

Non-Technical Popular Categories

RRB NTPC

**Graduate and Under-Graduate Level
(Computer Based Test)**

Solved Papers (VOLUME-2)

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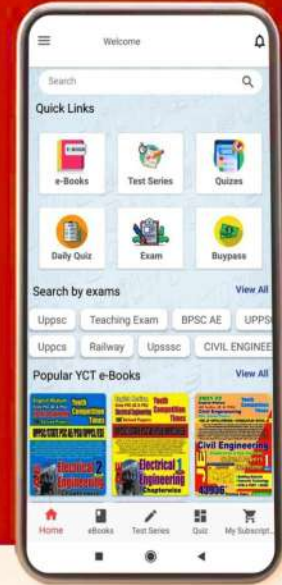
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Railway Non-Technical Popular Categories Exam - 2019

Graduate and Under-Graduate Level

[Ist Stage Computer Based Test]

Exam Date : 29.12.2020]

[Time : 03:00 pm-04:30 pm

1. What is the pH value of lemon Juice approximately?

(a) 9 (b) 2
(c) 12 (d) 7

Ans. (b) : Lemon Juice in its natural state is acidic with a pH of about 2, but once metabolized it actually becomes alkaline with a pH well above 7. pH is a measure of hydrogen ion concentration, a measure of the acidity or alkalinity of a solution.

2. The value of $\sqrt{72 \times 18} + \sqrt{0.04} + \sqrt{0.64}$ is :

(a) 24 (b) 12
(c) 36 (d) 37

Ans. (d) : $\sqrt{72 \times 18} + \sqrt{0.04} + \sqrt{0.64}$
 $= \sqrt{9 \times 8 \times 2 \times 9} + 0.2 + 0.8$
 $= 9 \times 4 + 1 = 36 + 1 = 37$

3. Which among the following is Not a UNESCO World Heritage Site ?

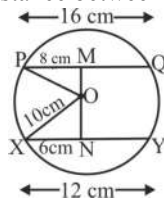
(a) Ajanta Caves, Aurangabad
(b) Rani ki vav, Patan
(c) Jantar Mantar, New Delhi
(d) Sun Temple, Konark

Ans. (c) : There are 40 UNESCO World Heritage Sites in India → 32 cultural, 7 natural and 1 mixed property. The Oldest World Heritage Site in India is Ajanta Caves (2nd century BC to the 6th Century AD).

4. A circle of radius 10 cm has XY and PQ parallel chords of 12 cm and 16 cm each. Both the chords are at opposite from centre. Find the distance between chords ?

(a) 18 cm (b) 12.8 cm
(c) 12 cm (d) 14 cm

Ans. (d) : Let the distance between chords be MN.



From Pythagoras theorem –

$$ON^2 = 10^2 - 6^2$$

$$ON = 8 \text{ cm}$$

$$OM^2 = 10^2 - 8^2$$

$$OM = 6 \text{ cm}$$

$$MN = ON + OM = 8 + 6 = 14 \text{ cm}$$

5. A liquid mixture contains $\frac{1}{5}$ part acid, $\frac{3}{5}$ part alcohol and rest is water. If the total mixture is 20 ltr, find the amount of water (in ltr).

(a) 12 (b) 8
(c) 4 (d) 15

Ans. (c) : Let, the total amount of the mixture = x

$$\text{The amount of acid in the mixture} = \frac{x}{5} \text{ part}$$

$$\text{The amount of alcohol in the mixture} = \frac{3x}{5} \text{ part}$$

$$\text{Amount of water in the mixture} = x - \left(\frac{x}{5} + \frac{3x}{5} \right) = \frac{x}{5} \text{ part}$$

According to question –

$$\frac{x}{5} + \frac{3x}{5} + \frac{x}{5} = 20$$

$$\frac{5x}{5} = 20$$

$$x = 20 \text{ litres}$$

Hence, the amount of water in the mixture = $\frac{x}{5} = \frac{20}{5} = 4$ litres.

6. Who won the title of Indian Premier League (IPL), 2020 ?

(a) Royal Challengers Bangalore
(b) Kolkata Knight Riders
(c) Chennai Super Kings
(d) Mumbai Indians

Ans. (d) : Mumbai Indians was the winner of IPL 2020 and Delhi Capitals emerged as the runners up. The inaugural of IPL took place in 2008 when the Rajasthan Royals lifted the IPL Trophy for the first time. And since then there have been 13 editions of IPL. Chennai Super Kings won the IPL 2021 by defeating Kolkata Knight Riders in finals.

7. What is the smallest number given as remainder 3 every time when divided by 144, 108, 72 respectively ?

(a) 435 (b) 72
(c) 432 (d) 429

Ans. (a) :

Required number = (LCM of the given numbers) k + remainder

$$\text{Number} = (\text{LCM of } 144, 108, 72) k + 3 = 432k + 3$$

Let k = 1

then

$$\text{Required number} = 432 \times 1 + 3$$

$$\text{Required number} = 435$$

8. Bryophyte is related with which kind of Vegetation.

(a) Cladophora
(b) Devdar
(c) Marchantia
(d) Water clover

Ans. (c) : Bryophytes exist in a wide variety of habitats. They can be found growing in a range of temperatures, elevations and moisture. Marchantia is a Bryophyta. These are simple plants without roots or vascular systems.

9. If Meaning of '+' is '-', '-' is '÷', × is +, ÷ is × then find the value of $13+6÷2×32-2$.

- (a) 15 (b) 17
(c) 23 (d) 20

Ans. (b) : Given –

$+ = -, - = ÷, × = +, ÷ = ×$

According to question –

$$13 + 6 ÷ 2 × 32 - 2$$

On changing the signs of the given equation –

$$= 13 - 6 × 2 + 32 ÷ 2$$

$$= 13 - 12 + 16$$

$$= 17$$

10. If $3\cos\theta = \sqrt{3}$ then find the value of $\operatorname{cosec}\theta \cdot \tan\theta$.

- (a) $\sqrt{2}$ (b) $\frac{1}{\sqrt{3}}$
(c) $\frac{2\sqrt{2}}{3}$ (d) $\sqrt{3}$

Ans. (d) : Given that–

$$3\cos\theta = \sqrt{3}$$

$$\cos\theta = \frac{\sqrt{3}}{3}$$

$$\cos\theta = \frac{\sqrt{3}}{3} \times \frac{\sqrt{3}}{\sqrt{3}}$$

$$\cos\theta = \frac{1}{\sqrt{3}}$$

$$\operatorname{cosec}\theta \cdot \tan\theta = \frac{1}{\sin\theta} \times \frac{\sin\theta}{\cos\theta} = \frac{1}{\cos\theta}$$

$$= \frac{1}{\frac{1}{\sqrt{3}}}$$

$$\boxed{\operatorname{cosec}\theta \cdot \tan\theta = \sqrt{3}}$$

11. Who was the chief guest at India's Republic Day celebration in 2020?

- (a) President of USA
(b) President of Brazil
(c) Sultan of Saudi Arab
(d) Sultan of Brunei

Ans. (b) : Foreign leaders have graced the Republic Day parades every year barring 1952, 1953 and 1966. The then Indonesian President Sukarno was the first chief guest to grace Republic Day in 1950. In 2020, Brazil President Jair Bolsonaro was the chief guest.

12. The area of a rectangle is 300 cm^2 and its diagonal have a length of 5cm. Find the perimeter of rectangle (in cm).

- (a) 50 (b) 176
(c) 25 (d) 121

Ans. (a) : Area of rectangle ($\ell \times b$) = 300 cm^2

length of diagonal (x) = 5cm

$$\therefore \text{Diagonal} = \sqrt{\ell^2 + b^2}$$

Squaring on both side

$$5 = \sqrt{\ell^2 + b^2}$$

$$25 = (\ell + b)^2 - 2\ell b$$

$$25 = (\ell + b)^2 - 2 \times 300$$

$$625 = (\ell + b)^2$$

$$\boxed{\ell + b = 25 \text{ cm}}$$

Hence, perimeter of rectangle = $2(\ell + b)$

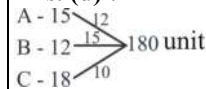
$$= 2 \times 25$$

$$= 50 \text{ cm}$$

13. Three pipes A, B, & C may fill a tank in 15 hrs, 12 hrs and 18 hrs respectively. If both pipes A and C are opened at same time, then how much time they will take to fill the tank.

