Youth Competition Times

Non Technical Popular Category

RRB NTPC

(Computer Based Test)

Stage-I

Practice Book

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1st Stage Computer Based Test (CBT)
Common for all Notified Posts of this CEN 05 & 06/2024.

Exam Duration in Minutes	No. of Questions (each of 1 mark) from			Total No. of Questions
	General Awareness	Mathematics	General Intelligence and Reasoning	
90	40	30	30	100

The examination duration will be 120 Minutes for eligible PwBD candidates accompanied with Scribe. The section wise distribution given in the above table is only indicative and there may be some variations in the actual question papers. **There will be negative marking and 1/3 mark shall be deducted for each wrong answer.**

The 1st Stage CBT is of screening nature and the standard of questions for the CBT will be generally in conformity with the educational standards prescribed for the posts. The normalized score of 1st Stage CBT shall be used for short listing of candidates for 2nd Stage CBT as per their merit. **Candidates who nd are shortlisted for 2 Stage CBT availing the reservation benefits of OBC(NCL)/SC/ST/EWS, PwBD and ExSM shall continue to be considered only against OBC(NCL)/SC/ST/EWS, PwBD and ExSM for all subsequent stages of recruitment process.** The Questions will be of objective type with multiple choices and are likely to include questions pertaining to:

a. **Mathematics:** Number System, Decimals, Fractions, LCM, HCF, Ratio and Proportions, Percentage, Menstruation, Time and Work, Time and Distance, Simple and Compound Interest, Profit and Loss, Elementary Algebra, Geometry and Trigonometry, Elementary Statistics etc.

b. **General Intelligence and Reasoning:** Analogies, Completion of Number and Alphabetical Series, Coding and Decoding, Mathematical Operations, Similarities and Differences, Relationships, Analytical Reasoning, Syllogism, Jumbling, Venn Diagrams, Puzzle, Data Sufficiency, Statement- Conclusion, Statement- Courses of Action, Decision Making, Maps, Interpretation of Graphs etc. c.

c. **General Awareness:** Current Events of National and International Importance, Games and Sports, Art and Culture of India, Indian Literature, Monuments and Places of India, General Science and Life Science (up to 10th CBSE), History of India and Freedom Struggle, Physical, Social and Economic Geography of India and World, Indian Polity and Governance- constitution and political system, General Scientific and Technological Developments including Space and Nuclear Program of India, UN and Other important World Organizations, Environmental Issues Concerning India and World at Large, Basics of Computers and Computer Applications, Common Abbreviations, Transport Systems in India, Indian Economy, Famous Personalities of India and World, Flagship Government Programs, Flora and Fauna of India, Important Government and Public Sector Organizations of India etc.

Minimum percentage of marks for eligibility in various categories: UR-40%, EWS- 40%, OBC (Non creamy layer) -30%, SC-30%, ST-25%. These percentages of marks for eligibility may be relaxed by 2 Marks for PwBD candidates in case of shortage of PwBD candidates against vacancies reserved for them.

PRACTICE SET - 1

1. Which of the following number is NOT divisible by 8?
(a) 35792 (b) 35112
(c) 35412 (d) 35552

2. One-fourth of a number is equal to three-eighth of another number. If 30 is added to the first number, then it becomes six times that of the second number. The first number is:
(a) 12 (b) 20
(c) 10 (d) 15

3. Which of the following fractions is the largest?
$\frac{7}{9}, \frac{6}{7}, \frac{22}{25}$ and $\frac{11}{13}$
(a) $\frac{11}{13}$ (b) $\frac{22}{25}$
(c) $\frac{7}{9}$ (d) $\frac{6}{7}$

4. The value of $0.1\overline{6} + 0.1\overline{5} - 0.1\overline{3}$ is
(a) $\frac{23}{63}$ (b) $\frac{17}{90}$
(c) $\frac{34}{45}$ (d) $\frac{19}{99}$

5. The sum of A fraction and its inverse is $2\frac{25}{66}$. Find the greater number of the two:
(a) $1\frac{15}{22}$ (b) $1\frac{5}{6}$
(c) $1\frac{20}{33}$ (d) $1\frac{5}{11}$

6. If 2334/33.1 = 261, then 23.34/3.31 = ?
(a) 0.261 (b) 2.61
(c) 26.1 (d) 261

7. The LCM of the numbers 36, 54, 72 and 96 is :
(a) 1064 (b) 764
(c) 864 (d) 964

8. Three numbers are in the ratio 4 : 5 : 7, and their LCM is 5600. Their HCF is :
(a) 40 (b) 10
(c) 20 (d) 30

9. Find the LCM of 17/31, 34/62 and 48/93.
(a) 816/31 (b) 802/31
(c) 912/31 (d) 804/31

10. What is the smallest number with 7 factors exactly?
(a) 100 (b) 36
(c) 64 (d) 16

11. 64 students of Class 10 took part in a mathematics quiz. If the number of girls was 16 more than the number of boys, then find the ratio of the number of boys to the total number of students who took part in the quiz.
(a) 4 : 9 (b) 3 : 5
(c) 3 : 8 (d) 5 : 8

12. The ratio of the sum of money Arun and Ahaan had is 9 : 5. If Arun gives ₹12 from his share to Ahaan, then the ratio will change to 4 : 3. How much money did Arun have initially?
(a) ₹144 (b) ₹126
(c) ₹108 (d) ₹90

13. 20% of the population of a city died due to war and of the remaining population, 5% died in an epidemic. If the present population of the city is 15,200, then find the population of the city before the war.
(a) 20,000 (b) 19,680
(c) 23,500 (d) 20,100

14. The cost of a washing machine is 40% less than the cost of a TV. If the cost of the washing machine increases by 18% and that of the TV decreases by 10%, then what is the change in the total cost of 5 washing machines and 2 TVs?
(a) Decreases by 6.5% (b) Decreases by 6.4%
(c) Increases by 6.5% (d) Increases by 6.8%

15. The length of the three sides of a triangle are 12 cm, 15 cm and 21 cm, respectively, Find the area (in cm^2) of the triangle.
(a) $36\sqrt{6}$ (b) $30\sqrt{6}$
(c) $72\sqrt{6}$ (d) $48\sqrt{6}$

16. A rectangle has a length 3m more than its width and a perimeter numerically equal in value to its area. The integer part of the value of its diagonal is:
(a) 7 (b) 9
(c) 8 (d) 6

17. A can do a piece of work in 15 day and B can do the same work in 20 days. The time taken by them working together to do the same work is:
(a) $7\frac{4}{7}$ days (b) $10\frac{4}{7}$ days
(c) $8\frac{4}{7}$ days (d) $9\frac{4}{7}$ days

18. A can do a piece of work in 24 days and B can do $\frac{2}{5}$ of the same work in 12 days. Both work together for 6 days. How much work in still left?
(a) $\frac{17}{20}$ (b) $\frac{13}{20}$
(c) $\frac{11}{20}$ (d) $\frac{9}{20}$

19. **A student reaches school on his bicycle in 3/2 hours at a speed of 8 km/h. On the return journey he rests for half an hour and takes a route which is 1 km shorter. What should be the percentage increase in the speed of the bicycle so that he reaches home in the same time?**

(a) 37% (b) 37.5%
(c) 30.5% (d) 35%

20. **On increasing the speed 5 km/hr of a train. It takes 2 hour less in covering a distance of 300 km find its general speed?**

(a) 30 km/hr (b) 25 km/hr
(c) 20 km/hr (d) 35 km/hr

21. **The compound interest on a sum of money at 5% per annum for 3 years is ₹ 6305 Find the simple interest (in ₹) for the same sum at the same rate of interest for the same number of years.**

(a) ₹4,000 (b) ₹6,000
(c) ₹5,000 (d) ₹3,600

22. **A certain sum was invested at 40% p.a compound interest for two years and the interest was compounded annually. If the interest was compounded half-yearly, the amount payable of maturity after two years would have been ₹ 4,544 more. What was the sum invested?**

(a) ₹ 42,500 (b) ₹ 40,000
(c) ₹ 42,000 (d) ₹ 37,500

23. **The selling price of 32 items is equal to the cost price of 38 items. Find the profit percentage.**

(a) 16.25% (b) 15.79%
(c) 18.75% (d) 19.25%

24. **Pavan sold an item at a loss of 12.5%. If he could have sold it for ₹ 56 more, he would have made a profit of 22.5%. What should be the selling price of the item to make a profit of 25%?**

(a) ₹ 182 (b) ₹ 190
(c) ₹ 185 (d) ₹ 200

25. $\left(1-\frac{1}{n}\right)+\left(1-\frac{2}{n}\right)+\left(1-\frac{3}{n}\right)+$ **.....up to n terms will result as:**

(a) $\frac{1}{2n}$ (b) $\frac{1}{2n-1}$
(c) $\frac{1}{n^2}$ (d) $\frac{n-1}{2}$

26. **If $x^2 + ax + b$, divided by $x - 3$, then the remaining 22 is obtained and the expression $x^2 + bx + a$, when divided by $x - 3$ then the remaining 24 is obtained. What is the value of a+b?**

(a) 23 (b) – 23
(c) – 7 (d) 7

27. **Find the value of $(\sin\theta + \text{cosec}\,\theta)^2 + (\cos\theta + \sec\theta)^2$**

(a) $7 + \cot^2\theta + \tan^2\theta$
(b) $5 + \cot^2\theta + \tan^2\theta$
(c) $7 - \cot^2\theta + \tan^2\theta$
(d) $5 - \cot^2\theta + \tan^2\theta$

28. **In triangle ABC, if the angles are in the ratio 4 : 3 : 5, find the angles.**

(a) 20°, 50°, 70° (b) 60°, 45°, 75°
(c) 20°, 15°, 25° (d) 40°, 30°, 50°

29. **If the mean of numbers 33, x, 47, 83 and 109 is 67, what is the mean of 50, 64, 100, 126 and x?**

(a) 84 (b) 81.8
(c) 80.6 (d) 80

30. **The maximum weight lifted by 750 participants are recorded and it is found that the Mean and the Median of this distribution are both more than the Mode. If the Mean and the Median are 184 Kg and 178 Kg respectively, then which of the following is the most likely value of the Mode (in Kg).**

(a) 168 (b) 166
(c) 162 (d) 172

31. **Select the option that is related to the third term in the same way as the second term is related to the first term?**

Gravity : Discovery : : Telephone : ?

(a) Experiment (b) Explore
(c) Construct (d) Invention

32. **Heart is related to 'Cardiology' in the same way as kidney is related to_____**

(a) Nuclear Medicine (b) Nephrology
(c) Neurology (d) Rheumatology

33. **In the given letter-cluster pairs, the first letter-cluster is related to the second letter-cluster following a certain logic. Study the given pairs carefully, and from the given options, select the pair that follows the same logic.**

ABC : EFG
PQR : TUV

(a) XYZ : BCD (b) PKL : RSM
(c) MNO : PQR (d) GHI : DEF

34. **Select the option that is related to the third number in the same way as the second number is related to the first number :**

343 : 1331 : 729 : ?

(a) 2187 (b) 2197
(c) 2184 (d) 2211

35. **In a certain code language, TOUGH is written as 20152178 and PLEAD is written as 1612514. How will CLOVE be written in the same language?**

(a) 31115215 (b) 31215225
(c) 31215324 (d) 31315235

36. **If 'SKIRT' is coded as 'MECLN', how will 'BLOUSE' be written using the same coding language?**

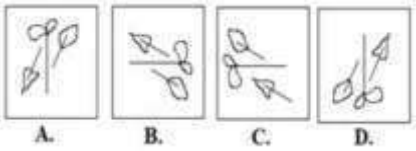
(a) VFIMOY (b) VFOMIY
(c) VFIOMY (d) VFMOIY

37. **In a certain code language, 'cip civ cin' is written as 'life is good', 'cip cin er' is written as 'love is life' How will 'love' be written as in that language?**
(a) cip (b) oob
(c) er (d) cin

38. **The word ORANGE has been coded using 4 different codes.**
Code 1 : PSBOHF
Code 2 : NQZMFD
Code 3 : QTCPIG
Code 4 : PTDRLK
Which of the given codes is used to write the word FISH or GKVL?
(a) Code 2 (b) Code 1
(c) Code 4 (d) Code 3

39. **Among the four words listed below, three are a like in some manner and one is different. Select the odd one.**
(a) Fear (b) Intelligence
(c) Happiness (d) Anger

40. **Four figures have been given, out of which three are alike in some manner and one is different. Select the odd one.**



(a) C (b) A
(c) D (d) B

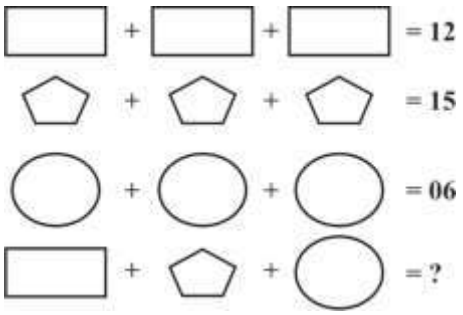
41. **Select the number from among the given options that can replace the question mark (?) in the following series**
22, 23, 26, 27, 30, 31, ?
(a) 31 (b) 35
(c) 34 (d) 33

42. **Select the number from among the given options that can replace the questions mark (?) in the following table.**

