	U	T	S	R	Q	P	O	N

Now

A F K P  
 ↓ ↓ ↓ ↓  
 Z U P K

Similarly,  
 B G L Q  
 ↓ ↓ ↓ ↓  
 Y T O J

6.(1)  $182 = (13)^2 + 13$  and

$(18)^2 + 18 = \boxed{342}$

$210 = (14)^2 + 14$  and

$380 = (19)^2 + 19$

7.(3) From first figure to second figure to the left of sign (::), one side is added to both the geometrical figures.

8.(4) From first figure to second figure to the left of sign (::), the left design is placed above the right design while the middle design is placed at the bottom position.

9.(3) From first figure to second figure to the left of sign (::), the designs move from left to right while the right design is shifted to the left position.

10.(2) From first figure to second figure to the left of sign (::), the triangle is converted into square, i.e., one side is added to each design and a circle is introduced inside the concentric squares touching the sides.

11.(2) From first figure to second figure to the left of sign (::), one leaflet is deleted and one line segment is added in each of the leaflets.

12.(3) Except Kohima all others are States of Union of India. Kohima is the capital of State of Nagaland.

13.(1) Except amoeba all others are multicellular organisms. Amoeba is a tiny living creature consisting of a single cell.

14.(2)  $I \xrightarrow{+1} J$  and  $C \xrightarrow{+1} D$

$Q \xrightarrow{+1} R$  and  $K \xrightarrow{+1} L$

$P \xrightarrow{+1} Q$  and  $M \xrightarrow{+1} N$

But,

$W \xrightarrow{+2} Y$  and  $T \xrightarrow{-1} S$

15.(1) Except 8, all other numbers are multiples of 7.

$42 = 7 \times 6$

$49 = 7 \times 7$

$35 = 7 \times 5$

16.(2) The second number is three times the first number except in the case of option (2).

$81 \times 3 = 243$

$64 \times 3 = 192$

$25 \times 3 = 75$

But,  $16 \times 4 = 64$

17.(3) The meaningful order would be :

(4) Jungle



(3) Timber



(2) Pulp



(5) Paper



(1) Book

18.(2) The given words would appear in the following order in a dictionary :

(3) Epigene



(5) Epilogue



(2) Episode



(1) Epitaxy



(4) Epitome

19.(1) In the first category, the figures having one full circle can be included. Such figures are (1), (4) and (7). In the second category, the figures having one pointed end can be included. Such figures are (2), (5) and (8).

In the third category, the figures consisting of both straight lines and curved lines can be included. Such figures are (3), (6) and (9).

20.(1) 

1, 4, 9
2, 6, 8
3, 5, 7

21.(4) The first group of figures consists only of straight lines. Such figures are (1), (4) and (7).

The second group of figures consists of circles and straight lines. Such figures are (2), (6) and (9).

The third group of figures consists of an oval and straight lines. Such figures are (3), (5) and (8).

22.(1) 

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23.(4) Option (1)

$A \xrightarrow{+4} E \xrightarrow{+4} I \xrightarrow{+4} M \dots$

Option (2)

$E \xrightarrow{+3} H \xrightarrow{+3} K \xrightarrow{+3} N \dots$

Option (3)

$D \xrightarrow{+5} I \xrightarrow{+5} N \xrightarrow{+5} S \dots$

Option (4)

$F \xrightarrow{+2} H \xrightarrow{+3} K \xrightarrow{+4} \dots$

$O \xrightarrow{+5} T \xrightarrow{+6} Z \dots$

24.(4) Add 2, 3, 4, 5 .... respectively to numerators and add 4, 6, 8, 10.... respectively to the denominators. Thus,

$\frac{2+2}{3+4} = \frac{4+3}{7+6} = \frac{7}{13}$

25.(3) The given number series is based on the following pattern :

			-5			-5			
25	50	30	↓	45	↓	35	↓	40	↓
			+5			+5			+5



26.(4)

27.(4) From left to right the number of arrows goes on decreasing by one in each figure.

28.(3) From first figure to second figure the lower design is inverted and moves to the top and then it duplicates.

29.(2) 

$+$	$\rightarrow$	$\div$	$\div$	$\rightarrow$	$\times$
$\times$	$\rightarrow$	$-$	$\rightarrow$	$+$	

Option (1)

$18 \div 6 - 7 + 5 \times 2 = 20$

After conversion

$18 \times 6 + 7 \div 5 - 2 = 20$

or,  $108 + \frac{7}{5} - 2 \neq 20$

Option (2)

$$18 + 6 \div 7 \times 5 - 2 = 18$$

After conversion

$$18 \div 6 \times 7 - 5 + 2 = 18$$

$$\text{or, } 3 \times 7 - 5 + 2 = 18$$

$$\text{or, } 21 - 5 + 2 = 18$$

$$\text{or, } 23 - 5 = 18$$

$$\text{or, } 18 = 18$$

30.(2)  $\begin{matrix} - \rightarrow \div; + \rightarrow \times \\ \div \rightarrow -; \times \rightarrow + \end{matrix}$