- (a) $6\frac{5}{9}$ (b) $9\frac{3}{5}$
(c) $7\frac{2}{3}$ (d) $8\frac{2}{11}$

Ans. (d) :



On opening pipe A and pipe C together –

$$\text{Time taken to fill the tank} = \frac{180}{12+10}$$

$$= \frac{180}{22} = \frac{90}{11} = 8\frac{2}{11} \text{ hours}$$

14. A group of 463 persons were asked to vote for their favourite season out of four seasons (rain, summer, spring and winter). The rainy season got 130 votes, while the summer season got 100 votes. Winter season got 53 more votes than the summer season. Spring season got 80 votes. Which of the following seasons was liked by most people?

- (a) Spring season
(b) Summer season
(c) Winter season
(d) Rainy season

Ans. (c) : Total number of votes = 463

Rainy season got votes = 130

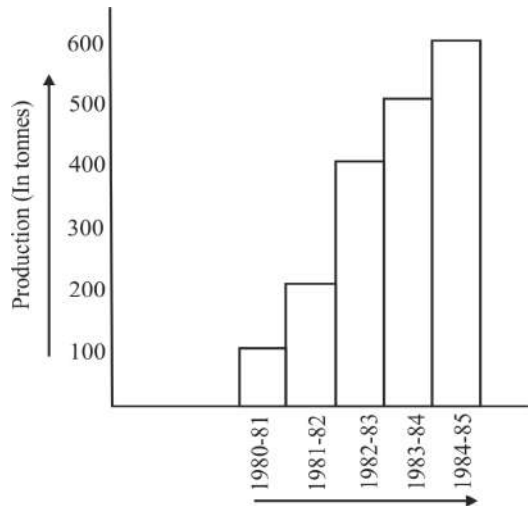
Summer season got votes = 100

winter season got votes = summer season got votes + 53
 $= 100 + 53 = 153$

Spring season got votes = $463 - (130 + 100 + 153) = 80$

Hence, it is clear that, 'winter season' was liked by most of the people.

15. The following graph shows the production (in tonnes) of a product during the year 1980-1985. Answer the given questions on the basis of the graph.



During which year was the maximum net increase in production tonnage as compared to the previous year.

- (a) 1981-82 (b) 1983-84
(c) 1980-81 (d) 1982-83

Ans. (d) : During the year 1982-83 there has been maximum increase (increase of 200 tonnes) as compared to the previous year while there has been an increase of (100-100) tonnes in the rest of the years.

16. Which of the following was not conferred with Bharat Ratna in 2019 ?

- (a) Pranab Mukherjee
(b) Atal Bihari Vajpayi
(c) Nanaji Deshmukh
(d) Dr. Bhoopen Hazarika

Ans. (b) : The latest recipients of the Bharat Ratna in 2019 are social activist Nanaji Deshmukh (Posthumously) singer - music director Bhupen Hazarika (Posthumously) and former President of India, Pranab Mukherjee. On 24 December 2014, Atal Bihari Bajpayee was honored with Bharat Ratna, along with Madan Mohan Malaviya (Posthumously), India's highest civilian honour.

17. If $\frac{x}{y} = \frac{4}{5}$, then find the value of

$$\frac{5x+7y}{5x-7y} + \frac{6x+4y}{7x-8y}$$

- (a) $-\frac{4}{5}$ (b) $\frac{11}{3}$
(c) $\frac{3}{2}$ (d) $-\frac{22}{3}$

Ans. (d) :

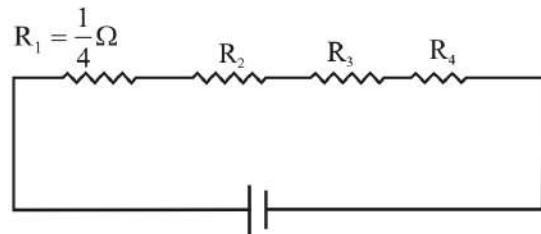
$$\begin{aligned} \frac{x}{y} &= \frac{4}{5} \\ \text{Let } x &= 4, y = 5 \\ \frac{5x+7y}{5x-7y} + \frac{6x+4y}{7x-8y} &= \frac{20+35}{20-35} + \frac{24+20}{28-40} \\ &= \frac{55}{-15} + \frac{44}{-12} = -\frac{11}{3} - \frac{11}{3} \\ &= -\frac{22}{3} \end{aligned}$$

18. If 4 resistances of $\frac{1}{4}\Omega$ are connected in series order then how much the maximum resistance may be obtained?

- (a) 4Ω (b) $\frac{1}{8}\Omega$
(c) 1Ω (d) $\frac{1}{4}\Omega$

Ans. (c) : According to question –

$$R_1 = R_2 = R_3 = R_4 = \frac{1}{4}\Omega$$



$$\text{Max. resistance} = R_1 + R_2 + R_3 + R_4$$

$$\begin{aligned} &= \frac{1}{4} + \frac{1}{4} + \frac{1}{4} + \frac{1}{4} \\ &= 1\Omega \end{aligned}$$

19. If $x + \left(\frac{1}{x}\right) = 12$ and $x^2 - \frac{1}{x^2} = 50$, then find

the value of $x^4 - \frac{1}{x^4}$.

- (a) 1800 (b) 600
(c) 7200 (d) 7100

Ans. (d) : Given –

$$x + \frac{1}{x} = 12 \text{ ————— (i)}$$

$$x^2 - \frac{1}{x^2} = 50 \text{ ————— (ii)}$$

From equation (i)

$$\left(x + \frac{1}{x}\right)^2 = (12)^2$$

$$x^2 + \frac{1}{x^2} + 2 = 144$$

$$x^2 + \frac{1}{x^2} = 142 \text{ ————— (iii)}$$

$$x^4 - \frac{1}{x^4} = \left(x^2 - \frac{1}{x^2}\right)\left(x^2 + \frac{1}{x^2}\right)$$

$$\begin{aligned} \left\{ \because a^4 - b^4 &= (a^2 - b^2)(a^2 + b^2) \right\} \\ &= 50 \times 142 \quad [\text{From equation (ii) and (iii)}] \\ &= 7100 \end{aligned}$$

20. Find the value of
$$\frac{\sin 27^\circ \cdot \cos 63^\circ}{\cos^2 27^\circ} - \frac{\sec 27^\circ \cdot \operatorname{cosec} 63^\circ}{\tan^2 45^\circ}$$

- (a) -1 (b) 0
(c) 1 (d) 2

Ans. (a) :
$$\frac{\sin 27^\circ \cdot \cos 63^\circ}{\cos^2 27^\circ} - \frac{\sec 27^\circ \cdot \operatorname{cosec} 63^\circ}{\tan^2 45^\circ}$$
$$= \frac{\sin 27^\circ \cdot \cos(90^\circ - 27^\circ)}{\cos^2 27^\circ} - \frac{\sec 27^\circ \cdot \operatorname{cosec}(90^\circ - 27^\circ)}{\tan^2 45^\circ}$$
$$\left\{ \begin{array}{l} \because \tan 45^\circ = 1 \\ \cos(90^\circ - \theta) = \sin \theta \\ \operatorname{cosec}(90^\circ - \theta) = \sec \theta \end{array} \right\}$$
$$= \frac{\sin^2 27^\circ}{\cos^2 27^\circ} - \frac{\sec^2 27^\circ}{1}$$
$$= \tan^2 27^\circ - \sec^2 27^\circ$$
$$= (-\sec^2 27^\circ + \tan^2 27^\circ)$$
$$= -(\sec^2 27^\circ - \tan^2 27^\circ) \quad \{ \because \sec^2 \theta - \tan^2 \theta = 1 \}$$
$$= -1$$

- 21. A train having a speed of 60 km/h crosses a pole in 1.5 min. Find the length of the train (in m).**
- (a) 1500 (b) 600
(c) 1200 (d) 800

Ans. (a) : Let the length of the train be ℓ m.