28	**63**	**94**
8	**18**	**?**
6	**9**	**13**

(a) 69 (b) 48
(c) 76 (d) 75

43. **Study the given pattern carefully and select the number that can replace the question mark (?) in it**



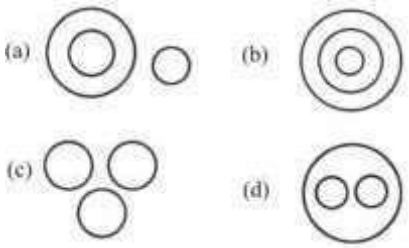
(a) 12 (b) 8
(c) 13 (d) 11

44. **Mahesh was facing east when he started from home. He took two right turns and one left turn to reach his school. In which direction, is he facing after reaching his school?**
(a) North (b) South
(c) West (d) East

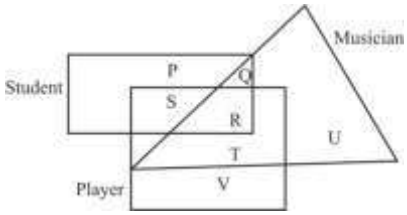
45. **Pointing to a photograph, Rohit said, "She is the daughter of the only son of my father." How is Rohit related to the girl in the photograph?**
(a) Cousin (b) Brother
(c) Father (d) Uncle

46. **If G stands for 'add', H stands for 'multiply', J stands for 'subtract' and K stands for 'division' then find the value of**
125 J 110 K 5 G 7 H 2
(a) 117 (b) 133
(c) 89 (d) 114

47. **Select the Venn diagram that best represents the relationship between computers, desktop and laptops.**



48. **Study the given figure and answer the given question.**



Which area represents the students who are musicians but not players ?
(a) R (b) S
(c) U (d) Q

49. **A team is to be selected from 13 players P1, P2, P3, P4, P5, P6, P7, P8, P9, P10, P11, P12 and P13. There will be seven players in the team. P2 cannot be selected with P1, P6 or P4. P7 cannot be selected with P2, P10, P11 or P13. If P8 and P13 both are selected, then P5 must be selected, P4 cannot be selected with P2, P6, P12 or P11.**
Which of the following is a correct selection of the team?
(a) P1, P3, P4, P5, P8, P9, P13
(b) P1, P6, P11, P12, P13, P3, P4
(c) P2, P3, P5, P7, P8, P9, P13
(d) P1, P3, P4, P5, P6, P8, P9

50. Statements :
A. All buses are trucks.
B. All trucks are trains.
Conclusions:
I. No train is bus.
II. Some trucks are bus.
(a) Only conclusion I follows
(b) Only conclusion II follows
(c) Both conclusion I and II follow
(d) None of the conclusion follows

51. Statement :
1) All red are pink.
2) Some pink are black
3) Some black are blue.
4) All blue are white.
Conclusion :
I. Some black are white.
II. Some blue are pink.
III. Some pink are red.
IV. No red is white.
(a) Only conclusion I and IV are follows
(b) Only conclusion II and IV are follows
(c) Only conclusion II follows
(d) Only conclusion I and III follows

52. In this question a statement is followed by two conclusions numbered I and II. You have to assume everything in the statement to be true and decide which of them logically follow (s) beyond a reasonable doubt from the information given in the statement.
Statement:
Before leaving for college, Sita is learning to cook basic meals from her mother.
Conclusions:
I. Sita didn't know how to cook.
II. Sita wants to throw a party for her friends before leaving for college.
(a) Only conclusion II follows
(b) Neither conclusion I nor II follows
(c) Only conclusion I follows
(d) Both conclusions I and II follow

53. In a party, each couple has at least one child (minor) and the party has 12 couples (married couples). Then which of these conclusion will be possible?
(a) There are at least 24 men in the party.
(b) There are at least 36 person in the party.
(c) There are only 12 men in the party.
(d) There are 22 women in the party.

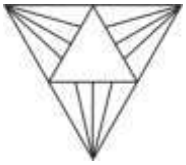
54. A statement is given followed by two assumptions numbered I and II. You have to assume everything in the statement to be true and decide which of the assumptions is/are implicit in the statement.
Statement:
Children below the age of 5 years should not be allowed too much of screen time a day.
Assumptions:
I. Too much screen time for growing children will affect them adversely.
II. Limited screen time is not detrimental to children below 5 years of age.
(a) Neither assumption I nor II is implicit
(b) Only assumption I is implicit
(c) Only assumption II is implicit
(d) Both assumption I and II are implicit

55. Read the given information and statements carefully and decide which option is True with respect to the statement.
If a sum of money is lent at simple interest, then the:
Statements:
1. Money gets doubled in 6 years if the rate of Interest is 16%.
2. Money gets doubled in 5 years if the rate of interest is 18%.
(a) Both statements 1 and 2 are incorrect
(b) Only statement 1 is correct
(c) Only statement 2 is correct
(d) Statement 1 and 2 are correct

56. Each consonant in the word 'COMPARE' is changed to the letter following it in the English alphabetical order, and each vowel is changed to the letter preceding it in the English alphabetical order. Which of the following letters will appear twice in the group of letters thus formed?
(a) Only Q (b) Only D
(c) D and N (d) Only N

57. Of the three given equations, the first two are solved on the basis of a certain system. Find the correct answer for the unsolved third equation on the same basis.
32 × 34 = 96
25 × 14 = 29
18 × 51 = ?
(a) 58 (b) 15
(c) 18 (d) 59

58. Find the number of triangles in the diagram given below:

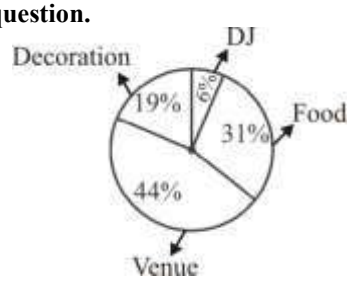


(a) 29 (b) 32
(c) 31 (d) 30

59. If today is Thursday, what will be the day after 560 days?
(a) Thursday (b) Friday
(c) Wednesday (d) Sunday

60. The following pie chart shows the expenditure distribution of a party. The blue part represents decoration expense, green part represents DJ expense, red part represents the food expenses and yellow part represents venue expenses.

Study the pie chart and answer the following question.



How much was spent on decoration and DJ together if the total expenditure was ₹32,700?

(a) ₹7359 (b) ₹8175
(c) ₹8347 (d) ₹7725

61. During the Indus Valley, period from where were the shells procured for craft production?

(a) Jaipur (b) Shortughai
(c) Nageshwar (d) Ropar

62. Most Ashokan inscriptions were in the …….. language while those in the northwest of the subcontinent were in Aramaic and Greek:

(a) Tamil (b) Prakrit
(c) Sanskrit (d) Pali

63. Which of the following literature is not written in Sanskrit?

(a) Tirukkural (b) Ratnavali
(c) Rajatarangini (d) Meghdoot

64. When was Goa captured by the Portuguese?

(a) 1605 AD (b) 1590 AD
(c) 1510 AD (d) 1485 AD

65. George Lemaitre is associated with_____.

(a) The Big Bang Theory
(b) Invention of electric current
(c) Deoxyribonucelic acid
(d) Discovery of solar system

66. Which country is known as 'Hermit Kingdom'?

(a) North Korea (b) Australia
(c) Japan (d) Thailand

67. Cape Comorin, the southernmost tip of mainland India is located in which of the following states?

(a) Andhra Pradesh (b) Kerala
(c) Tamil Nadu (d) Karnataka

68. Which committee recommended that Fundamental Duties be included in the Constitution of India?

(a) JB Kripalani Committee
(b) Swaran Singh Committee
(c) AV Thakkar Committee
(d) HC Mookherjee Committee

69. In whom does the supreme command of the Defence Forces of the Union vest as per the Constitution of India?

(a) Chief of the Army Staff
(b) President
(c) Prime Minister
(d) Defence Minister

70. Which one of the following bodies are not Bretton Woods Institutions?

(a) World Bank
(b) International Monetary Fund
(c) World Trade Organisation
(d) United Nations

71. Which of the following goals does NASA hope to achieve by launching the Helio Swarm research mission?

(a) Improving the understanding of the dynamics of the Sun
(b) Understanding the intense seasonal episodes of Pluto
(c) Improving the understanding of MARS
(d) Improving the understanding of Ionosphere

72. India is not a member of which of these groups?

(a) South Asian Association for Regional Cooperation
(b) Association of South-East Asian Nations
(c) Shanghai Cooperation Organization
(d) Bay of Bengal Initiative for Multi-sectoral Technical and Economic Cooperation

73. The inputs used in the production of goods or services to make an economic profit are known as ……. .

(a) factors of production
(b) factors of supply
(c) factors of presentation
(d) factors of sales

74. Which of the following is the full form of SIDBI?

(a) Small Industries and Domestic Bank of India
(b) Small Inter Development Bank of India
(c) Small Industries Development Bank of India
(d) Small Indian Development Bank for Industry

75. Which of the following persons played the shehnai at the Red Fort to celebrate the occasion of India's independence in August 1947?

(a) Ali Ahmed Hussain Khan
(b) Anant Lal
(c) Bismillah Khan
(d) Vasant Desai

76. The National Library of India is situated at?

(a) Kolkata (b) New Delhi
(c) Chennai (d) Mumbai

77. How many language universities are located in India as on June 2022?

(a) 6 (b) 16
(c) 26 (d) 20

78. The Dree Festival, an important agricultural festival, is primarily celebrated by the Apatani tribe in the state of……..
(a) Kerala (b) Madhya Pradesh
(c) West Bengal (d) Arunachal Pradesh

79. Who among the following is NOT a Nobel Prize winner?
(a) Mahatma Gandhi (b) Kailash Satyarthi
(c) Rabindranath Tagore (d) Amartya Sen

80. Who is the author of the book 'Lady Doctors: The Untold Stories of India's First Women in Medicine'?
(a) Kunal Basu (b) Kavitha Rao
(c) Anuradha Roy (d) Jairam Ramesh

81. Every year, 'Parakram Divas' is celebrated on the birth anniversary of which Indian Nationalist?
(a) Rani Lakshmi Bai
(b) Bhagat Singh
(c) Lala Lajpat Rai
(d) Netaji Subhash Chandra Bose

82. Dada Saheb Phalke Award is related to which field?
(a) Literature (b) Cinema
(c) Journalism (d) Volleyball

83. Which country has launched the world's first '6G device' in May, 2024 ?
(a) Russia
(b) Indonesia
(c) Japan
(d) Australia

84. Who took oath for fourth Prime Minister of 'Singapore' in May, 2024 ?
(a) Lawrence Wong
(b) Mikhail Mishustin
(c) Jaremiah Manele
(d) Luis Montenegro

85. The Yellowstone National Park is located in:
(a) USA (b) Canada
(c) Spain (d) France

86. The S.I. unit of resistivity is:
(a) ohm/m (b) ohm
(c) mho (d) ohm m

87. What is wrong statement about kinetic energy?
(a) During static state the energy contained in the object is called kinetic energy
(b) The energy received by an object based on its speed is known as kinetic energy
(c) K.E.=1/2(mv^2)
(d) Moving objects have kinetic energy

88. Approximate escape velocity on the surface of the Earth.
(a) 13.8km / s (b) 11.2 km / s
(c) 21.3 km / s (d) 4.3 km / s

89. What is the boiling point of water ?
(a) 210^0 Fahrenheit (b) 212^0 Fahrenheit
(c) 214^0 Fahrenheit (d) 208^0 Fahrenheit

90. If ammonia is a gas then camphor is a?
(a) The gas (b) Solid
(c) Liquid (d) Semi solid

91. Name the British chemist who presented his atomic theory in 1808, on conservation of mass and law of definite proportions, which was a turning point in the study of matter.
(a) Proust (b) Lavoisier
(c) Ernest Rutherford (d) John Dalton

92. Litmus solution is derived from_____
(a) Hydrangea (b) Cabbage leaves
(c) Lichen (d) Petunia

93. Which of the following terms best describes the biological study of animal behaviour?
(a) Etiology (b) Ethnology
(c) Entomology (d) Ethology

94. Parenchyma and collenchyma are the types of _____tissues.
(a) Vascular (b) Mechanical
(c) Simple permanent (d) Nervous

95. The system of scientific naming or nomenclature of organism which we used today was introduced by which of the following scientist?
(a) Carolus Linnaeus
(b) Marie Curie
(c) George Washington Carver
(d) Charles Darwin

96. Which of the following has maximum legs?
(a) Spider (b) Millipede
(c) Centipede (d) Hunting moth

97. Which of the following statements is correct with reference to aerobic respiration?
(a) The release of energy in aerobic respiration is lower than that in anaerobic respiration.
(b) In mitochondria, one molecule of pyruvate breaks down to give three molecules of carbon dioxide.
(c) Only carbon dioxide is released in the process of aerobic respiration.
(d) Aerobic respiration take places in the absence of oxygen.