Option (1)

$$18 \div 3 \times 2 + 8 - 6 = 10$$

After conversion

$$18 - 3 + 2 \times 8 \div 6 = 10$$

$$\text{or, } 18 - 3 + 2 \times \frac{8}{6} = 10$$

$$\text{or, } 18 - 3 + \frac{8}{3} \neq 10$$

Option (2)

$$18 - 3 + 2 \times 8 \div 6 = 14$$

After conversion

$$18 \div 3 \times 2 + 8 - 6 = 14$$

$$\text{or, } 6 \times 2 + 8 - 6 = 14$$

$$\text{or, } 12 + 8 - 6 = 14$$

$$\text{or, } 20 - 6 = 14$$

$$\text{or, } 14 = 14$$

31.(3) First of all, add the digits of each number and then multiply them.

$$\Rightarrow (3 + 2 + 4) \times (1 + 5 + 0)$$

$$\text{or, } 9 \times 6 = 54$$

$$\Rightarrow (2 + 5 + 1) \times (4 + 0 + 2)$$

$$\text{or, } 8 \times 6 = 48$$

$$\Rightarrow (5 + 2 + 3) \times (2 + 4 + 6)$$

$$\text{or, } 10 \times 12 = 120$$

Therefore,

$$\Rightarrow (6 + 5 + 1) \times (3 + 4 + 5)$$

$$\text{or, } 12 \times 12 = 144$$

32.(4)  $12 \times 7 = 84 \Rightarrow 408$

$$9 \times 8 = 72 \Rightarrow 207$$

Similarly,

$$13 \times 7 = 91 \Rightarrow 109$$

33.(3)  $\begin{matrix} \text{N O I D A} & \rightarrow & \text{S T N I F} \\ & +5 & \\ & +5 & \\ & +5 & \\ & +5 & \end{matrix}$

Similarly,

$$\begin{matrix} \text{M E E R U T} & \rightarrow & \text{R J J W Z Y} \\ & +5 & \\ & +5 & \\ & +5 & \\ & +5 & \\ & +5 & \end{matrix}$$

34.(1)  $\begin{matrix} \text{F O R G E T} & \rightarrow & \text{D P P H C U} \\ & -2 & \\ & +1 & \\ & -2 & \\ & +1 & \\ & -2 & \\ & +1 & \end{matrix}$

Similarly,

$$\begin{matrix} \text{D O C T O R} & \rightarrow & \text{B P A U M S} \\ & -2 & \\ & +1 & \\ & -2 & \\ & +1 & \\ & -2 & \\ & +1 & \end{matrix}$$

35. (3)

1	2	3	4	5	6	7	8
D	E	C	E	M	B	E	R

↓

7	8	5	6	3	4	1	2
E	R	M	B	C	E	D	E

Similarly,

7	8	5	6	3	4	1	2
E	R	M	B	V	E	N	O

↓

1	2	3	4	5	6	7	8
N	O	V	E	M	B	E	R

**Trick :** From the jumbled letters only the word NOVEMBER can be formed considering the given options.

36. (3) R → 18

E → 5

D → 4

Add 2 to the position number of each alphabet and then write the sum so obtained in reverse order.

R E D ⇒ 6 7 20

Similarly,

G R E E N

↓ ↓ ↓ ↓ ↓

7 18 5 5 14

+ + + + +

2 2 2 2 2

↓ ↓ ↓ ↓ ↓

9 20 7 7 16

GREEN ⇒ 16 7 7 20 9

37.(1) According to question,

9th → Saturday

Therefore, 9 - 7

= 2nd → Saturday

∴ 1st → Friday

38.(2) Total marks =  $9 \times 45 = 405$ 

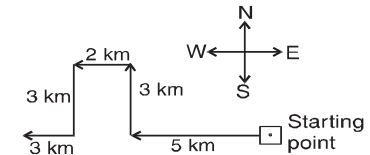
According to question,

$$405 - 35 + 48 = 418$$

∴ Average marks

$$= \frac{418}{9} = 46.4$$

39.(1)



It is clear from the diagram that Kamu is to the west of her house.

40.(4) Some candidates of this examination write in Hindi.

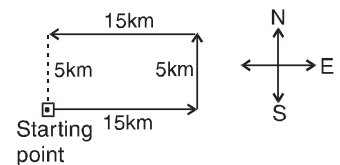
41.(2) In the given word there are only two P's while in the word PEPPER there are three P's.

42.(2) There is no letter 'S' in the keyword.

43.(2)

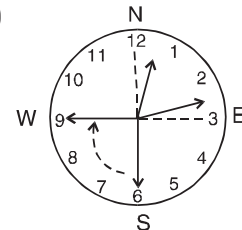


44.(4)



It is clear from the diagram that Amit was 5 km away from the starting point.

45.(2)



It is clear from the diagram that minute hand will be in west direction.

46.(3) The numbers in the given arrangement follow the rule given below :