According to question –

$$\frac{\ell}{60} = \frac{1.5}{60}$$

$$\ell = 1.5 \text{ km}$$

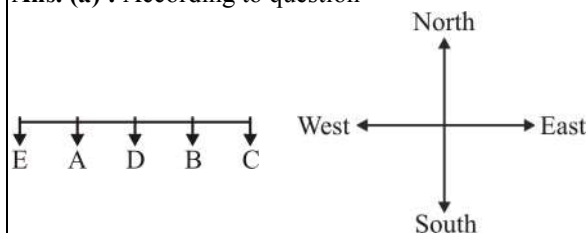
$$\ell = 1500 \text{ meter}$$

- 22. What will be the value of $\frac{1}{0.24}$ part of 1.44?**
- (a) 140 (b) 12
(c) 166 (d) 6

Ans. (d) :
$$1.44 \times \frac{1}{0.24}$$
$$= \frac{144}{24} = 6$$

- 23. Five children A, B, C, D and E are standing in a row facing south. B is to the left of D. B and C are together from all sides (next to each other) and C is at one end of the line. D cannot be in fourth or fifth place. E is to the right of A. Who is standing in the middle of the row ?**
- (a) D (b) B
(c) A (d) E

Ans. (a) : According to question –



Hence, it is clear that D is standing in the middle of the row.

- 24. Python is a _____**
- (a) Programming language
(b) Operating system
(c) Malware
(d) Web Browsers

Ans. (a) : Python is an interpreted, interactive, object-oriented programming language. It incorporates modules, exceptions, dynamic typing, very high level dynamic data types and classes. Python is a free, open source programming language that is available for everyone to use.

- 25. Which type of lens is required for correcting the vision of a person with myopia?**
- (a) Diverging lens
(b) Bifocal lens
(c) Cylindrical lens
(d) Converging lens

Ans. (a) : Nearsightedness, also known as myopia, can be temporarily corrected by using a concave (diverging) corrective lens. The corrective lens creates a virtual image of the object and places the virtual image at the far point of the eye.

- 26. In Feb 2017, ISRO created history by launching _____ satellites.**
- (a) 101 Satellites in one flight
(b) 104 Satellites in one flight
(c) 103 Satellites in one flight
(d) 100 Satellites in one flight

Ans. (b) : PSLV-C37 was the 39th mission of the Indian Polar Satellite Launch Vehicle program. PSLV-C37 successfully carried and deployed a record 104 satellites in sun-synchronous orbits. Launched on 15 February 2017 by ISRO from Satish Dhawan Space Centre, at Sriharikota, Andhra Pradesh.

- 27. A number when reduced by $22\frac{1}{2}\%$ then becomes 217, find the number.**
- (a) 315 (b) 212
(c) 280 (d) 420

Ans. (c) : Let the number be x.

According to question –

$$x \left(100\% - 22\frac{1}{2}\% \right) = 217$$

$$x \times 77\frac{1}{2}\% = 217$$

$$x = \frac{217 \times 100 \times 2}{155}$$

$$x = 280$$

- 28. Intel Core i9 is a kind of _____.**
- (a) Anti-Virus (b) Processor
(c) Mother Board (d) Hard-disk

Ans. (b) : Intel Core i9 brand microprocessors, were introduced in May 2017 for LGA 2066 chips, also known as Intel Core X-series processors. With their high number of cores, high power draw, high thermal output and high performance.

- 29. What will be the value of the median of the following unclassified data ?**
26, 12, 15, 42, 36, 16
- (a) 21 (b) 42
(c) 30 (d) 26

Ans. (a) : On writing the given data in ascending order–
12, 15, 16, 26, 36, 42
n = 6 even number then

$$\begin{aligned}\text{Median} &= \frac{\left(\frac{n}{2}\right)^{\text{th}} \text{ term} + \left(\frac{n+2}{2}\right)^{\text{th}} \text{ term}}{2} \\ &= \frac{\left(\frac{6}{2}\right)^{\text{th}} \text{ term} + \left(\frac{6+2}{2}\right)^{\text{th}} \text{ term}}{2} \\ &= \frac{3^{\text{th}} \text{ term} + 4^{\text{th}} \text{ term}}{2} \\ &= \frac{16 + 26}{2} \\ &= \frac{42}{2} \\ &= 21\end{aligned}$$

30. Humayunama has been written by.

- (a) Gulbadan Begum (b) Babur
(c) Akbar (d) Noorjahan

Ans. (a) : Gulbadan Begum (1523–7 Feb. 1603) was a Mughal princess and the daughter of Emperor Babur who was the founder of the Mughal Empire. She is best known as the author of Humayunama.

31. The value of $\frac{11}{5} - \left(\frac{2}{3} \text{ of } \frac{3}{5} - \frac{1}{5}\right) + \left(\frac{6}{5} \div \frac{4}{5}\right)$ is -

- (a) $\frac{7}{2}$ (b) $\frac{2}{3}$
(c) $\frac{3}{5}$ (d) $\frac{1}{5}$

Ans. (a) :

$$\begin{aligned}&\frac{11}{5} - \left(\frac{2}{3} \text{ of } \frac{3}{5} - \frac{1}{5}\right) + \left(\frac{6}{5} \div \frac{4}{5}\right) \\ &= \frac{11}{5} - \left(\frac{2}{5} - \frac{1}{5}\right) + \frac{3}{2} \\ &= \frac{11}{5} - \frac{1}{5} + \frac{3}{2} \\ &= 2 + \frac{3}{2} = \frac{7}{2}\end{aligned}$$

32. Which of the following is a supersonic cruise missile.

- (a) Trishool (b) Brahmos
(c) Akash (d) Prithvi

Ans. (b) : The Brahmos is a medium - range ramjet supersonic cruise missile that can be launched from submarine, ships, aircraft or land. It is the fastest supersonic cruise missile in the world.

33. Jim Corbett National Park is situated in ?

- (a) Gujarat (b) Uttarakhand
(c) Karnataka (d) Rajasthan

Ans. (b) : Jim Corbett National Park is in the Ramnagar district of Uttarakhand state. The first national park in India, it was established in 1936. The park was the first to come under the Project Tiger initiative.

34. GST is an Indirect Tax imposed in India. What is its full form.

- (a) Goods and Surcharge Tax
(b) Goods and Services Tax
(c) General Service Tax
(d) General Structure of Tax

Ans. (b) : The Goods and Service Tax Act was passed in the Parliament on 29th March 2017 and came into effect on 1st July 2017. Goods and Service Tax is levied on the supply of goods and services.

35. Which is the largest country in South America.

- (a) Brazil (b) Argentina
(c) Bolivia (d) Columbia

Ans. (a) : The largest country in South America is Brazil, which spans over 8,515,767 km². Brazil has a population of over 211 million people. Brazil is also the fifth largest country in the world, right behind the United States.

36. If the interest is compounded annually, an amount of ₹25,000 becomes ₹36,000 after 2 years. Then find the rate of interest.

- (a) 22% (b) 20%
(c) 15% (d) 5%

Ans. (b) :

$$\begin{aligned}\text{From } A &= P \left(1 + \frac{r}{100}\right)^n \\ 36000 &= 25000 \left(1 + \frac{r}{100}\right)^2 \\ \left(1 + \frac{r}{100}\right)^2 &= \left(\frac{6}{5}\right)^2 \\ \frac{100+r}{100} &= \frac{6}{5} \\ (100+r)5 &= 600 \\ 500 + 5r &= 600 \\ 5r &= 100 \\ r &= 20\%\end{aligned}$$

37. The capacity of a cylindrical tank is 6160 m³. If the diameter of base of the tank is 28m, then find the depth (in m) of the tank.

- (a) 12 (b) 10
(c) 14 (d) 8

Ans. (b) : ∵ Volume of cylinder = $\pi r^2 h$

$$\begin{aligned}\text{Radius (r)} &= \frac{\text{Diameter}}{2} \\ &= \frac{28}{2} \\ r &= 14 \text{ m}\end{aligned}$$

According to question –

$$\begin{aligned}\pi r^2 h &= 6160 \text{ m}^3 \\ \frac{22}{7} \times 14 \times 14 \times h &= 6160 \\ h &= \frac{6160 \times 7}{14 \times 14 \times 22} \\ h &= 10 \text{ m}\end{aligned}$$

38. Read the given statements and conclusions carefully. Consider the given information in the statements to be true even if it appears to be at variance from commonly known facts and state which of the given conclusions logically follows from the given statements.

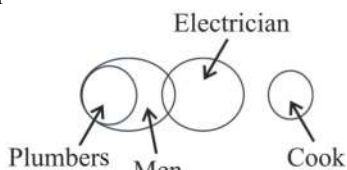
Statements :

1. All Plumbers are men.
2. Some men are electricians.
3. No electrician is a cook.

Conclusions :

1. Some Plumbers are cooks.
 2. Some Plumbers are not cooks.
 3. Some men are not cooks.
- (a) Only conclusion 2 and 3 follows.
 (b) Only conclusion 3 follows.
 (c) Only conclusion 1 and 2 follows.
 (d) None of the conclusion follows.