98. Which of the following is the time taken by the CPU to access a location in memory?
(a) Memory formatting time
(b) Instruction cycle
(c) Memory access time
(d) CPU frequency

99. Computer memory is made up of a large number of cells, each cell is capable of storing ___of Information in the form of binary numbers?
(a) One byte (b) One bit
(c) Two bits (d) One nibble

100. Who has coined the term 'ecology'?
(a) Charles Darwin (b) Eugenius Warming
(c) Eugene Odum (d) Ernst Haeckel

SOLUTION : PRACTICE SET- 1

ANSWER KEY

1. (c)	11. (c)	21. (b)	31. (d)	41. (c)	51. (d)	61. (c)	71. (a)	81. (d)	91. (d)
2. (c)	12. (c)	22. (b)	32. (b)	42. (d)	52.(c)	62. (b)	72. (b)	82. (b)	92. (c)
3. (b)	13. (a)	23. (c)	33. (a)	43. (d)	53.(b)	63. (a)	73. (a)	83. (c)	93.(d)
4. (b)	14.(d)	24. (d)	34. (b)	44. (b)	54.(d)	64. (c)	74. (c)	84. (a)	94. (c)
5. (b)	15. (a)	25. (d)	35. (b)	45. (c)	55. (a)	65. (a)	75. (c)	85. (a)	95. (a)
6. (c)	16. (d)	26. (d)	36. (c)	46. (a)	56.(c)	66. (a)	76. (a)	86. (d)	96. (b)
7. (c)	17. (c)	27. (a)	37. (c)	47. (d)	57. (d)	67. (c)	77. (a)	87. (a)	97. (b)
8. (a)	18. (c)	28. (b)	38. (c)	48. (d)	58. (b)	68. (b)	78. (d)	88. (b)	98. (c)
9. (a)	19. (b)	29. (c)	39. (b)	49. (a)	59. (a)	69. (b)	79. (a)	89.(b)	99. (b)
10. (c)	20. (b)	30. (b)	40. (a)	50. (b)	60. (b)	70. (d)	80. (b)	90. (b)	100. (d)

SOLUTION

1. (c)

Divisibility rule of 8- If the last three digits of a number are divisible by 8, then the number is completely divisible by 8.

from the given options -

(a) 35 $\underline{792}$

$\frac{792}{8} = 99$ (Completely divisible)

(b) 35 $\underline{112}$

$\frac{112}{8} = 14$ (Completely divisible)

(c) 35 $\underline{412}$

$\frac{412}{8} = 51.5$ (Not completely divisible)

(d) 35 $\underline{552}$

$\frac{552}{8} = 69$ (Completely divisible)

Hence, option (c) is not divisible by 8.

2. (c)

Let the first number is x and the second number is y then,

According to the question,

$$\frac{x}{4} = \frac{3}{8}y$$

$$x = \frac{3}{2}y \quad \text{... (i)}$$

And $x + 30 = 6y$ ... (ii)

Substituting the value of x from equation (i) in equation (ii)-

$$\frac{3}{2}y + 30 = 6y$$

$$\frac{3}{2}y - 6y = -30$$

$$\frac{-9y}{2} = -30$$

$$y = \frac{20}{3}$$

From equation (i)-

$$x = \frac{3}{2} \times \frac{20}{3}$$

$$x = 10$$

3. (b)

$$\frac{7}{9} = 0.777$$

$$\frac{6}{7} = 0.857$$

$$\frac{22}{25} = 0.88$$

$$\frac{11}{13} = 0.846$$

Hence, fraction $\frac{22}{25} = 0.88$ is the largest.

4. (b)

$0.1\bar{6} + 0.1\bar{5} - 0.1\bar{3}$

$$= \frac{16-1}{90} + \frac{15-1}{90} - \frac{13-1}{90}$$

$$= \frac{15}{90} + \frac{14}{90} - \frac{12}{90}$$

$$= \frac{15+14-12}{90}$$

$$= \frac{17}{90}$$

5. (b)

Let the fraction be x and its inverse be $\frac{1}{x}$.

According to the question,

$$x + \frac{1}{x} = 2\frac{25}{66} \text{-----(I)}$$

From option (b),

Putting the value $x = 1\frac{5}{6} = \frac{11}{6}$ in equation (I),

$$\frac{11}{6} + \frac{6}{11} = 2\frac{25}{66}$$
$$\Rightarrow \frac{121+36}{66} = 2\frac{25}{66}$$
$$\Rightarrow \frac{157}{66} = 2\frac{25}{66}$$
$$\Rightarrow 2\frac{25}{66} = 2\frac{25}{66}$$

Hence greatest fraction $= 1\frac{5}{6}$

6. (c)

Given,

$$\frac{2334}{33.1} = 261 \text{.....(1)}$$
$$\because \frac{23.34}{3.31} = \frac{2334}{331}$$
$$= \frac{2334}{33.1 \times 10}$$
$$= \frac{2334}{33.1} \times \frac{1}{10}$$
$$= \frac{261}{10} \quad \{\text{from equation (1)}\}$$
$$= 26.1$$

7. (c)

The LCM of the numbers 36, 54, 72 and 96 is

$36 = 2 \times 2 \times 3 \times 3$
$54 = 2 \times 3 \times 3 \times 3$
$72 = 2 \times 2 \times 2 \times 3 \times 3$
$96 = 2 \times 2 \times 2 \times 2 \times 2 \times 3$

Hence the LCM of 36, 54, 72, 96
$= 2\times2\times2\times 2 \times 2 \times 3 \times 3 \times 3$
$= 32 \times 27$
$= 864$

8. (a)

Let, three numbers = 4x, 5x, 7x
LCM = 140x
HCF = x
According to the question,
$140x = 5600$
$x = 40$
Hence, HCF of the number = 40

9. (a)

The LCM of given fractions,

LCM of 17, 34 and 48,

$17 = 1\times17$

$34 = 1\times2\times17$

$48 = 1\times2\times2\times2\times2\times3$

$LCM = 1\times2\times2\times2\times2\times3\times17 = 816$

HCF of 31, 62 and 93,

$31 = 1\times31$

$62 = 1\times2\times31$

$93 = 1\times3\times31$

$HCF = 1\times31 = 31$

So, the required LCM $= \frac{\text{The LCM of numerator}}{\text{The HCF of denominator}}$
$= \frac{816}{31}$

10. (c)

The number of factors of $a^x \times b^y \times c^z$
$\cdot (x+1)\times(y+1)\times(z+1)$ where a, b, c are prime numbers.
From options-
The number of factors of $100 = 2^2\times5^2 = (2+1)(2+1) = 9$
The number of factors of $36 = 2^2\times3^2 = (2+1)(2+1) = 9$
The number of factors of $64 = 2^6 = (6+1) = 7$
The number of factors of $16 = 2^4 = (4+1) = 5$
So, it is clear that the required smallest number with 7 factors exactly is 64.

11. (c)

Let, Number of boys = x
And, Number of girls = (x+16)
$\because$ x+x+16 = 64
2x = 48
x = 24
$\therefore$ Required Ratio $= \frac{24}{(24+40)} = \frac{3}{8}$
or 3 : 8

12. (c)

Let the sum of money Arun and Ahaan be ₹9x and ₹5x respectively.
According to the question,

$$\frac{9x-12}{5x+12} = \frac{4}{3}$$
$27x - 36 = 20x + 48$
$7x = 48 + 36$
$7x = 84$
$x = \frac{84}{7}$
$\boxed{x = 12}$

Hence the money with Arun = 9x
$= 9 \times 12$
$= ₹108$

13. (a)

Let the population of the city before the war be x.
According to the question,

$$x \times \frac{80}{100} \times \frac{95}{100} = 15200$$
$$x = \frac{15200\times100\times100}{80\times95}$$
$$x = \frac{15200000}{760}$$
$x = 20000$

14.(d)

Let the cost price of TV = ₹ 100

Then the cost price of washing machine = ₹ 60

Total cost price of 5 washing machine and 2TV

$= (5 \times 60 + 2 \times 100) = ₹\ 500$

Cost price of TV after conversion $= 100 \times \frac{90}{100} = ₹\ 90$

Cost price of washing machine after conversion

$= \frac{60 \times 118}{100} = ₹\ 70.8$

Total cost price of 5 washing machine and 2TV's after conversion = $(5 \times 70.8 + 90 \times 2) = ₹\ 534$

Difference = 534 – 500 = ₹ 34

Hence, increasing in percentage $= \frac{34}{500} \times 100 = 6.8\%$

15. (a)

Given,

Length of the three sides of a triangle

a = 12 cm, b = 15 cm, c = 21 cm

$\because$ Semi-perimeter(s) $= \frac{a+b+c}{2}$

$= \frac{12+15+21}{2}$

= 24 cm

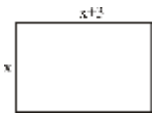
$\therefore$ Area of triangle (Δ) $= \sqrt{s(s-a)(s-b)(s-c)}$

$= \sqrt{24(24-12)(24-15)(24-21)}$

$= \sqrt{24 \times 12 \times 9 \times 3}$

$= 36\sqrt{6}\ cm^2$

16. (d)



Let, Breadth = x m

Length = x+3 m

According to the question,

Perimeter of rectangle = Area of rectangle

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

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

$4x+6 = x^2+3x$

$\Rightarrow \quad x^2–x–6 = 0$

$\Rightarrow \quad x^2–3x+2x–6 = 0$

$x(x–3) +2(x–3) = 0$

$(x–3)(x+2) = 0$

$x = 3, –2$

$\therefore$ Length = 3+ 3

= 6 m

Breadth = 3m

Diagonal $= \sqrt{\text{Length}^2 + \text{Breadth}^2}$

$= \sqrt{36+9}$

$= \sqrt{45} = 6.7 = 6$ (Integer part).

17. (c)

According to the question,

1 day's work of A $= \frac{1}{15}$ part

1 day's work of B $= \frac{1}{20}$ part

1 day's work of (A + B) $= \left(\frac{1}{20} + \frac{1}{15}\right)$

$= \frac{7}{60}$ part

Hence the time taken by A and B together to do the same work $= \frac{60}{7}$ days

$= 8\frac{4}{7}$ days

18. (c)

Time taken to complete the work by A = 24 days

Time taken to complete the work by B $= \frac{5}{2} \times 12$

= 30 days

According to the question,

Work done by A and B in 6 days

$\frac{6}{24} + \frac{6}{30}$

$= \frac{1}{4} + \frac{1}{5}$

$= \frac{5+4}{20}$

$= \frac{9}{20}$ part

So, remaining work = $1 - \frac{9}{20}$

$= \frac{11}{20}$

19. (b)

Initial speed of student = 8 km/h

Time = $\frac{3}{2}$ hours

Distance = Speed × Time

$= 8 \times \frac{3}{2} = 12\,km$

According to the question-

Let, the speed has increased by x km/h.

$12 - 1 = (x+8) \times \left(\frac{3}{2} - \frac{1}{2}\right)$

$11 = (x+8) \times \frac{2}{2}$

x = 3 km/h

Percentage increase in speed = $\frac{3}{8} \times 100 = 37.5\%$

20. (b)

Let the normal speed of train = x km/hr.

According to the question,

$$\frac{300}{x}-\frac{300}{x+5}=2$$

$$\frac{300(x+5)-300x}{x(x+5)}=2$$

$300x + 1500 - 300x = 2x^2 + 10x$

$2x^2 + 10x - 1500 = 0$

$x^2 + 5x - 750 = 0$

$x^2 + 30x - 25x - 750 = 0$

$x(x+30) - 25(x+30) = 0$

$(x+30)(x-25) = 0$

$x - 25 = 0$

$x = 25$

Hence the normal speed of train is 25 km/hr.

21. (b)

Let amount = ₹P

Given,

r = 5% yearly

n = 3 years

$$\text{C.I.} = P\left[\left(1+\frac{r}{100}\right)^n-1\right]$$

$$6305 = P\left[\left(1+\frac{5}{100}\right)^3-1\right]$$

$$6305 = P\left[\frac{21}{20}\times\frac{21}{20}\times\frac{21}{20}-1\right]$$

$$6305 = P\left[\frac{9261-8000}{8000}\right]$$

$$6305 = P\left[\frac{1261}{8000}\right]$$

$P = 5 \times 8000$

P = ₹40,000

$$\text{S.I.} = \frac{P\times r\times t}{100}$$

$$=\frac{40000\times5\times3}{100}=₹6000$$

22. (b)

Let Amount = A

According to the question,

$A_2 - A_1 = 4544$

$$\Rightarrow P\left(1+\frac{R_2}{100}\right)^{t_2}-P\left(1+\frac{R_2}{100}\right)^{t_1}=4544$$

$$\Rightarrow P\left(1+\frac{20}{100}\right)^4-P\left(1+\frac{40}{100}\right)^2=4544$$

$$\Rightarrow P\left(\frac{6}{5}\right)^4-P\left(\frac{7}{5}\right)^2=4544$$

$$\Rightarrow \frac{1296P}{625}-\frac{49P}{25}=4544$$

$$\Rightarrow \frac{1296P-1225P}{625}=4544$$

$$\Rightarrow 71P = 4544\times625$$

$$\therefore \quad P=\frac{4544\times625}{71}$$

Hence, P = ₹ 40000

23. (c)

Given,

$32 \times SP = 38 \times CP$

$$\Rightarrow \frac{SP}{CP}=\frac{38}{32}$$

Hence, P = 38 – 32

= 6

$$\text{Profit \%} = \frac{P\times100}{CP}$$

$$=\frac{6\times100}{32}$$

$$\therefore \quad P=\frac{75}{4}\% \text{ or } 18.75\%$$

24. (d)

Let the cost price of the item is x and the selling price is y then,

$$12.5=\frac{(x-y)\times100}{x}$$

$$22.5=\frac{(y+56-x)\times100}{x}$$

$$\text{or,}\quad 22.5=\frac{(y+56-x)\times100\times12.5}{(x-y)\times100}$$

$$\Rightarrow 22.5(x-y)=(y-x+56)\times12.5$$

$$\Rightarrow 9(x-y)=(y-x+56)\times5$$

$$\Rightarrow 9x-9y=5y-5x+280$$

$$\Rightarrow 14x-14y=280$$

$$\Rightarrow x-y=20$$

Now, $12.5=\frac{20\times100}{x}$ or $x=\frac{2000}{12.5}$ = ₹160

So, the cost price of the item = ₹ 160

Then, the selling price of the item for 25% profit

$$=\frac{25\times160}{100}+160=5\times8+160=40+160=₹200$$

25. (d)

$\left(1-\frac{1}{n}\right)+\left(1-\frac{2}{n}\right)+\left(1-\frac{3}{n}\right)+$ .....up to n terms

$= (1+1+1....\text{n term})-\left(\frac{1}{n}+\frac{2}{n}+\frac{3}{n}.....\frac{n}{n}\right)$

$= n-\left(\frac{1}{n}+\frac{2}{n}+\frac{3}{n}.....\frac{n}{n}\right)$

Where $\left(\frac{1}{n}+\frac{2}{n}+\frac{3}{n}.....\frac{n}{n}\right)$ is A.P.