Ans. (b) : On making Venn diagram, According to question –



Hence, it is clear from the given diagram that only conclusion 3 follows.

39. Amount of ₹5,000 has been invested via simple interest at the rate of 10%. Then in how many years interest would be ₹1,500.
- (a) 6 (b) 3
(c) 5 (d) 8

Ans. (b) : From $SI = \frac{P \times R \times T}{100}$

$$1500 = \frac{5000 \times 10 \times T}{100}$$

$$T = 3 \text{ Years}$$

40. The Central Drug Research Institute is situated in ?
- (a) Delhi (b) Hyderabad
(c) Mumbai (d) Lucknow

Ans. (d) : The Central Drug Research Institute is a multidisciplinary research laboratory in Lucknow employing scientific personnel from various areas of biomedical sciences. The research institute was formally inaugurated on 17 Feb, 1951 by PM, Jawaharlal Nehru.

41. "Antrix Corporation Limited" Bangalore is a
- (a) Film producing company
 (b) ISRO's Marketing branch
 (c) Mobile Handset manufactures
 (d) Electricity distribution company

Ans. (b) : Antrix Corporation Limited was incorporated as a private limited company owned by Government of India in September 1992 as a Marketing branch of ISRO for promotion and commercial exploitation of space products, technical consultancy services and transfer of technologies developed by ISRO.

42. Which among the following places is famous for Uranium Mines ?

- (a) Raniganj (b) Korba
(c) Jaduguda (d) Panna

Ans. (c) : The Jaduguda Mine is a uranium mine in Jaduguda village in the Purbi Singhbhum district of the Indian state of Jharkhand. It commenced operation in 1967 and was the first Uranium mine in India. The deposits at this mine were discovered in 1951.

43. Find the value of $4\sin^2 30^\circ + 3\cot^2 60^\circ - 2\tan^2 45^\circ$.

- (a) 1 (b) 0
(c) 5 (d) 9

Ans. (b) : $4\sin^2 30^\circ + 3\cot^2 60^\circ - 2\tan^2 45^\circ$

$$4 \times \left(\frac{1}{2}\right)^2 + 3 \times \left(\frac{1}{\sqrt{3}}\right)^2 - 2 \times (1)^2$$

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

$$= 1 + 1 - 2$$

$$= 0$$

44. The 2020 World Environment day programme by UNDP was organized by which country.

- (a) Columbia (b) India
(c) France (d) Japan

Ans. (a) : Every World Environment Day is hosted by a different country, in which official celebrations take place. In 2020, the host was Columbia in partnership with Germany, its theme was "Reimagine. Recreate. Restore".

45. The product of three numbers is 10290 and the numbers are in ratio 3 : 5 : 2. Find the largest number among the three numbers.

- (a) 60 (b) 35
(c) 75 (d) 21

Ans. (b) : Let the three numbers be 3x, 5x and 2x respectively.

According to question –

$$3x \times 5x \times 2x = 10290$$

$$30x^3 = 10290$$

$$x^3 = \frac{10290}{30}$$

$$x^3 = 343 \Rightarrow x = 7$$

Hence, the largest number = $5x = 5 \times 7 = 35$

46. Which is the longest highway tunnel in India ?

- (a) Aat Tunnel (b) Rohtang Tunnel
(c) Atal Tunnel (d) Jawahar Tunnel

Ans. (c) : Atal Tunnel, is the longest highway tunnel at a length of 9.02 km above 10,000 feet in the world and is named after former Prime Minister of India, Atal Bihari Vajpayee.

47. On selling a product at ₹360, shopkeeper makes a loss of 10%. Find the selling price at which he makes a profit of 30%.

- (a) ₹600 (b) ₹480
(c) ₹520 (d) ₹740

Ans. (c) :

Cost price of the article

$$= \text{Selling price} \times \frac{100}{(100 - \text{Loss \%})}$$

$$\text{Cost price} = 360 \times \frac{100}{90}$$

$$= 4 \times 100$$

$$\text{Cost Price} = ₹400$$

∴ To get 30% of profit

$$\begin{aligned} \text{Selling price of the article} &= 400 \times \frac{130}{100} \\ &= ₹520 \end{aligned}$$

48. Which of the following river falls in Arabian Sea ?

- (a) Tapi (b) Godavari
(c) Mahanadi (d) Krishna

Ans. (a) : The Indus, Tapi, and Narmada river together with their key tributaries flow into the Arabian sea. The Tapi River is also known as the Tapti River. Tapti is the prehistoric sanskrit name of the River. Tapi is a major river in Central India.

49. If mixture contains acid and alcohol in the ratio 3 : 2. On adding 10 ltr of alcohol to this mixture, the ratio of acid to alcohol becomes 3 : 5. What was the amount of acid (in ltr) in original mixture.

- (a) 10 (b) 5.5
(c) 5 (d) 4.5

Ans. (a) : Let the quantity of acid in the original mixture = 3x litre

Quantity of Alcohol in the original mixture = 2x litre

According to question –

On adding 10 litres of alcohol to the mixture

$$\frac{3x}{2x+10} = \frac{3}{5}$$

$$15x = 6x+30$$

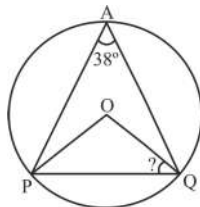
$$9x = 30$$

$$x = \frac{10}{3}$$

Hence the quantity of acid in the original mixture = 3x

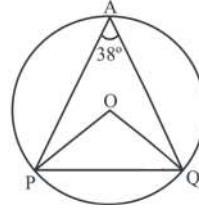
$$\begin{aligned} &= 3 \times \frac{10}{3} \\ &= 10 \text{ litres} \end{aligned}$$

50. In the given figure, PO and OQ are the radius of the circumcircle of the triangle APQ. If $\angle PAQ = 38^\circ$, then what will be the $\angle PQO$?



- (a) 52° (b) 76°
(c) 112° (d) 104°

Ans. (a) :



Given,

$$\angle PAQ = 38^\circ$$

$$\text{Radius} = OP = OQ, \angle PQO = \angle QPO$$

∴ $\angle POQ = 2 \times \angle PAQ$ {When two angles are subtended by the same Arc, the angle at the centre of a circle is twice the angle at the circumference}

$$\angle POQ = 2 \times 38^\circ$$

$$\angle POQ = 76^\circ$$

∴ In $\triangle POQ$,

$$\angle PQO + \angle QPO + \angle POQ = 180^\circ$$

$$2\angle PQO + 76^\circ = 180^\circ$$

$$\angle PQO = 52^\circ$$

51. The Headquarter of UNESCO is in:

- (a) Washington D.C.
(b) New York
(c) London
(d) Paris

Ans. (d) : The United Nations Educational, Scientific and Cultural Organization (UNESCO) is a specialized agency of UN aimed at promoting world peace and security through international cooperation in education, the arts, the sciences and culture. It has 193 member states and 11 associate members. Its headquarter is in Paris, France.

52. 'Samagra Shiksha' is a scheme for schooling programme at the level of _____ ?

- (a) Pre-Nursery to Class XII
(b) Only Class I to XII
(c) Only Class I to VIII
(d) Only Class I to X

Ans. (a) : Samagra Shiksha is an overarching programme for the school education sector extending from pre-school to class 12. The scheme has been prepared with the broader goal of improving school effectiveness measured in terms of equal opportunities for schooling and equitable learning outcomes.

53. Beri-Beri is a disease which occurs due to deficiency of vitamin.

- (a) Vitamin A (b) Vitamin B1
(c) Vitamin D (d) Vitamin C

Ans. (b) : Beri-Beri is a disease caused by a lack of Vitamin B1 (thiamine) in the body. The symptoms of the disease include diffuse polyneuropathy, high-output heart failure and Wernicke - Korsak off syndrome.

54. Select the number from among the given options that can replace the question mark (?) in the following series.

1, 27, 125, 343, ?

- (a) 999 (b) 625
(c) 216 (d) 729

Ans. (d) : The sequence of the given number series is as follows –

$$\begin{array}{ccccc} 1 & 27 & 125 & 343 & \boxed{729} \\ \downarrow & \downarrow & \downarrow & \downarrow & \downarrow \\ (1)^3 & (3)^3 & (5)^3 & (7)^3 & (9)^3 \end{array}$$

Hence, ? = 729

55. Who acts as the chairman of joint sitting of Lok Sabha and Rajya Sabha.

- (a) Senior most member of Rajya Sabha
- (b) Loksabha speaker
- (c) A nominated member by the President of India
- (d) President of India

Ans. (b) : The joint sitting of the Parliament is called by the President of India (Article 108) and is presided over by the Speaker of the Lok Sabha or in their absence, by the Deputy Speaker of the Lok Sabha, or in their absence, the Deputy Chairman of the Rajya Sabha.

56. 'Hinhinana' (neigh) is related to 'Horse' in the same way as 'Mimiana' (bleat) is related to.

- (a) Dog
- (b) Bear
- (c) Ass
- (d) Goat

Ans. (d) : Just as the sound of the horse is neigh in the same way the sound of the goat is bleat.

57. A Famous traveler, Ibn Batuta, was inhabitant of —

- (a) Morocco
- (b) Greece
- (c) China
- (d) Italy

Ans. (a) : Ibn Batuta was basically from Morocco. He came to India in the year 1334, all the way through the mountains of Afghanistan during the time of the Tughlaq dynasty. He was known for his travelling and Undertaking excursions called the Rihla.

58. Which of the following human diseases is caused by bacteria?

- (a) Typhoid
- (b) Hepatitis A
- (c) Polio
- (d) Measles

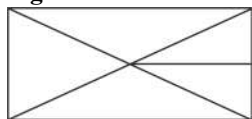
Ans. (a) : Typhoid fever is a life-threatening illness caused by Salmonella Typhi bacteria. While Hepatitis A, Polio and Measles are caused by Viruses. Measles is characterised by fever and upper respiratory tract symptoms like cough and cold (Coryza).

59. As per November 2020, What is the total number of High Courts in India are.

- (a) 15
- (b) 21
- (c) 25
- (d) 29

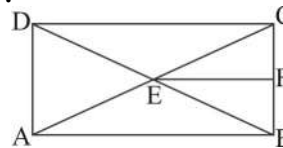
Ans. (c) : As per November 2020, there are 25 High Courts in India. Article 214 lays down the authority of High Courts. High Courts exercise civil or criminal jurisdiction only if the subordinate courts in the State are not competent to try the matters.

60. The given figure contains how many triangles.



- (a) 12
- (b) 9
- (c) 6
- (d) 10

Ans. (d) :



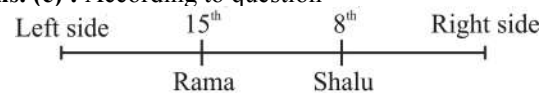
{ $\triangle ABC$, $\triangle ABD$, $\triangle AED$, $\triangle AEB$, $\triangle BEC$, $\triangle CED$, $\triangle ADC$, $\triangle DBC$, $\triangle BEF$, $\triangle CEF$ }

The number of triangles in the given figure is 10.

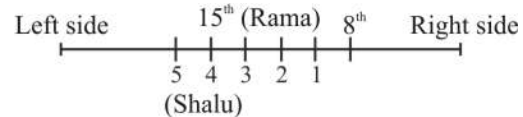
61. A row of girls is standing facing north. Rama is 15th from the left and Shalu is 8th from the right. If Shalu is shifted to the 5th position from the left, then she will be immediate to the left of Rama. How many total girls are standing in the row ?

- (a) 28
- (b) 27
- (c) 26
- (d) 25

Ans. (c) : According to question –



After changing the position of Shalu to the 5th position from the left side.



Hence, the total number of girls in the row
= 15 + 3 + 8 = 26

62. As per the information till Nov 2020, who is the Education Minister of India.

- (a) Smriti Jubin Irani
- (b) Prakash Javadekar
- (c) Dr. Ramesh Pokhriyal Nishank
- (d) Mahendra Nath Pandey

Ans. (c) : The Minister of Education, formerly the Minister of Human Resources Development (1985–2020), is the head of the Ministry of Education and one of the cabinet ministers of Government of India. The recent one was Ramesh Pokhriyal who resigned on 7 July 2021 citing health issues. The current Education Minister is Dharmendra Pradhan.

63. Which of the following country is a member of SAARC ?

- (a) China
- (b) Myanmar
- (c) Mauritius
- (d) Afghanistan

Ans. (d) : The member of SAARC (South Asian Association for Regional Cooperation) are Afghanistan, Bangladesh, Bhutan, India, the Maldives, Nepal, Pakistan and Sri Lanka. The SAARC was founded by seven states in 1985. Its headquarter is in Kathmandu, Nepal.

64. Consider the following statement and find which of the following assumption is implicit in statement.

Statement:

P advised Q, "Go to Mumbai via Jaipur this is the shortest route".

Assumption :

- I. P advises to all
- II. Q wants to go to Mumbai

- (a) assumption I is implicit.
 (b) Neither assumption I nor II is implicit.
 (c) Either assumption I or II is implicit.
 (d) Only assumption II is implicit.

Ans. (d) : It is clear from the above statement that only assumption II is implicit.

65. In between 250–1000, how many numbers are completely divisible by 5, 6 & 7.

- (a) 5 (b) 7
 (c) 6 (d) 3

Ans. (d) : LCM of 5, 6, 7 –

2	5, 6, 7
3	5, 3, 7
5	5, 1, 7
7	1, 1, 7
	1, 1, 1

$$2 \times 3 \times 5 \times 7 = 210$$

∴ Numbers from 250 to 1000 which are divisible by 5, 6, 7 will be divisible by 210 or in multiples of 210.

$$210 \times 2, 210 \times 3, 210 \times 4, \dots$$

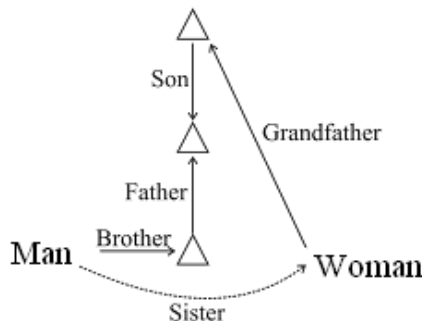
$$420, 630, 840, \dots$$

Hence there will be 3 numbers.

66. While introducing a man to her husband, a woman said. "His brother's father is the only son of my grandfather". What is the relationship of the woman to man ?

- (a) Sister (b) Daughter
 (c) Mother (d) Aunt

Ans. (a) : On drawing the relation diagram as per the question –



Hence, it is clear from the diagram that the woman is the sister of that man.

67. On 8th Nov 2016, during the declaration of Demonetization, who was the Governor of RBI?

- (a) Shaktikant Das (b) Raghuram Rajan
 (c) Urjit Patel (d) D. Subbarao

Ans. (c) : Urjit Patel who took over as the 24th governor of the Reserve Bank of India on September 4, 2016, succeeding Raghuram Rajan. Demonetisation took place on 8 Nov, 2016, Urjit Patel was RBI Governor at that time.

68. Who has been known as the 'Father of Indian Constitution' ?

- (a) Dr. BR Ambedkar
 (b) Dr. Rajendra Prasad
 (c) Dr. K.M. Munshi
 (d) Shri Sacchidanand Sinha

Ans. (a) : Dr. B.R. Ambedkar was known as father of Indian Constitution because he played the most effective role in presenting the constitution as a guiding document for Indian Society. He was the chairman of Drafting Committee. He is known as "Modern Manu of India".

69. A person has four silver articles - P, Q, R and S, each of different weight. The weight of P is three times that of Q. The Weight of Q is two and a half times the weight of S. The weight of R is equal to half of the weight of S. Which of the following silver articles weight the least ?

- (a) Q (b) P
 (c) S (d) R

Ans. (d) : Let the weight of R = x kg

According to question –

$$\text{Weight of S} = 2x \text{ kg.}$$

$$\text{Weight of Q} = 2x \times \frac{5}{2} = 5x \text{ kg.}$$

$$\text{Weight of P} = 5x \times 3 = 15x \text{ kg.}$$

It is clear that R has the lightest in weight.

70. Jataka tales are related with-

- (a) Sikh Religion
 (b) Buddha Religion
 (c) Jain Religion
 (d) Hindu Religion

Ans. (b) : Jataka (Pali and Sanskrit : "Birth") any of the extremely popular stories of former lives of the Buddha. Some Jataka tales are scattered in various sections of the Pali canon of Buddhist writings.