So, difference $= \frac{2}{n}-\frac{1}{n}=\frac{1}{n}$

We know that,

Sum of n terms in A.P. $(S_n) = \frac{n}{2}\left[2a+(n-1)d\right]$

$= n-\left[\frac{n}{2}\left\{2\times\left(\frac{1}{n}\right)+(n-1)\left(\frac{1}{n}\right)\right\}\right]$

$= n-\left[\frac{n}{2}\left\{\left(\frac{2}{n}\right)+\left(\frac{n-1}{n}\right)\right\}\right]$

$= n-\left\{1+\frac{n}{2}\left(\frac{n-1}{n}\right)\right\}$

$= n-\frac{n+1}{2}$

$= \frac{n-1}{2}$

26. (d)

Left remainder is 22 if divide x^2+ax+b to x-3

$\therefore$ $x^2 + ax + b = 22$ (putting x = 3)

$9 + 3a + b = 22$

$3a + b = 13$ ....(i)

Left remainder is 24 if divide x^2+ax+b to x – 3

$x^2 + bx + a = 24$ (Putting x = 3)

$9 + 3b + a = 24$

$3b + a = 15$ ....(ii)

From equation (i) + (ii)

$4 (a + b) = 28$

$a+b = \frac{28}{4}$

$\boxed{a+b=7}$

27. (a)

$(\sin\theta + \text{cosec}\,\theta)^2 + (\cos\theta + \sec\theta)^2$

$= (\sin^2\theta + \text{cosec}^2\theta + 2\sin\theta.\ \text{cosec}\theta) + (\cos^2\theta + \sec^2\theta + 2\cos\theta.\sec\theta)$

$= \sin^2\theta + \text{cosec}^2\theta + 2 + \cos^2\theta + \sec^2\theta + 2$

$= \sin^2\theta + \cos^2\theta + \text{cosec}^2\theta + \sec^2\theta + 4$

$= 1 + 1 + \cot^2\theta + 1 + \tan^2\theta + 4$

$= 7 + \cot^2\theta + \tan^2\theta$ $\left\{\begin{array}{l}\because \text{cosec}^2\theta = 1+\tan^2\theta \\ \sec^2\theta = 1+\cot^2\theta\end{array}\right\}$

28. (b)

According to the question,

Let A = 4x, B = 3x, C = 5x

In ΔABC $4x + 3x + 5x = 180°$

$12x = 180°$

$x = 15°$

$A = 4 \times 15° = 60°$, $B = 3 \times 15 = 45°$

$C = 5 \times 15 = 75°$

29. (c)

According to the question,

$67 = \frac{33+x+47+83+109}{5}$

$335 = x + 272$

$x = 63$

Now,

$\frac{50+64+100+126+63}{5}$

$= 80.6$

30. (b)

Given,

Mean of 750 participants = 184 kg

and Median = 178 kg

Mode = ?

We know that, Mode = 3 Median – 2 Mean

$= 3 \times 178 – 2 \times 184$

$= 534 – 368$

$= 166$

31. (d)

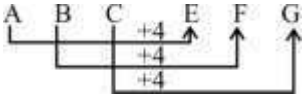
Just as, Newton discovered Gravity. Similarly, Telephone was invented by Graham Bell.

32. (b)

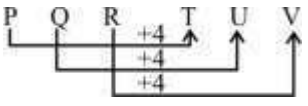
Just as, the heart is studied under cardiology, same as the kidney is studied under Nephrology.

33. (a)

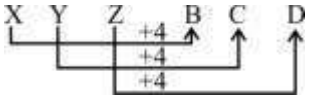
Just as,



and



Similarly, from option (a)-



Hence, XYZ is coded as BCD.

34. (b) Just as, Similarly,

35. (b)

The place value of each alphabet letter has been written in the sequence:

Just as,

$T \rightarrow 20$

$O \rightarrow 15$

$U \rightarrow 21$

$G \rightarrow 7$

$H \rightarrow 8$

and,

$P \rightarrow 16$

$L \rightarrow 12$

$E \rightarrow 5$

$A \rightarrow 1$

$D \rightarrow 4$

Same as,

C →	3
L →	12
O →	15
V →	22
E →	5

36. (c)

Just as,

S –6→ M
K –6→ E
I –6→ C
R –6→ L
T –6→ N

Same as,

B –6→ V
L –6→ F
O –6→ I
U –6→ O
S –6→ M
E –6→ Y

37. (c)

According to the question,

cip civ cin → life is good

cip cin er → love is life

∴ Love will be written as 'er'.

38. (c)

Just as,

Word →	F	I	S	H
	↓+1	↓+2	↓+3	↓+4
Code 4 ←	G	K	V	L

On writing ORANGE in the given code language,

O	R	A	N	G	E	
↓+1	↓+2	↓+3	↓+4	↓+5	↓+6	
P	T	D	R	L	K	

Hence, the word ORANGE has been written as PTDRLK via code 4.

39. (b)

Fear, Happiness and Anger are emotions whereas Intelligence is cognitive ability.

Hence option (b) is odd one.

40. (a)

Figure 'C' is different from other figures. So option (a) is correct.

41. (c)

The given series is as follows-

22 (+4) 23 (+4) 26 (+4) 27 (+4) 30 (+4) 31 (+4) 34

Hence (?) = 34

42. (d)

Just as,

From Column I,

$28 + 8 = 36 = (6)^2$

and, from Column II,

$63 + 18 = 81 = (9)^2$

Same as,

From Column III,

$94 + ? = (13)^2$

$94 + ? = 169$

$? = 169 - 94$

$? = 75$

43. (d)

According to the question,

▭ + ▭ + ▭ = 3 Rectangle = 12

Value of one rectangle = $\frac{12}{3} = 4$

⬠ + ⬠ + ⬠ = 3 Pentagon = 15

Value of one pentagon = $\frac{15}{3} = 5$

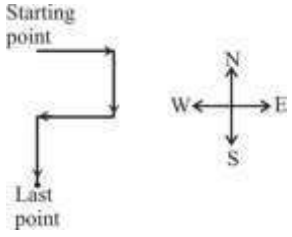
And ◯ + ◯ + ◯ = 3 circle = 6

Value of one circle $= \frac{6}{3} = 2$

Thus, ▭ + ⬠ + ◯ = 4 + 5 + 2 = 11

44. (b)

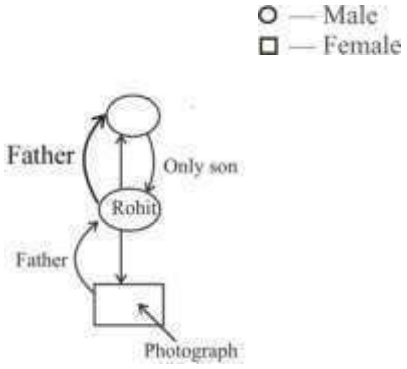
According to the question,



From the given figure, it is clear that Mahesh is in South direction after reaching at the school.

45. (c)

According to the question blood relation diagram is -



Hence, it is clear from the diagram that Rohit is the father of the girl in the photograph.

46. (a)

Given,

G = +

H = ×

J = –

K = ÷

125 J 110 K 5 G 7 H 2 = ?

On changing letters by mathematical symbol,

125 – 110 ÷ 5 + 7 × 2 = ?

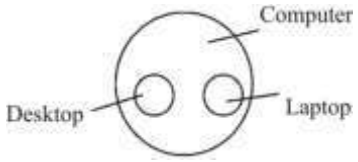
= 125 – 22 + 7×2

= 125 – 22+14

= 139 – 22 = 117

47. (d)

On drawing the Venn diagram according to the question,



Option (d) shows best relationship between Computer, Desktop and Laptops.

48. (d)

Region 'Q' represents those students who are musicians but not players.

49. (a)

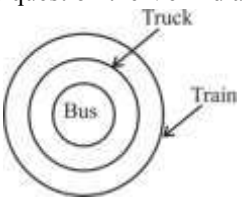
To be selected	not selected
P1, P6 or P4	P2
P2, P10, P11 or P13	P7
P2, P6, P12 or P11	P4
P8, P13,	P5

The relation of P_3 and P_9 is not mentioned but there is a total of 7 people to be selected. Then both of them will be in the team.

P1, P3, P4, P5, P8, P9, P13

50. (b)

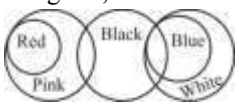
According to the question the Venn diagram is-



Hence, only conclusion II follows.

51. (d)

On making Venn diagram,



It is clear that only conclusion I and III are appropriate

52.(c)

According to statement only conclusion I follows.

53.(b)

At least 36 persons in the party.

= 12 (couple) + 12 (children)

= 24 + 12 = 36

54.(d)

According to the statement, both assumption I and II implicit. Hence, option (d) is correct.

55. (a)

Let ₹100 be the money lent at simple interest, then

According to statement 1,

$$\text{Simple interest} = \frac{100\times16\times6}{100}$$

Simple interest = ₹96

Amount = 100 + 96 = ₹196

According to the statement 2,

$$\text{Simple interest} = \frac{100\times18\times5}{100}$$

Simple interest = ₹90

Amount = 100 + 90 = ₹190

Hence, it is clear that statement (1) and statement (2) both are wrong.

56.(c)

Given, COMPARE

According to the question,

C	O	M	P	A	R	E
+1	–1	+1	+1	–1	+1	–1
D	N	N	Q	Z	S	D

[Vowels = –1, Consonants = +1]

Hence, it is clear from above letter D and N appear twice in the group.

57. (d)

Just as,

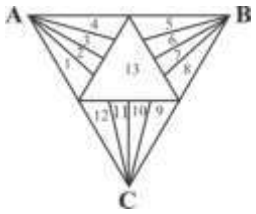
32 × 34 ≡ (3 × 3) & (2 + 4) ≡ 96

25 × 14 ≡ (2 × 1) & (5 + 4) ≡ 29

Same as,

18 × 51 ≡ (1 × 5) & (8 + 1) ≡ 59

58. (b)



Triangles made by 1 digits = 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13

Triangles made by two-digits = (1, 2) (2, 3) (3, 4) (5, 6) (6, 7) (7, 8) (9, 10) (10, 11) (11, 12)

Triangles made by 3 digits = (1, 2, 3) (2, 3, 4) (5, 6, 7) (6, 7, 8) (9, 10, 11) (10, 11, 12)

Triangles made by 4 digits = (1, 2, 3, 4) (5, 6, 7, 8) (9, 10, 11, 12)

Triangles made by every number = ΔABC

Total number of triangles = 13 + 9 + 6 + 3 + 1 = 32

59. (a)

Given that,

Today is Thursday

Now by converting 560 days into weeks and days

$\frac{560}{7} = 0$ odd days

$\therefore$ the number of odd days = 0

$\therefore$ The day after 560 days from today will be Thursday.

60. (b)

Total expenditure on decoration and D J

= 19 + 6 = 25%

$\because$ 100% = 32700

$$25\% = \frac{32700}{100} \times 25$$

= ₹ 8175

61. (c)

The Harappans procured materials for craft production in various ways:

They established settlements such as Nageshwar (Gujrat) and Balakot where shells were available.

A blue stone that was apparently very highly valued, and Lothal which was near sources of carnelian from Bharuch in Gujrat.

62. (b)

Prakrit was the Language used for the majority of Ashokan inscriptions, while these in the northeast of the subcontinent were in the Aramaic and Greek.

63. (a)

Book	Author	Language
1. Tirukkural	Thiruvalluvar	Tamil
2. Ratnavali	Harsha	Sanskrit
3. Rajatarangini	Kalhan	Sanskrit
4. Meghdoot	Kalidasa	Sanskrit

64. (c)

Goa was Portugal's first territorial possession in Asia, captured by Alfonso de Albuquerque with the help of Thimmayya. Goa became a Portuguese colony in 1510, when Admiral Afonso de Albuquerque defeated the Sultan of Bijapur, Yusuf Adil Shah. After defeating Adil Shah, it served as the main Portuguese base in the East for four and a half centuries. On 19 December, 1961 Goa was liberated and made a composite union territory with Daman and Diu. On 30 May, 1987, Goa was conferred statehood and Daman and Diu was made a separate union territory.