71. Kaveri water dispute is in between ———.

- (a) Karnataka & Telangana
 (b) Karnataka & Goa
 (c) Karnataka & Andhra Pradesh
 (d) Karnataka & Tamil Nadu

Ans. (d) : The sharing of waters of the Kaveri River has been the source of a serious conflict between the two Indian states of Tamil Nadu and Karnataka. The genesis of this conflict rests in two agreement in 1892 and 1924 between the Madras Presidency and Kingdom of Mysore.

72. Mahatma Gandhi chaired the session of Indian National Congress in——

- (a) Belgaum (b) Kanpur
 (c) Madras (d) Karachi

Ans. (a) : Mahatma Gandhi was the president in 1924 for only once at the Belgaum conference of Indian National Congress. He was succeeded by Sarojini Naidu as the next congress president.

73. A tennis player won 5 matches, lost 12 matches and drew 3 matches in his career. The fraction of matches which lost in his career is.

- (a) $\frac{12}{5}$ (b) $\frac{2}{5}$
 (c) $\frac{1}{5}$ (d) $\frac{3}{5}$

Ans. (d) : Number of matches won by the player = 5
 Number of matches lost by the player = 12
 Match draw = 3
 Number of total matches = $5 + 12 + 3 = 20$
 Hence, Fraction of the Lost matches = $\frac{12}{20} = \frac{3}{5}$

74. The LCM of two number is 156 and their HCF is 26. If difference between two number is also 26, then find the sum of numbers.
 (a) 104 (b) 52
 (c) 78 (d) 130

Ans. (d) : Let the numbers be $26x$ and $26y$ respectively.
 Formula – Product of numbers = L.C.M \times H.C.F

$$26x \times 26y = 156 \times 26$$

$$xy = 6$$

According to question –

$$26x - 26y = 26$$

$$x - y = 1$$

On squaring both sides,

$$(x-y)^2 = 1^2$$

$$x^2 + y^2 - 2xy = 1$$

$$x^2 + y^2 = 1 + 2xy$$

$$(x+y)^2 - 2xy = 1 + 2xy$$

$$(x+y)^2 = 1 + 4xy$$

$$(x+y)^2 = 1 + 4 \times 6$$

$$(x+y)^2 = 25$$

$$\boxed{x+y = 5}$$

Hence the sum of the number = $26x + 26y$

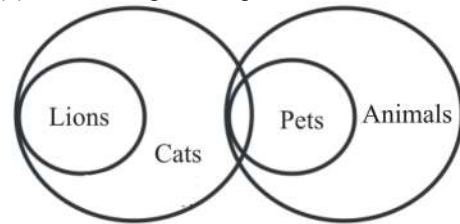
$$26(x+y) = 26 \times 5 = 130$$

75. Who wrote Geet Govinda?
 (a) Jayadeva
 (b) Meerabai
 (c) Raskhan
 (d) Surdas

Ans. (a) : The Gita Govinda was written by the Indian poet Jayadeva in the 12th century. It describes the touching love story of Krishna and the Shepherd girl Radha. The sanskrit devotional poem Gita Govinda is a cycle of 24 songs.

76. Read the given statements and conclusions carefully. Assuming that the information given in the statements is true, even if it appears to be at variance with commonly known facts, decide which of the given conclusions logically follow (s) from the statement.
Statements:
 1. All lions are cats
 2. Some cats are Pets
 3. All pets are animal
Conclusions :
 1. Some cats are animal
 2. All the lions are animal
 (a) Only conclusion I follows.
 (b) Both conclusion I and II follow.
 (c) Neither conclusion I nor II Follows.
 (d) Only conclusion II follows.

Ans. (a) : According to the question –



It is clear from the Venn diagram that only conclusion I follows.

77. ASCII is a code to denote the English alphabets in numeric's. Its full form is _____.
 (a) Australian Secure Code for Information Interchange
 (b) American Standard Code for Information Interchange
 (c) American Secure Code for Information Interchange
 (d) Australian Standard Code for Information Interchange

Ans. (b) : ASCII, abbreviation of American Standard Code for Information Interchange, a standard data-transmission code that is used by smaller and less-powerful computers to represent both textual data and non-input device commands.

78. In India, the Communal Electorate system was firstly started through.
 (a) Cripps Mission, 1942
 (b) Wavel Plan 1945
 (c) Rowlet Act, 1919
 (d) Morley Minto Reform, 1909

Ans. (d) : Communal Electorate system was introduced by Morley - Minto Reforms (Indian Councils Act 1909). This act effectively 'legalised communalism' as it introduced electorates based on religion. Lord Minto is known as the father of the Communal Electorate.

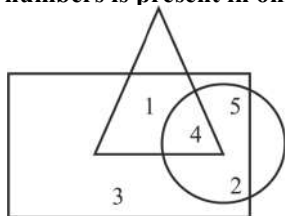
79. If $a + b = 8$ and $a^2 + b^2 = 12$, then find the value of $a^3 + b^3$.
 (a) -112 (b) 716
 (c) 1136 (d) -211

Ans. (a) : $a + b = 8$
 $a^2 + b^2 = 12$
 $(a+b)^2 - 2ab = 12$
 $8^2 - 2ab = 12$
 $2ab = 64 - 12$
 $2ab = 52$
 $ab = 26$
 $\therefore a^3 + b^3 = (a+b)(a^2 + b^2 - ab)$
 $= 8(12 - 26)$
 $= 8 \times -14$
 $= -112$

80. Cabinet Mission came to India in the Year _____.
 (a) 1946 (b) 1941
 (c) 1940 (d) 1943

Ans. (a) : Cabinet Mission was a high-powered mission sent to India in February 1946 by the Atlee Government (British Prime Minister). The Mission had three British Cabinet Members – Pethick Lawrence, Stafford Cripps, and A.V. Alexander.

81. The given figure contains many shape. Which of these numbers is present in only one shape?



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

Ans. (b) : It is clear from the given diagram that the number 3 is present in only one shape.

82. The value of $200 \div (5.23 + 4.77) \times$

$$\left(\frac{3}{5} - \frac{2}{10}\right) + (5 - 2) \text{ will be ?}$$

- (a) 8 (b) 11
(c) 19 (d) 18

Ans. (b) :

$$200 \div (5.23 + 4.77) \times \left(\frac{3}{5} - \frac{2}{10}\right) + (5 - 2)$$

According to BODMAS rule.

$$= 200 \div (10.00) \times \frac{4}{10} + (5 - 2)$$

$$= 20 \times \frac{4}{10} + 3 = 8 + 3 = 11$$

83. Out of 10 liters of solution, 2 liters of water is evaporated. The remaining solution contains 6% salt. What is the amount of salt Percentage in the original solution ?

- (a) 4.8% (b) 5.6%
(c) 5% (d) 5.4%

Ans. (a) : Amount of solution = 10 litres
According to question, amount of salt in solution =

$$(10 - 2) \times \frac{6}{100}$$

$$= \frac{48}{100} = 0.48 \text{ litres}$$

Amount of salt in the original solution (in %)

$$= \frac{0.48}{10} \times 100 = 4.8\%$$

84. Read the given statements and conclusions carefully. Assuming that the information given in the statements is true even if it appears to be at variance with commonly known facts, decide which of the given conclusions logically follow (s) from the statements.

Statements :

1. All lawyers are intelligent.

2. Some women are lawyers.

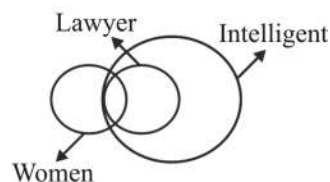
Conclusions :

I. Some women are intelligent.

II. All those who are intelligent are women.

- (a) Either conclusion I or II follows
(b) Only conclusion I follows
(c) Neither conclusion I nor II follows
(d) Only conclusion II follows

Ans. (b) : On making Venn diagram, according to question.



Hence, it is clear from the diagram that only conclusion I follows.

85. 30 labour can build a bridge in 40 days. If 75 workers are assigned to complete the same work, how many days will it take in total ?

- (a) 10 (b) 56
(c) 16 (d) 12

Ans. (c) : $M_1 \times D_1 = M_2 \times D_2$

$$30 \times 40 = 75 \times D_2$$

$$D_2 = \frac{30 \times 40}{75}$$

$$D_2 = 16 \text{ Days}$$

86. In a certain code language LEADER is written as ELDARE, then how will FOUNTAIN be written in that code language?

- (a) FONUATIN (b) FOUNTANI
(c) OFNUATNI (d) OFUNATIN

Ans. (c) :

Just as,

L E A D E R \longrightarrow E L D A R E
1 2 3 4 5 6 2 1 4 3 6 5

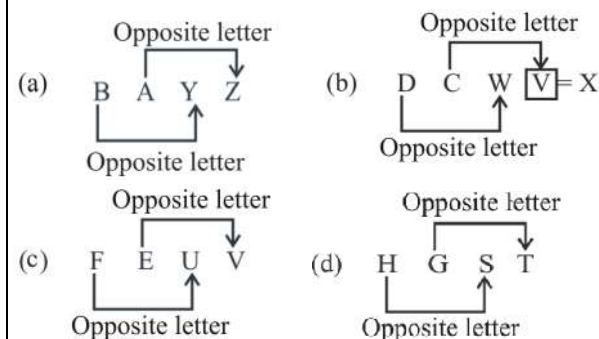
Similarly,

F O U N T A I N \longrightarrow O F N U A T N I
1 2 3 4 5 6 7 8 2 1 4 3 6 5 8 7

87. Four letter-cluster have been given, out of which three are alike in some manner and one is different. Select the odd one.

- (a) BAYZ (b) DCWV
(c) FEUV (d) HGST

Ans. (b) : From the given options –



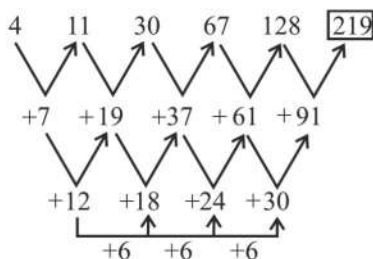
Hence, It is clear from the given options, option (b) is odd.

88. Select the number from among the given options that can replace the question mark (?) in the following series.

4, 11, 30, 67, 128, ?

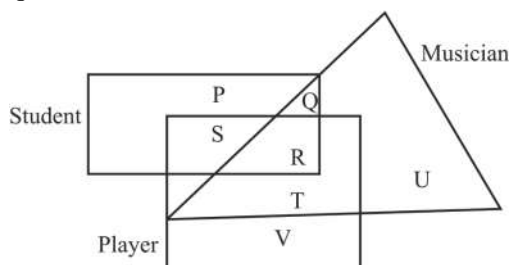
- (a) 219 (b) 182
(c) 195 (d) 346

Ans. (a) : The sequence of the given number series is as follows –



Hence, ? = 219

89. 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

Ans. (d) : 'Q' represents those students who are Musicians but not players.

90. If $8 + 5 = 1340$ is true, then find the value of $4 + 6$.

- (a) 1024 (b) 1304
(c) 1414 (d) 1012

Ans. (a) : Just as,

$$8 + 5 = 13$$

$$8 \times 5 = 40$$

Similarly,

$$4 + 6 = 10$$

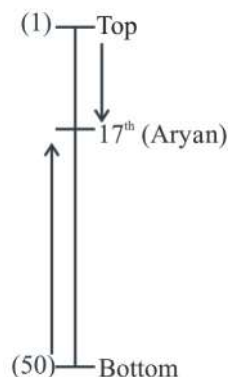
$$4 \times 6 = 24$$

Hence, $4 + 6 = 1024$

91. In the class of 50 students, Aryan is 17th from top and its position from bottom will be.

- (a) 32th (b) 18th
(c) 34th (d) 33th

Ans. (c) : According to the question –



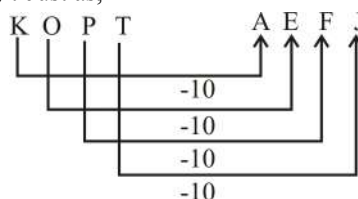
$$\text{Aryan's rank from the bottom} = 50 - 17 + 1 = 34^{\text{th}}$$

92. Select the option that is related to the third letter cluster in the same way as the second letter cluster is related to the first term.

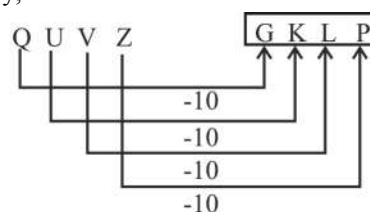
KOPT : AEFJ :: QUVZ : ?

- (a) NRSW (b) PTUY
(c) GKLP (d) OSTX

Ans. (c) : Just as,



Similarly,



Hence ? = GKLP

93. Six girls P, Q, R, U, V and W are sitting in the school ground. P and Q are from Maitri house, while other are from Gargi House. U and W are short, while the other girls are tall. P, R and U are wearing caps while others are not. Which tall girl from Gargi House is not wearing a cap ?

- (a) W (b) Q
(c) V (d) P

Ans. (c) : Girls of the Maitri House = P and Q

Girls of the Gargi House = R, U, V and W

Short girls = U and W

Tall girls = P, Q, R and V

Number of girls who are wearing cap = P, R and U

Number of girls who is not wearing cap = Q, V and W

Hence it is clear that 'V' of the Gargi House is tall girl who is not wearing cap.

94. In a certain code language FIVE is written as '5137 and RAT is written as 924, then how will FEAR be written as in that code language ?

- (a) 5192 (b) 5972
(c) 5729 (d) 5392

Ans. (c) : Given,

F → 5 and R → 9
I → 1 A → 2
V → 3 T → 4
E → 7

From the above codes

F → 5
E → 7
A → 2
R → 9

95. As India is related to 'New Delhi', China is related to _____.

- (a) Pyongyang
(b) Seoul
(c) Beijing
(d) Tokyo

Ans. (c) : Just as the capital of India is 'New Delhi', in the same way the capital of China is 'Beijing'.

96. P is taller than T, Q is taller than S, U is taller than R, S is taller than P and T is taller than U. Who is shortest among all ?

- (a) R (b) P
(c) S (d) U

Ans. (a) : According to the question, Arranging order of length –

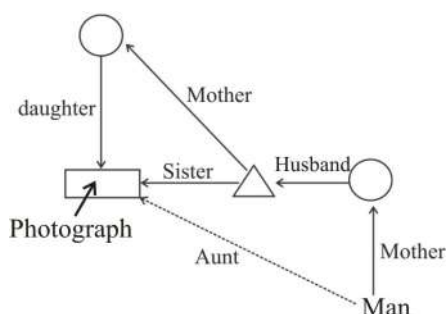
$Q > S > P > T > U > R$

Hence it is clear that R is the shortest.

97. Pointing to a photograph a man said, "She is the daughter of the woman who is the mother of my mother's husband". How is the woman in the photograph related to that person ?

- (a) Daughter (b) Aunt
(c) Sister (d) Sister-in-law

Ans. (b) : On making relation diagram according to question–



The woman in the picture will be related to that person as aunt.

98. Read the statements and their conclusions carefully and state which conclusion logically follows the statement.

Statements:

Chanchal is prettier than Leela, but not as beautiful as Bhumi

Conclusion :

I. Leela is not as beautiful as Chanchal.

II. Leela is more beautiful than Bhumi.

III. Bhumi is not as beautiful as Chanchal.

IV. Chanchal is more beautiful than Bhoomi.

- (a) Only conclusion II follows
(b) Only conclusion IV follows
(c) Only conclusion III follows
(d) Only conclusion I follows

Ans. (d) : According to question –

$Bhoomi > Chanchal > Leela$

It is clear from the above sequence that Leela is not as beautiful as Chanchal.

Hence, only conclusion (I) follows.

99. Four numbers have been given, out of which three are alike in some manner and one is different. Select the odd one number.

- (a) 39 (b) 35
(c) 37 (d) 41

Ans. (d) : From the given options –

(a) $39 = 3 + 9 = 12$

(b) $35 = 3 + 5 = 8$

(c) $37 = 3 + 7 = 10$

(d) $41 = 4 + 1 = 5$

It is clear from the above that option (d) is different.

Note:– For this question, discrepancy is found in question/answer. So, this question is ignored for all candidates.

100. Four words have been given, out of which three are alike in some manner and one is different. Select the odd one word.

- (a) Leopard
(b) Tiger
(c) Wildcat
(d) Fox

Ans. (d) : Tiger, Wildcat and Leopard are species of Cat while fox is species of wild dog. Hence, option (d) is different from all the options.