65. (a)

George Lemaitre is associated with discovery of the Big Bang Theory. Georges Edward Lemaitre was a Belgian astronomer and cosmologist. He was the first to propose the modern Big Bang Theory in 1927. According to the Big Bang Theory the expansion of the observable universe began with the explosion of a single particle at a definite point in time.

66. (a)

The term hermit kingdom is used to refer to any country, organization or society which fully walls itself off, either metaphorically or physically, from the rest of the world. The East Asian country of North Korea is commonly regarded as a prime example of a hermit kingdom, and the term is contemporarily used to describe that country.

67. (c)

Cape Comorin is known as Kanya Kumari. It is a Rocky headland on the Indian Ocean in Tamil Nadu state, forming the southernmost point of the subcontinent. It is the southern tip of the Cardamom Hills, an extension of the Western Ghats range along the west coast of India.

68. (b)

Sardar Swaran Singh Committee recommended inclusion of the Fundamental Duties in the Indian constitution in the year 1976. By 42nd constitutional amendment 10 fundamental duties were added to article 51a. Currently there are 11 fundamental duties.

69. (b)

In Constitution of India, Article 53 states that-

1. The executive power of the union shall be vested in the President and shall be exercised by him either directly or through officers sub ordinate to him in accordance with this constitution 53(1).

2. The Supreme command of the Defence forces of the Union shall be vested in the President and the exercise there of shall be regulated by law 53(2).

70. (d)

In July 1944, the Bretton Woods Conference was organized in Bretton Woods, New Hampshire United States under the guidance of Harry Dexter of the USA and John Maynard Keynes of England in which 44 countries participated. The purpose of this conference was to regulate the International monetary system financial disorder. After conference, global institutions such as International Monetary Fund (IMF), World Bank, World Trade Organization (WTO) were established.

71. (a)

Helio Swarm mission is a constellation or swarm at nine spacecraft. It will be launched to capture 1st multi scale in space measurements of fluctuations in magnetic field as well as motions of solar wind called as Solar wind turbulence. That will improve the understanding of the dynamics of Sun.

72. (b)

India is not a member of the Association of Southeast Asian Nations(ASEAN). ASEAN consists of 10 member countries viz. Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand, and Vietnam.

- Headquarters: Jakarta, Indonesia
- Founded: 8 August 1967, Bangkok, Thailand

73. (a)

The inputs used in the production of goods and services to make an economic profit are known as factors of production. Factors of production are inputs used in the production of goods or services to make an economic profit. These include any resource needed for the production or creation of a goods or service. The factors of production are land, labour, capital and entrepreneurship.

74. (c)

The SIDBI (Small Industries Development Bank of India) is a wholly-owned subsidiary of IDBI (Industrial Development Bank of India). It is established under the Special Act of the Parliament 1988 which became operative from April 2, 1990. SIDBI is the Principal financial Institution engaged in promotion, financing and development of the Micro, Small and Medium Enterprises (MSMEs) sector and coordination of the functions of the various institutions engaged in similar activities. Its headquarters is situated in Lucknow, Uttar Pradesh.

75. (c)

Bismillah Khan played the Shehnai on 15th August 1947 at the Red fort to celebrate the occasion of India's independence.

76. (a)

The National Library of India is located in Belvedere Estate, Alipore, Kolkata, India. It is India's largest library by volume and public record. It was established in 1836 as Culcutta Public library.

77. (a)

In India, 6 language universities exist as of June 2022.

(i) Shri Lal Bahadur Shastri Rashtriya Sanskrit Vidyapeeth, New Delhi
(ii) Rashtriya Sanskrit Vidyapeeth, Tirupati
(iii) English and Foreign Languages University, Hyderabad
(iv) Mahatma Gandhi Antarshtiya Hindi Vishwavidyalaya, Wardha
(v) Maulana Azad National Urdu University, Hyderabad
(vi) Rashtriya Sanskrit Santhan, New Delhi

78. (d)

Dree Festival is famous crop harvest festival celebrated in Arunachal Pradesh by Apatani tribe.

The Apatani is a tribal group living in the zero valley in lower Subansiri district of Arunachal Pradesh.

79. (a)

Rabindranath Tagore was the first Indian citizen to be awarded Nobel Prize in the field of Literature, and also first Asian to be awarded in 1913.

Here is the list of the nine Indian Nobel Prize winners till date:

1. Abhijit Banerjee for Economics, 2019
2. Kailash Satyarthi for Peace, 2014
3. Venkatraman Ramakrishnan for Chemistry, 2009
4. Amartya Sen for Economics, 1998
5. Subrahmanyan Chandrasekhar for Physics, 1983
6. Mother Teresa for Peace, 1979
7. Hargobind Khorana for Medicine, 1968
8. CV Raman for Physics, 1930

Note: The Nobel Prize is awarded in six categories each year -- Physics, Chemistry, Medicine, Literature, Economics, and Peace.

80. (b)

The book 'Lady Doctors: The Untold Stories of India's First Women in Medicine' is authored by Kavitha Rao.

81. (d)

Every year, Parakram Divas is celebrated on the birth anniversary of Netaji Subhash Chandra Bose. The Government of India decided to celebrate the birth anniversary of Netaji as Parakram Divas. Subhash Chandra Bose was born in Cuttak (Odisha) on January 23, 1897. Indian National Army (Azad Hind Fauj) was founded by him to overthrow British Empire from India.

82. (b)

Dada Saheb Phalke award is India's highest award in cinema. Presented first in 1969, the award was introduced by the government of India to commemorate Dada Saheb Phalke's contribution to Indian Cinema. Phalke is known as 'the father of Indian cinema' The first recipient of the award was actress Devika Rani. The prestigious Dada Saheb Phalke Award is honoured to Wahida Rahman for 2021 in September 2023.

83. (c)

The prototype of world's first 6G device has been presented by Japan. It works 20 times faster in comparison of 5G. This device is capable of covering an area of more than 300 feet at a speed of 100 Gps.

84. (a)

Economist Lawrence Wong took the oath of Singapore's fourth Prime Minister in May 2024. Lawrence Wong will take the place of former Prime Minister Lee Sun Lung. President Therman Shaumugaratnam administered the oath to Lawrence Wong.

85. (a)

Yellowstone National Park is an American national park located in the western United States, Yellowstone was the first national park in the U.S.A. and is also widely held to be the first national park in the world.

86. (d)

The S.I. unit of resistivity is ohm meter. Electrical resistivity is that property of material, that measures how strongly it resists electric current.

87. (a)

The energy contained in the static state is called potential energy. So, option (a) is incorrect. The kinetic energy is the additional energy of a body due to its linear velocity or angular velocity, or both. The kinetic energy is a scalar quantity, it has no direction. The kinetic energy of the body is expressed by K.E.

$$KE = \frac{1}{2}mv^2$$

88. (b)

The minimum velocity with which a body must be projected in vertically upward direction again gravitational pull and the body never come back to earth and go away in to the space, is called escape velocity.

Escape velocity of Earth (V_e) = 11.2 km/s

89.(b)

Boiling point of water is 100^oC or 212^0 Fahrenheit, freezing point of water is 0^0C or 32^0 Fahrenheit.

90. (b)

Camphor is found in solid state. It is a white coloured wax-like substance. It has a pungent smell. Ammonia is a colourless gas with a strong odor. It is lighter than air. This is most soluble in water.

91. (d)

John Dalton's presented his Atomic Theory in 1808, on conservation which was a turning point in the study of matter. John Dalton proposed that all matter was composed of atoms, indivisible and indestructible building blocks. While all atoms of an element were identical different elements had atoms of different size and mass.

92. (c)

Litmus is used as an indicator to distinguish between acid and base. Litmus solution is obtained from lichen. It is a water soluble mixture of different dyes. Light blue litmus paper turns red under acidic solution and red litmus paper turns into blue under basic or alkaline solution. It is measured in pH range, the neutral litmus paper is purple.

93.(d)

Ethology is the study of animal behavior. Entomology is the scientific study of insects. Etiology is the scientific study of causes of disease. Ethnology is the comparative study of two or more cultures.

94. (c)

Simple permanent tissues are composed of cells which are structurally and functionally similar. These tissues are made up of one type of cells. A few layers of cells beneath the epidermis are generally simple permanent tissue. Simple tissues are of three types, namely parenchyma, collenchyma and sclerenchyma.

Parenchyma – They are living cells, soft in nature due to the presence of thin-walled cells.

Collenchyma – These are characterized by uneven thick-walled living cells.

Sclerenchyma – They have cells with thickened lignified walls, providing them strength and making them waterproof.

95. (a)

Nomenclature, in biological classification, is the system of naming organisms. The species to which the organism belongs is indicated by two words, the genus and species names, which are latinized words derived from various sources. This system, which is called the Linnaean system of binomial nomenclature, was established in the 1750s by Carolus Linnaeus.

96. (b)

Millipedes are arthropod with thousand-legged invertebrates with an exoskeleton, a segmented body and joint appendages. Arthropods also have a hemocoel, an open body cavity in which blood flows and bathes the tissues and organs. Spider belongs to phylum Arthopoda.

97. (b)

Respiration involves chemical reactions that breakdown nutrient molecule in dividing cells to release energy. Respiration is basically of two types:

(1) Aerobic respiration, and

(2) Anaerobic respiration.

Aerobic respiration takes place in the presence of oxygen. Most of the reaction in aerobic respiration happen inside Mitochondria where one molecule of pyruvate breaks down to give three molecules of carbon dioxide. The amount of released energy in aerobic respiration is more than that in anaerobic respiration.

98. (c)

The amount of time it takes to move a character from the CPU or to the CPU from RAM is known as the memory access time.

99. (b)

Computer memory is made up of a large number of cells, each cell is capable of storing 1 bit of information in the form of binary numbers.

1 byte = 8 bit

100. (d)

The term Ecology was first used by Ernst Haeckel in 1866 in his book 'General morphology and their organisms'. He applied the term ecology to the 'relation of the animal both to its organic as well as its inorganic environment.

PRACTICE SET - 2

1. **If pq is a two-digit number, then pq – qp will be completely divisible by:**
(a) 9 (b) 7
(c) 6 (d) 5

2. **When 40 is subtracted from a number, it reduces to its 60%. What is the number?**
(a) 130 (b) 160
(c) 200 (d) 100

3. **Find the greatest fraction out of $-\frac{3}{2}, \frac{3}{2}, \frac{11}{4}, \frac{5}{2}$:**
(a) $\frac{3}{2}$ (b) $\frac{11}{4}$
(c) $\frac{5}{2}$ (d) $-\frac{3}{2}$

4. **2.666 … + 2.77 … in fraction form is:**
(a) $\frac{47}{9}$ (b) $\frac{29}{9}$
(c) $\frac{31}{9}$ (d) $\frac{49}{9}$

5. **The difference of a fraction and its inverse is $\frac{9}{11}$. Then the difference of cubes of the fraction and its inverse will be:**
(a) $-\frac{1331}{2538}$ (b) $-\frac{2538}{1331}$
(c) $\frac{3996}{1331}$ (d) $\frac{729}{1331}$

6. **Which of the following is correct?**
(a) $\frac{9}{16} \leq \frac{13}{24}$ (b) $\frac{9}{16} > \frac{13}{24}$
(c) $\frac{9}{16} = \frac{13}{24}$ (d) $\frac{9}{16} < \frac{13}{24}$

7. **The LCM of the numbers 70, 28 and 42 is :**
(a) 116 (b) 420
(c) 280 (d) 700

8. **Three containers contain 72 litres, 90 litres and 144 litres of milk respectively. What should be the biggest 'measuring -can', which can measure all the different quantities exactly (Without a remainder)?**
(a) 17 litres (b) 18 litres
(c) 11 litres (d) 13 litres

9. **If the product of two numbers, not necessarily distinct from each other, is 25 and their HCF is 5, then their LCM is :**
(a) 7 (b) 4
(c) 5 (d) 6

10. **If P is the largest number which, when divides 60, 150 and 285, gives the same remainder in each case, then find the sum of digits of p.**
(a) 7 (b) 5
(c) 4 (d) 9

11. **If 10% of x = 15% of y, then what will be the value of x : y ?**
(a) 2 : 3 (b) 2 : 1
(c) 3 : 2 (d) 1 : 2

12. **The ratio of two number are 5 : 9. If 6 is added in both numbers then their ratio become 2 : 3. The original number are.**
(a) 25, 45 (b) 10, 18
(c) 15, 27 (d) 5, 9

13. **The population of a town is 10,000. If the male population increases by 5% and the female population by 10%, the population will become 10,800. How much of the town's present population is female?**
(a) 7000 (b) 6000
(c) 8000 (d) 5000

14. **A man's income at first increased by 20% and later on increased again by 30%. Find the total percent increase.**
(a) 58 (b) 54
(c) 60 (d) 56

15. **The base of a right-angled triangle is 12 cm and the difference between the other two sides is 6 cm. What will be the perimeter of the triangle?**
(a) 30 cm (b) 54 cm
(c) 36 cm (d) 18 cm

16. **The difference between the length and breadth of a rectangle is 6 m. If its perimeter is 64 m, then its area is:**
(a) 256 sq. m. (b) 247 sq. m.
(c) 264 sq. m. (d) 238 sq. m.

17. **A man and a boy, working together, can finish a task in 24 days. If, for the last 6 days, the man works alone, then the task can be finished in 26 days. In how many days can the boy alone finish the task?**
(a) 72 (b) 54
(c) 48 (d) 36.

18. **Brij alone can paint a wall in 7.2 days while Madhu takes 10.8 days to do the same work. Working together how many days will they take to paint 5/6 part of the wall?**
(a) 4.2 (b) 3.6
(c) 3.9 (d) 4.8

19. **Two buses from a house run at a speed of 25 km/h at an interval of 15 minutes. How much more speed (km/h) does a woman coming from the opposite side of the house have to walk so that the buses meet at an interval of 10 minutes.**
(a) 12 (b) 12.25
(c) 12.5 (d) 12.75

20. **At a speed of 60 km/h a train crosses a pole in 33 s. Find the length of the train.**
(a) 550 m (b) 490 m
(c) 400 m (d) 495 m

21. **After 10 years the simple interest on a sum of money will be ₹600. If the principal is increased thrice after 5 years, what will be the total interest after 10 years?**
(a) ₹300 (b) ₹900
(c) ₹1200 (d) ₹600

22. **A person borrowed a sum of money at 9% simple interest and invested it at 10% compound interest for 3 years. After 3 years he received profit of ₹1952. How much money did he borrow?**
(a) ₹ 30000 (b) ₹ 32000
(c) ₹ 33000 (d) ₹ 32543

23. **Atulit buys an old bicycle for Rs. 4,000 and spends Rs. 400 for its repairs. If he sells the bicycle for Rs. 5,000, his percentage gain is:**
(a) $7\frac{13}{12}\%$ (b) $7\frac{13}{11}\%$
(c) $13\frac{1}{11}\%$ (d) $13\frac{7}{11}\%$

24. **A toy was bought for ₹1125 and sold at a loss of 16%. The selling price of the toy was.**
(a) ₹ 960 (b) ₹ 945
(c) ₹ 955 (d) ₹ 975

25. **Find the numbers if the arithmetic mean and the geometric mean of the two numbers are 7 and $2\sqrt{10}$ respectively.**
(a) 5, 4 (b) 2, 20
(c) 4,10 (d) 8,5

26. **If (2x-1) is a factor of $2x^4 - 7x^3 + x + k = 0$, then find the value of 'k'.**
(a) $\frac{1}{4}$ (b) $-\frac{5}{12}$
(c) 0 (d) $-\frac{1}{4}$

27. **Which of the following represents the right hand side (RHS) of the given equation ?**
$\sqrt{\frac{1+\sin A}{1-\sin A}} = ?$
(a) $\frac{1}{\text{cosec } A}$ (b) sec A + cot A
(c) sin A + cos A (d) sec A + tan A

28. **Angles A, B and C of a triangle are in arithmetic progression. M is a point on BC such that AM is perpendicular to BC. What is $\frac{BM}{AB}$?**
(a) $\frac{1}{2}$ (b) $\frac{3}{4}$
(c) $\frac{1}{3}$ (d) $\frac{1}{4}$

29. **If the mean of the following data is 15, then find the value of k.**

x	5	10	15	20	25
f	6	k	6	10	5

(a) 6 (b) 10
(c) 8 (d) 7

30. **Given below is the marks obtained by 20 students in mathmatics out of 30 marks.**
7, 9, 12, 12, 13, 12, 14, 14, 14, 14, 15, 16, 17, 18, 18, 19, 20, 18, 20, 13.Then (2 × median – mode) of the data is equal to:
(a) 14 (b) 18
(c) 12 (d) 0

31. **Select the option that is related to the third word in the same way as the second word is related to the first word.**
Shirt : Apparel :: Necklace :?
(a) Chain (b) Gold
(c) Jewellery (d) Neck

32. **'Hand' is related to 'Finger' in the same way as 'Pen' is related .....**
(a) Nib (b) Pencil
(c) Ink (d) Holder

33. **Select the option that is related to the fifth letter-cluster in the same way as the second letter-cluster is related to the first letter-cluster and the fourth letter-cluster is to the third letter-cluster.**
HUDK : KWGM :: RBNF : UDQH :: LPQV: ?
(a) OSTY (b) NRSX
(c) NSSY (d) ORTX

34. **Select the option that is related to the third number in the same way as the second number is related to the first number.**
9 : 729 = 11 : ?
(a) 1024 (b) 112
(c) 1331 (d) 991

35. **In a certain code language, if 'CELL' is coded as '32' and 'PHONE' is coded as '58', how will 'BOLD' be coded in that language?**
(a) 43 (b) 54
(c) 32 (d) 33

36. **In a certain code language, 'BUREAK' is written as 'PZVIFY'. What is the code for 'CASPTL' in that code language?**
(a) PHKGYX (b) OHKGZX
(c) PGKHYX (d) OGKHZX

37. **In a certain code language, 'she is beautiful' is written as 'mat mug bit', and 'beautiful and water' is written as 'bit cap lan'. How will 'beautiful' be written in that language?**
(a) bit (b) mug
(c) cap (d) mat

38. **If 67 = 1764 and 93 =729, then which of the given options will be the value of 74 = ?**
(a) 847 (b) 784
(c) 567 (d) 972

39. Three of the given four terms share a certain relationship whereas one is different. Select the one that is different.

Mike, Loudspeaker, Projector, Amplifier

(a) Loudspeaker (b) Amplifier
(c) Mike (d) Projector

40. Four figures have been given, out of which three are alike and one is different. Select the odd one.

(a)  (b) 

(c)  (d) 

41. Select the number from among the given options that will come next in the following series.

4, 16, 40, ?

(a) 68 (b) 98
(c) 48 (d) 88

42. To get the given result in the following equation what alternative set of mathematical symbols should be replaced by__?

(15?12) ?6?8 = 26

(a) –, ×, + (b) +, –, ÷
(c) +, – (d) +, –, ±

43. Select the correct set of symbols

63 7 5 4 = 49

(a) ×, –, ÷ (b) +, ÷, –
(c) +, –, ÷ (d) ÷, × , +

44. Dropu walked 4 m from points A towards the south-west and reached point B. Then she turned south-east and walked same distance to reach point C, and then she turned towards the north-east and walked 4m to reach Point D. Which direction does she need to turn to move towards Point B?

(a) North-west (b) East
(c) West (d) South-east

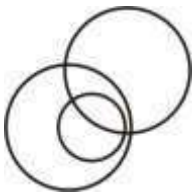
45. Rahul is the brother of Raj. Radha is the sister of Raman. Raj is the son of Radha. Then how is Rahul related to Radha?

(a) Nephew (b) Son
(c) Uncle (d) Brother

46. If P means ÷, Q means ×, R means + and S means – then the value of 14Q16P4R7S10 ?

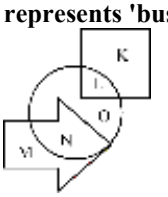
(a) 52 (b) 48
(c) 53 (d) 50

47. Select the option that correctly represents the following Venn diagram.



(a) Engineers, Graduates, Freelancers
(b) Engineer, Doctors, Graduates
(c) Doctor, Surgeon, Nurse
(d) Doctor, Freelancers, Engineers

48. In the given diagram, circle represents 'boxers' , square represents 'philosophers' and arrow represents 'business women'.



Which of the following letters represents boxers who are not men?

(a) N (b) L
(c) M (d) O

49. Given below is a paragraph. While S1 and S6 are the first and last sentences of this paragraph, the parts that are labelled 1, 2, 3 and 4 are jumbled up. Rearrange them to form a meaningful and coherent paragraph.

S1 : Several metro lines have been planned in the NCR.

1. Red line is the first among them.
2. They are expected to alleviate the problem of transportation.
3. It starts from Shahdara and terminates at Tis-Hazari in the initial phase.
4. It caters to over 1 lakh commuters at present.

S6: Hopefully, the public transportation problem will not be as acute after all the metro lines are completed.

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

50. Statements :

A. All humans are mechanic.

B. All mechanics are engineer.

Conclusions :

I. Some mechanics are humans.

II. Some engineers are mechanics.

(a) Neither conclusion I and Nor II follows
(b) Both conclusion I and II follow
(c) Only conclusion I follows
(d) Only conclusion II follows

51. Statement :

Some editors are writers. All actors are writers.

Conclusion :

I. Some editors are writers

II. No actor is an editor.

(a) Neither conclusion I nor II are true
(b) Only conclusion II is true
(c) Only conclusion I is true
(d) Either conclusion I or II are true

52. Read the given statement and conclusions carefully and decide which of the conclusions logically follow(s) from the statement.
Statement:
Company ABC has the highest number of customers as compared to its competitors.
Conclusions:
1. Company ABC has 58% of the total customers.
2. Company ABC's products are the cheapest in the market.
(a) Only conclusion 1 follows.
(b) Only conclusion 2 follows.
(c) Both conclusions 1 and 2 follow.
(d) Neither conclusion 1 nor 2 follows.

Direction : Read the given statement and conclusions carefully and decide which of the conclusions logically follow(s) from the statement.

53. Statement: P > Q ≤ C ≤ B = M > D
Conclusion:
I : M > Q
II : D ≤ Q
III : M = Q
IV : C < D
(a) Only I or III is correct
(b) Only I is correct
(c) None of the conclusion is correct
(d) Either only II or only IV is correct

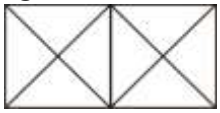
54. Consider the given statement and decide which of the given assumptions is/ are implicit in the statement.
Statement:
The electricity board has started going from home to home to collect bills.
Assumptions:
A. Electricity board considers going home to home an effective way to collect bills.
B. The electricity board has increased its focus on collecting bills.
(a) Only assumption A is implicit
(b) Neither A nor B is implicit
(c) Only assumption B is implicit
(d) Both A and B are implicit

55. Read the given statement and decide which of the following statements is sufficient to answer the question.
<u>Question:</u> I, O, L and H are standing in a circular shape. Who stands to the left of H?
<u>Statements:</u>
(1) I stands on the left of O and L stands on the left of I.
(2) L is wearing a green T-shirt.
(a) Only statement 2 is sufficient.
(b) Both statements 1 and 2 are insufficient.
(c) Both statements 1 and 2 are sufficient
(d) Only statement 1 is sufficient.

56. If each of the letter of the letter cluster 'DEHRAZUN' is arranged in alphabetical order, how many vowels will be immediately preceded by a consonant in the newly formed letter cluster?
(a) 0 (b) 3
(c) 1 (d) 2

57. A question is given followed by two arguments. Decide which of the arguments is/are strong with respect to the question.
Question
Should vegetarian food be banned in India?
I. No, it is cheap source of protein and other minerals and a lot of people can afford it
II. No, it will violate people's freedom.
(a) Both are strong
(b) Only I is strong
(c) Only argument II is strong
(d) None is strong

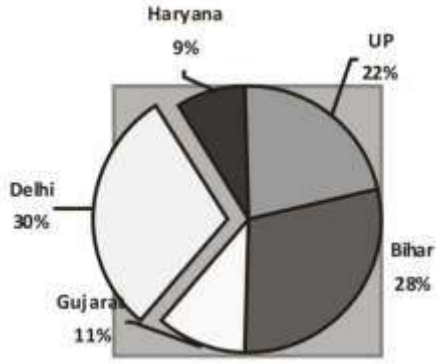
58. How many triangles are there in the following figures?



(a) 18 (b) 22
(c) 20 (d) 16

59. It was Thursday of February 1, 2007. What was the day of the week on February 2, 2006?
(a) Wednesday (b) Thursday
(c) Saturday (d) Friday

60. The given pie-chart shows the percentage distribution of the number of people from different provinces migrating to USA upon getting their green card. Study the pie-chart and answer the question.



What is the central angle of the sector corresponding to the number of people migrating from Delhi?
(a) 100.8° (b) 40°
(c) 108° (d) 32.4°

61. Which city from the Harappan Civilization was almost exclusively devoted to craft production including bead making, shell cutting, metal working, seal making and weight making?
(a) Mohenjo Daro (b) Nageshwar
(c) Harappa (d) Chanhudaro

62. With reference to the distribution of Ashokan inscriptions, which among the following sites is in the modern state of Gujarat?
(a) Sannati (b) Shishupalgarh
(c) Girnar (d) Kalsi

63. Who built the Lingraj Temple?
(a) Mughal Emperor Shah Jahan
(b) Rulers of the Rajput Chandela Dynasty
(c) King Yayati Keshri of Somavanshi
(d) King Anantawarman Chodaganga Deva

64. Who was the ruler of India at the inception of East India Company?
(a) Aurangzeb (b) Akbar
(c) Jahangir (d) Shahjahan

65. When three quarter of Moon is visible what is it called?
(a) Half Moon (b) Gibbous Moon
(c) New Moon (d) Full Moon

66. Which one is the capital city of France?
(a) Paris (b) Kathmandu
(c) Berlin (d) Londan

67. Which strip of water separates India and Sri Lanka?
(a) Strait of Lombok (b) Durand line
(c) Strait of Malacca (d) Palk Strait

68. The Constitution of India is republican, because-
(a) It provided provision for elected parliament.
(b) A Rights Bill has been incorporated in it.
(c) Provision of adult suffrage is provided in it.
(d) It has no hereditary component.

69. How long does the President's ordinance effect last for?
(a) One Year
(b) Two months
(c) Until the President cancel it
(d) Six months

70. The foundation day of the UN Charter was on:
(a) 29th October 1946 (b) 20th October 1932
(c) 21th October 1950 (d) 24th October 1945

71. Which of the following satellites is India's first dedicated multi-wavelength space observatory?
(a) AstroSat (b) IRS
(c) JUGNU (d) INSAT

72. Which institution is the country's premier organisation for literary discourse, publication and promotion, and the only one that does so in 24 Indian language, including English?
(a) Hindi Granth Academy
(b) English and Foreign Languages University
(c) Sahitya Akademi
(d) Indira Gandhi National Open University

73. Which economist has written the book "The General Theory of Employment, Interest and Money (1936)"?
(a) Vincent Crawford
(b) Adam Smith
(c) John Maynard Keynes
(d) Milton Friedman

74. Which of following is NOT a part of the nine pillars of 'Digital India', a campaign launched by the Government of India?
(a) Jan-Dhan Yojna
(b) Universal Access to Mobile Connectivity
(c) Broadband Highways
(d) Electronics Manufacturing

75. Which of the following films is directed by Satyajit Ray?
(a) Pyaasa (b) Mahal
(c) Pather Panchali (d) Kora Kagaz

76. Where is Tawang Monastery located?
(a) Assam (b) Nagaland
(c) Arunachal Pradesh (d) Mizoram

77. Identify the name of the fellowship that is launched by the Department of Science and Technology (DST), Government of India, to recognise, encourage and support translational research by Indian nationals.
(a) CV Raman Technology Innovation National Fellowship
(b) Dr. Homi Jahangir Bhabha Technology Innovation National Fellowship
(c) Vikram Sarabhai Technology Innovation National Fellowship
(d) Abdul Kalam Technology Innovation National Fellowship

78. During which of the following festivals is the Puli Kali (Tiger dance) event the main attraction?
(a) Onam (b) Baisakhi
(c) Bihu (d) Pongal

79. Which Indian won the Nobel Prize for peace in 2014?
(a) Kailash Satyarthi (b) Malala Yousafzai
(c) Sanjeev Chaturvedi (d) Anshu Gupta

80. Who is the writer of the Hindi play Adhe Adhure?
(a) Nirala (b) Pant
(c) Mohan Rakesh (d) Premchand

81. When is United Nations World Environment Day celebrated?
(a) On 10 December every year.
(b) On 5 June every year.
(c) On 5 September every year.
(d) On 10 June every year.

82. Which of the following books won the Man Booker International Prize in the year 2019?
(a) Two Virgins
(b) The Golden Gate
(c) Celestial Bodies
(d) Midnight's Children

83. Which Indian state has started the 'Bahan-Beti Swavlamban Protsahan Yojana' in June, 2024?
(a) Madhya Pradesh (b) Gujarat
(c) Jharkhand (d) Bihar

84. Who became the brand ambassador of Green Day's 'Better Nutrition' brand in June, 2024 ?
(a) Saina Nehwal
(b) PV Sindhu
(c) Aakarshi Kashyap
(d) Anupama Upadhyay

85. Which of the following National Park is not in India?
(a) Anshi National Park
(b) Shandur National Park
(c) Dachigam National Park
(d) Balpakram National Park

86. The SI unit of sound wave frequency was named in honour of which physicist?
(a) Werner Karl Heisenberg
(b) Heinrich Rudolf Hertz
(c) Albert Einstein
(d) J C Maxwell

87. An object of 1kg is dropped to the ground from a height of 30m. What is the work done by the force of gravity ? ($g = 10\ m/s^2$)
(a) 10J (b) 300J (c) 0.33J (d) 30J

88. The force of attraction applied between molecules of the same substance is called:
(a) cohesive force (b) adhesive force
(c) capillarity (d) surface tension

89. Which of the following are electromagnetic waves ?
(a) Alpha rays (b) Audible waves
(c) X-rays (d) β-rays

90. Which law in science does not follow the properties of a mixture.
(a) The components of the mixture retain their properties.
(b) Mixture can be of different substances
(c) It is separated by physical method.
(d) Its structure is fixed

91. The nucleus of a hydrogen atom is made up of?
(a) Only 1 proton
(b) Protons, neutrons and electrons
(c) 2 electrons and 1 proton
(d) There is nothing in it

92. Which one of the following has a similarity between acids and bases?
(a) They are used as preservatives
(b) They have pH less than 7
(c) Process of mixing acid or base with water is exothermic
(d) They are bitter

93. The study of fertilization, development, division and variation is known as:
(a) Embryology (b) Physiology
(c) Genetics (d) Evolution

94. Which of the following statements about plant tissue is INCORRECT?
(a) Xylem transports water and minerals.
(b) Xylem and phloem are complex tissues.
(c) Phloem transports food from leaves to other parts of the plant.
(d) Materials can move in both directions in xylem.

95. In which Kingdom would you place all organisms, which are multicellular eukaryotic nucleus with cell walls?
(a) Protista (b) Plantae
(c) Monera (d) Animalia

96. Youngones of crocodile is called:
(a) Codling (b) Gosling
(c) Fingerlings (d) Hatchling

97. Some features of a respiratory surface in animals are mentioned below. Select the INCORRECT option.
(a) Presence of a mechanism for moving air in and out of this area
(b) Is very thick
(c) Has a large surface area
(d) Usually placed inside the body

98. Which of the following chemical element, Tetravalent Metalloids, is used to make an integrated circuit (IC) chip used in computers?
(a) Gold (b) Silver
(c) Silicon (d) Copper

99. Which of the following is NOT an internal part of the computer?
(a) RAM (b) Motherboard
(c) Video card (d) Flash drive

100. Which of the following is in the third trophic level of the food chain?
(a) Producers
(b) Top consumers
(c) Secondary consumers
(d) Primary consumers

SOLUTION : PRACTICE SET- 2

ANSWER KEY

1. (a)	11. (c)	21. (c)	31. (c)	41. (d)	51. (c)	61. (d)	71. (a)	81. (b)	91. (a)
2. (d)	12. (b)	22. (b)	32. (a)	42. (a)	52. (d)	62. (c)	72. (c)	82. (c)	92. (c)
3. (b)	13. (b)	23. (d)	33. (d)	43. (d)	53. (a)	63. (c)	73. (c)	83. (c)	93. (a)
4.(d)	14. (d)	24. (b)	34. (c)	44. (c)	54. (d)	64. (b)	74. (a)	84. (b)	94. (d)
5. (c)	15. (c)	25. (c)	35. (d)	45. (b)	55. (d)	65. (b)	75. (c)	85. (b)	95. (b)
6. (b)	16. (b)	26. (a)	36. (d)	46. (c)	56.(d)	66. (a)	76. (c)	86. (b)	96. (d)
7. (b)	17. (a)	27. (d)	37. (a)	47. (a)	57. (a)	67. (d)	77.(d)	87. (b)	97. (b)
8. (b)	18. (b)	28. (a)	38. (b)	48. (a)	58. (a)	68. (d)	78. (a)	88. (a)	98.(c)
9. (c)	19.(c)	29. (c)	39. (d)	49. (d)	59. (b)	69. (d)	79.(a)	89. (c)	99. (d)
10. (d)	20. (a)	30. (a)	40. (b)	50. (b)	60. (c)	70. (d)	80. (c)	90. (d)	100. (c)

SOLUTION

1. (a)

Let the two digit number (pq) = 10x + y

Then, qp = 10y + x

According to the question,

pq − qp

= 10x + y – (10y + x)

= 10x + y – 10y – x

= 9x – 9y

= 9 (x – y)

Hence pq – qp will be completely divisible by 9.

2. (d)

Let the number is x

According to the question,

$$x - 40 = x \times \frac{60}{100}$$

$$x - \frac{60x}{100} = 40$$

$$\frac{40x}{100} = 40$$

$$x = 100$$

3. (b) Given

$$-\frac{3}{2} = -1.5$$

$$\frac{3}{2} = 1.5$$

$$\frac{11}{4} = 2.75$$

$$\frac{5}{2} = 2.5$$

Hence, It is clear that greatest fraction is $\frac{11}{4}$

4.(d)

2.666 ..... + 2.77.....

$$= 2.\bar{6} + 2.\bar{7}$$

$$= 2 + \frac{6}{9} + 2 + \frac{7}{9}$$

$$= 4 + \frac{6+7}{9}$$

$$= 4 + \frac{13}{9}$$

$$= \frac{36+13}{9} = \frac{49}{9}$$

5. (c)

Let the fraction be $\frac{x}{1}$, then its inverse will be $\frac{1}{x}$,

According to the question,

$$\frac{x}{1} - \frac{1}{x} = \frac{9}{11}$$

$$\Rightarrow x - \frac{1}{x} = \frac{9}{11}$$

On cubing both side,

$$x^3 - \frac{1}{x^3} = \left(\frac{9}{11}\right)^3 + 3 \times \frac{9}{11} \quad \left[a^3 - b^3 = (a-b)^3 + 3ab(a-b)\right]$$

$$= \frac{729}{1331} + \frac{27}{11}$$

$$= \frac{729 + (27 \times 121)}{1331} = \frac{729 + 3267}{1331}$$

$$\therefore x^3 - \frac{1}{x^3} = \frac{3996}{1331}$$

6. (b)

From options,

(a) $\frac{9}{16} \le \frac{13}{24} = 0.56 \le 0.54$ (wrong)

(b) $\frac{9}{16} > \frac{13}{24} = 0.56 > 0.54$ (right)

(c) $\frac{9}{16} = \frac{13}{24} = 0.56 = 0.54$ (wrong)

(d) $\frac{9}{16} < \frac{13}{24} = 0.56 < 0.54$ (wrong)

7. (b)

LCM of (70, 28, 42)

2	70, 28, 42
2	35, 14, 21
3	35, 7, 21
5	35, 7, 7
7	7, 7, 7
	1, 1, 1

Hence LCM of 70, 28 and 42 = 2 × 2 × 3 × 5 × 7
= 420

8. (b**)**

Capacity of the largest 'Measuring Can' = HCF of 72, 90 and 144 litres.

72 = 2×2×2×3×3

90 = 2×3×3×5

144 = 2×2×2×2×3×3

HCF = 18

Hence, the capacity of the largest 'Measuring Can' is 18 litres.

9. (c)

Let the numbers 5x and 5y

$5x \times 5y = 25$

$xy = \frac{25}{25} = 1$

Therefore, the value of x and y each will be 1 then LCM of the numbers 5x and 5y = 5x and 5y = 5 × 1 = 5

10. (d**)**

The required number = The HCF of (150 – 60), (285 – 150) and (285 – 60)

∴ HCF of 90, 135 and 225 =

$90 = 2 \times \underline{3 \times 3 \times 5}$

$135 = 3 \times \underline{3 \times 3 \times 5}$

$225 = \underline{3 \times 3 \times 5} \times 5$

HCF = 3 × 3 × 5 = 45

So, the required sum = 4 + 5 = 9

11. (c)

$x \times \frac{10}{100} = y \times \frac{15}{100}$

$10x = 15y$

$\frac{x}{y} = \frac{15}{10}$

$\frac{x}{y} = \frac{3}{2}$

x : y = 3 : 2

12. (b)

Let the numbers are 5x and 9x respectively.

According to the question,

$\frac{5x+6}{9x+6} = \frac{2}{3}$

$15x + 18 = 18x + 12$

$6 = 3x$

$x = 2$

Original numbers = 5 × 2 and 9 × 2
= 10 and 18

13. (b)

Let, the number of males = x

And the number of females = (10, 000 – x)

According to the question-

105% of x + 110% of (10, 000 – x) = 10800

$x \times \frac{105}{100} + (10,000 - x) \times \frac{110}{100} = 10800$

$\frac{21}{20}x + (10,000 - x) \times \frac{22}{20} = 10800$

$21x + 220000 - 22x = 10800 \times 20$

$22x - 21x = 220000 - 216000$

$x = 4000$

Hence, the present number of females
= (10,000 – 4000)
= 6000

14. (d**)**

According to the question,

Percentage increased = $(x \pm y \pm \frac{x \times y}{100})\%$

$20 + 30 + \frac{20 \times 30}{100} = 56\%$

15. (c)

According to the question,

b = 12 cm

c – a = 6 cm

c = a + 6

∵ $a^2 + b^2 = c^2$

$b^2 = c^2 - a^2 = (c + a)(c - a)$

$144 = (c + a) \times 6$

$144 = 6c + 6a$

$144 = 6(6 + a) + 6a$

$144 = 36 + 12a$

a = 9 cm

c – a = 6

c – 9 = 6

c = 15 cm

Hence the perimeter of the triangle = a + b + c
= 9 + 12 + 15
= 36 cm

16. (b)

Let the length of rectangle = x m

Breadth = (x –6) m

∵ Perimeter = 64 m

2(x + x – 6) = 64

2x – 6 = 32

2x = 38

x = 19

∴ Area of rectangle = x × (x – 6)
= 19 × (19 – 6)
= 19 ×13 = 247 square meter

17. (a)

Let, boy completed work in x days and man completed in y days.

According to the question,

$$\frac{1}{x}+\frac{1}{y}=\frac{1}{24} \quad -----(1)$$

$$\frac{20}{x}+\frac{26}{y}=1-----(2)$$

On subtracting equation (2) from equation (1) × 26

$$\frac{26}{x}+\frac{26}{y}=\frac{26}{24}$$

$$\frac{20}{x}+\frac{26}{y}=1$$

$$\frac{-\quad -\quad -}{\frac{6}{x}=\frac{2}{24}}$$

$$x = 72$$

Hence, the boy alone can finish the task in 72 days.

18. (b)

Let they take t days to paint the 5/6 part of the wall.

According to the question,

$$\Rightarrow \frac{t}{7.2}+\frac{t}{10.8}=\frac{5}{6}$$

$$\Rightarrow \frac{10t}{72}+\frac{10t}{108}=\frac{5}{6}$$

$$\Rightarrow \frac{30t+20t}{216}=\frac{5}{6}$$

$$\Rightarrow \frac{50t}{216}=\frac{5}{6}$$

$$\Rightarrow t=\frac{5\times 216}{6\times 50}$$

$$\Rightarrow t=\frac{36}{10}$$

$$\boxed{t = 3.6\,\text{days}}$$

19.(c)

Speed of bus = 25 km./hr.

Let the speed of woman = x km/h

Distance = D, Time = 15 minutes $=\frac{15}{60}=\frac{1}{4}$ hours

then new time interval = 10 minutes $=\frac{10}{60}=\frac{1}{6}$ hours

Then relative speed $(S)=\frac{D}{T}$

$\Rightarrow$ $D = S\times T$

$$D=25\times\frac{1}{4}$$

$\because$ $$D=\frac{25}{4} \quad .....(i)$$

$$D=\frac{25+x}{6} \quad .....(ii)$$

From equation (i) and equation (ii)

$$\frac{25+x}{6}=\frac{25}{4}$$

$$25+x=\frac{150}{4}$$

$$x=\frac{150}{4}-25$$

$$x=\frac{150-100}{4}$$

$$x=\frac{50}{4}$$

Speed of woman (x) = 12.5 Km./hr.

20. (a)

Speed of Train = 60 km/h

$$=\frac{60\times 5}{18}=\frac{50}{3}\text{m/s}$$

$\because$ Distance covered by train in 1 second $=\frac{50}{3}$ m.

$\because$ Distance covered by train in 33 seconds

$$=\frac{50}{3}\times 33=550\,\text{m.}$$

Hence, length of train = 550 m.

21. (c)

Simple interest of 10 years $=\frac{P\times R\times T}{100}$

$$\therefore 600=\frac{P\times R\times 10}{100}\Rightarrow PR = 6000$$

According to the question,

Total simple interest = SI_1 for Five years + SI_2 for next five years

$$=\frac{5\times P\times R}{100}+\frac{5\times 3P\times R}{100}=PR\frac{20}{100}$$

$$=6000\times\frac{20}{100}=1200$$

Total Simple interest = ₹1200

22. (b)

Suppose borrowed amount = ₹ x

Compound interest = Total Amount − Principal

Profit = Compound interest − Simple interest

As per the question,

$$x\left[\left(1+\frac{10}{100}\right)^3-1\right]-\left[\frac{x\times 9\times 3}{100}\right]=1952$$

$$\Rightarrow x\left[\left(\frac{11}{10}\right)^3-1\right]-\left[\frac{x\times 9\times 3}{100}\right]=1952$$

$$\Rightarrow x\left[\frac{1331}{1000}-1\right]-\left[\frac{x\times 9\times 3}{100}\right]=1952$$

$$\Rightarrow x\left[\frac{1331-1000}{1000}\right]-\left[\frac{x\times 9\times 3}{100}\right]=1952$$

$$\Rightarrow x\left[\frac{331}{1000}\right]-\frac{27x}{100}=1952$$

$$\Rightarrow \frac{x(331-270)}{1000}=1952$$

$$\Rightarrow \frac{x\times 61}{1000}=1952$$

$$\Rightarrow x=32\times 1000=₹32000$$

23. (d)

Cost price of the bicycle for Atulit = 4000 + 400 = ₹4400

Selling price of the bicycle = ₹5000

Profit = 5000 – 4400

= ₹600

$$\text{Profit \%}=\frac{600}{4400}\times 100$$

$$=\frac{600}{44}$$

$$=\frac{150}{11}$$

$$=13\frac{7}{11}\%$$

24. (b)

Given-

The cost price (CP) of the toy = ₹ 1125

Loss = 16%

Selling price (SP) = ?

Formula, $\left[\text{C.P.}=\frac{\text{S.P.}}{(100-\text{Loss})}\times 100\right]$

$$\Rightarrow \quad 1125=\frac{SP}{84}\times 100$$

$$\Rightarrow \quad SP=\frac{1125\times 84}{100}$$

$$SP=\frac{94500}{100}=₹945$$

25. (c)

Let two numbers be a and b.

Arithmetic mean of both numbers $=\frac{a+b}{2}$

Geometric mean $=\sqrt{ab}$

According to the question,

$$\frac{a+b}{2}=7$$

a + b = 14 ....(i)

and $\sqrt{ab}=2\sqrt{10}$

ab = 40 ...(ii)

On solving equation (i) and (ii),

$$a+\frac{40}{a}=14$$

$$\frac{a^2+40}{a}=14$$

$$a^2+40=14a$$

$$a^2-14a+40=0$$

$$a^2-10a-4a+40=0$$

$$a(a-10)-4(a-10)=0$$

$$(a-10)(a-4)=0$$

a = 10 or 4

a = 10

b = 4

Hence the numbers are 4 and 10.

26. (a)

According to the question-

$$2x^4-7x^3+x+k=0 \qquad \text{... (1)}$$

$\because$ Equation (1) is divisible by (2x – 1)

Hence, $2x-1=0 \Rightarrow x=\frac{1}{2}$

On putting the value of x in equation .....(i)

$$2\times\left(\frac{1}{2}\right)^4-7\times\left(\frac{1}{2}\right)^3+\frac{1}{2}+k=0$$

$$\frac{1}{8}-\frac{7}{8}+\frac{1}{2}+k=0$$

$$-\frac{2}{8}=-k$$

$$\boxed{k=\frac{1}{4}}$$

27. (d)

Given

$$=\sqrt{\frac{1+\sin A}{1-\sin A}}$$

$$=\sqrt{\frac{1+\sin A}{1-\sin A}\times\frac{1+\sin A}{1+\sin A}}$$

$$=,\sqrt{\frac{(1+\sin A)^2}{(1-\sin^2 A)}}$$

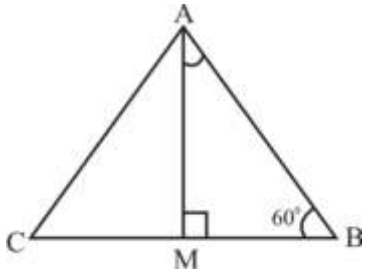
$$=\sqrt{\frac{(1+\sin A)^2}{\cos^2 A}}$$

$$=\frac{1+\sin A}{\cos A}$$

$$=\frac{1}{\cos A}+\frac{\sin A}{\cos A}$$

= secA + tanA

28. (a)



According to the question,

Because angle A, B and C are in arithmetic progression

$A + C = 2B$ – – – – (1)

$A + B + C = 180°$ – – (2)

(On Substituting the value of A + C from equation (1))

$2B + B = 180°$

$3B = 180°$

$B = 60°$

$\cos 60° = \frac{BM}{AB}$ $\left(\frac{\text{Base}}{\text{Hypotenuse}}\right)$

$\frac{1}{2} = \frac{BM}{AB}$

29. (c)

x	f	f ×x
5	6	30
10	k	10k
15	6	90
20	10	200
25	5	125
$\Sigma f = 27 + k$		$\Sigma f.x. = 445 + 10k$

$$\text{Mean} = \frac{445+10k}{27+k} = 15$$

$405 + 15k = 445 + 10k$

$k = 8$

30. (a)

On arranging the given number in ascending order

7, 9, 12, 12, 12, 13, 13, 14, 14, 14, 14, 15, 16, 17, 18, 18, 18, 19, 20, 20

$n = 20(\text{even})$

$$\text{Median} = \frac{\left(\frac{n}{2}\right)^{th}\text{term} + \left(\frac{n+2}{2}\right)^{th}\text{term}}{2}$$

$$= \frac{\left(\frac{20}{2}\right)^{th}\text{term} + \left(\frac{20+2}{2}\right)^{th}\text{term}}{2}$$

$$= \frac{10^{th}\text{ term} + 11^{th}\text{ term}}{2}$$

$$= \frac{14+14}{2} = 14$$

Mode = 14

$\therefore$ 2×Median – Mode = 2× 14 – 14 = 14

31. (c)

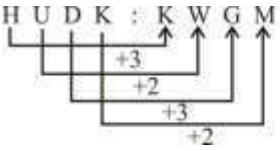
Just as, a Shirt is an Apparel. Similarly, Necklace is a 'Jewellery'. Hence option (c) is correct.

32. (a)

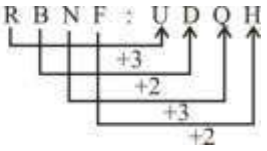
Just as, the work of the fingers in the hand is to hold the objects, in the same way the work of the nib in the pen is to write.

33. (d)

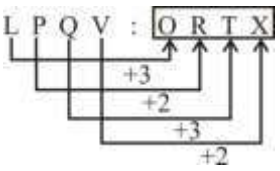
Just as,



And,



Same as,



34. (c)

Just as,

$(9)^3 \rightarrow 729$

Same as,

$(11)^3 \rightarrow 1331$

35. (d)

Just as,

C E L L

↓ ↓ ↓ ↓

3 5 12 12 $\Rightarrow$ 3 + 5 + 12 + 12 = 32

And,

P H O N E

↓ ↓ ↓ ↓ ↓

16 8 15 14 5 $\Rightarrow$ 16 +8 + 15 + 14 + 5= 58

Same as,

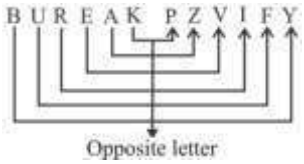
B O L D

↓ ↓ ↓ ↓

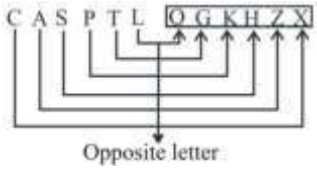
2 15 12 4 $\Rightarrow$ 2 + 15 + 12 + 4 = 33

36. (d)

Just as,



Same as,



37. (a)

According to the question,

she is beautiful → mat mug bit

beautiful and water → bit cap lan

Hence, it is clear from above code that 'beautiful' will be written as 'bit'.

38. (b)

Just as,

$$67 = (6\times7)^2 = 1764$$

And,

$$93 = (9\times3)^2 = 729$$

Same as,

$$74 = (7\times4)^2 = 784$$

39. (d)

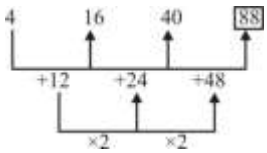
Mike, Loudspeaker and Amplifier used for recording sounds or for making voice louder, while Projector is a piece of equipment for projecting photographs, movies or computer slides onto a screen. Hence, option (d) is different one.

40. (b)

In the given diagrams, three figures are same except figure option (b). Hence, it is clear that option (b) is odd one.

41. (d)

The given series is as follows -



Hence, ? = 88

42.(a)

Given,

$$(15\ ?\ 12)\ ?\ 6\ ?\ 8 = 26$$

On putting the signs from option (a),

$$(15 - 12) \times 6 + 8 = 26$$

$$3 \times 6 + 8 = 26$$

$$18 + 8 = 26$$

$$26 = 26$$

43. (d)

Given,

$$63\ 7\ 5\ 4 = 49$$

From option (a),

$$63 \times 7 - 5 \div 4 = 49$$

$$\Rightarrow 441 - \frac{5}{4} = 49$$

$$\Rightarrow \frac{1764-5}{4} = 49 \quad = \frac{1759}{4} \neq 49$$

From option (b),

$$63 + 7 \div 5 - 4 = 49$$

$$\Rightarrow 63 + \frac{7}{5} - 4 = 49$$

$$\Rightarrow \frac{315+7-20}{5} = 49$$

$$\Rightarrow \frac{302}{5} \neq 49$$

From option (c),

$$63 + 7 - 5 \div 4 = 49$$

$$\Rightarrow 70 - \frac{5}{4} = 49$$

$$\Rightarrow \frac{280-5}{4} = 49$$

$$\Rightarrow \frac{275}{4} \neq 49$$

From option (d),

$$63 \div 7 \times 5 + 4 = 49$$

$$\Rightarrow 9 \times 5 + 4 = 49$$

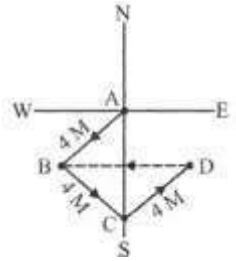
$$\Rightarrow 45 + 4 = 49$$

$$\Rightarrow 49 = 49$$

Hence option (d) is correct.

44. (c)

The sequence of Dropu's path is as follows:



So, it is clear by the figure that last place of Dropu is D and she will have to go west to reach B from D.

45. (b)

According to the question, blood relation diagram is as follows.

From the given blood relation diagram it is clear that Rahul is the son of Radha.