Railway Non-Technical Popular Categories Exam - 2019

Graduate and Under-Graduate Level

[Ist Stage Computer Based Test]

Exam Date : 30.12.2020]

[Time : 10:30 pm-12:00 pm

1. One kilobyte is equal to _____ bytes.
- (a) 256 (b) 512
(c) 2048 (d) 1024

Ans. (d) :

1024 Byte = 1 Kilobyte (KB)
1024 Kilobyte = 1 Megabyte (MB)
1024 Megabyte = 1 Gigabyte (GB)
1024 Gigabyte = 1 Terabyte (TB)
1024 Terabyte = 1 Petabyte (PB)
1024 Petabyte = 1 Exabyte (EB)
1024 Exabyte = 1 Zettabyte (ZB)

2. Find the length of the longest pole that can be placed in a room of dimensions 30m × 15m × 10m.
- (a) 31 m (b) 35 m
(c) 33 m (d) 18 m

Ans. (b) : Given–

Length of the room (l) = 30 m

Breadth (b) = 15 m

Height (h) = 10 m

Diagonal of room is the length of longest pole

$$\Rightarrow \text{Diagonal} = \sqrt{l^2 + b^2 + h^2}$$

$$= \sqrt{30^2 + 15^2 + 10^2}$$

$$= \sqrt{900 + 225 + 100}$$

$$= \sqrt{1225}$$

$$= 35 \text{ m}$$

3. Which of the following is a metalloid?
- (a) Lead (b) Bromine
(c) Gold (d) Silicon

Ans. (d) : Those elements which have both the properties of metals and non-metals are called metalloids. For example – Boron, Silicon, Germanium, Arsenic, Antimony and Tellurium. Carbon, Aluminum, Selenium, Polonium and Astatine are also called metalloids to some extent.

4. 'Garden' is related to 'Gardener' in the same way as 'Museum' is related to '_____'.
(a) Museology (b) Curator
(c) Artist (d) Guide

Ans. (b) : As like Garden is related to Gardener in same way Museum is related to Curator.

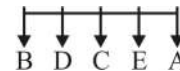
5. Who was the founder of the Vishishtadvaita philosophy ?
(a) Vishnu Swami (b) Madhvacharya
(c) Nimbarka (d) Ramanujacharya

Ans. (d) : Ramanujacharya was the founder of the Vishishtadvaita philosophy. According to this ideology, Brahma is the embodiment of all virtues. This is not Nirguna Sachidanand but it is the embodiment of Satyam, Gyanam and Anandam. 'Ramanuj' wrote a commentary on the sutra which is called from Shri Bhasya.

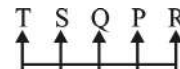
6. Five boys A, B, C, D and E and five girls P, Q, R, S and T are sitting in two rows opposite to each other such that the boys are in one row and the girls are in one row. C is sitting in the center and A is sitting on his left. D is sitting between B and C. T who is to the left of S is sitting opposite B who is two seats away from E. P is sitting between Q and R. Who is sitting opposite of E.
- (a) R (b) P
(c) Q (d) S

Ans. (b) : According to question, the sitting arrangement is as follows –

Row of Boys –



Row of Girls –



Hence, it is clear that P is in front sitting opposite to E.

7. Number 0.232323 can be written in rational form as :
- (a) $\frac{23}{999}$ (b) $\frac{23}{99}$
(c) $\frac{23}{9}$ (d) $\frac{23}{990}$

Ans. (b) : 0.232323....

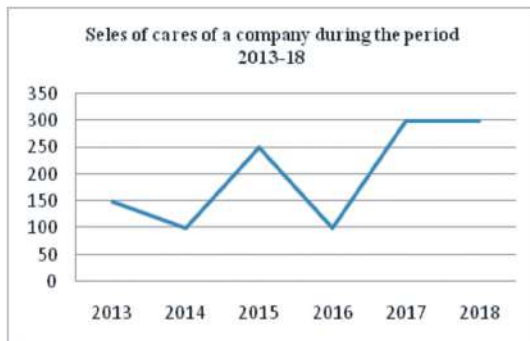
$$= 0.\overline{23}$$

$$= \frac{23}{99}$$

8. Parshotam and Anjilka started moving in the opposite directions from the same place at a speed of 30 km/h and 3.5 km/h respectively. How far will they be from each other after 2.5h?
- (a) 83.75 km (b) 75 km
(c) 66.25 km (d) 8.75 km

Ans. (a) : From, $\text{Speed} = \frac{\text{Distance}}{\text{Time}}$
 Distance covered by Parashotam = $30 \times 2.5 = 75$ km
 Distance covered by Anjilka = $3.5 \times 2.5 = 8.75$
 Total Distance = $75 + 8.75$
 = 83.75 km

9. From the given diagram, determine the difference between the total number of cars sold in the first three years and in the last three years.



- (a) 700 (b) 150
 (c) 1200 (d) 200

Ans. (d) : Total number of cars sold in first three years.
 = $150 + 100 + 250$
 = 500
 Cars sold in last three years
 = $100 + 300 + 300$
 = 700
 Required difference = $700 - 500$
 = 200

10. Which of the following is classified under Kingdom Animalia ?
 (a) Protozoa (b) Metazoa
 (c) Choanozoa (d) Pipiens

Ans. (b) : All animals are member of the Kingdom Animalia also called Metazoa. Amongst the five kingdoms, the largest kingdom is the animal kingdom. This kingdom does not contains prokaryotes or protists.

11. What is the smallest number which when increased by 3 is divisible by 27, 35, 25 and 21?
 (a) 4725 (b) 317
 (c) 4728 (d) 4722

Ans. (d) :
 Required number = $(\text{LCM of } 27, 35, 25 \text{ and } 21) - 3$
 = $4725 - 3$
 = 4722

12. If mean is 40 and standard deviation is 5 then C.V. (Coefficient of variation) is
 (a) 20% (b) 12.5%
 (c) 5% (d) 100%

Ans. (b) : Given,
 Mean = 40, Standard deviation = 5
 Coefficient of Variation = $\frac{\text{Standard deviation}}{\text{Mean}} \times 100$
 = $\frac{5}{40} \times 100 = 12.5\%$

13. Which of the following is NOT an abiotic component?
 (a) Water (b) Sun light
 (c) Soil (d) Green Plant

Ans. (d) : An abiotic factor (component) is a non-living part of an ecosystem that shapes its environment. For example :- water, sunlight, soil, minerals, gases, humidity etc.
 Green plants are biotic factors (components).

14. India's scientific mission to observe and study the solar corona is called:
 (a) Aditya-L1 (b) Satnav
 (c) Astrostat (d) Chandrayaan

Ans. (a) : Aditya-L1 is the India's first scientific expedition to study the Sun. It will be ISRO's (Indian Space Research Organisation) second space - based astronomy mission after Astrosat, which was launched in 2015.

15. Which of the following is the assumption for the claim that 'Pleasure is desirable'?
 (a) Pleasure is essential
 (b) Everyone desires pleasure
 (c) Everyone desires something
 (d) Some persons desire pleasure

Ans. (b) : Assumption for the claim that 'Pleasure is desirable' is Everyone desires pleasure.

16. Select the option that is related to the third letter-cluster in the same way as the second letter-cluster is related to the first letter-cluster.

ABCD : ZYXW :: GHIJ : ?

- (a) TSRQ (b) PQRS
 (c) MLKJ (d) LMNO

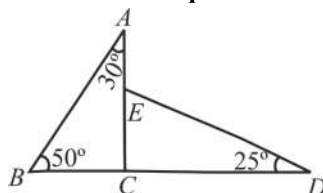
Ans. (a) : As like,
 A — Opposite Letter —> Z
 B — Opposite Letter —> Y
 C — Opposite Letter —> X
 D — Opposite Letter —> W

Similarly,

G — Opposite Letter —> T
 H — Opposite Letter —> S
 I — Opposite Letter —> R
 J — Opposite Letter —> Q

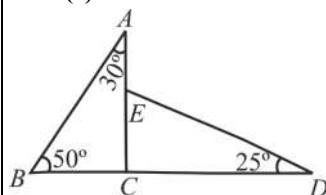
Hence, $TSRQ$

17. In the given diagram, if $\angle BAC = 30^\circ$, $\angle ABC = 50^\circ$ and $\angle CDE = 25^\circ$, then $\angle AED$ is equal to:



- (a) 75° (b) 95°
(c) 105° (d) 115°

Ans. (c) : In $\triangle ABC$



$$\begin{aligned}\therefore \angle BCA &= 180^\circ - \angle BAC - \angle ABC \\ &= 180^\circ - 30^\circ - 50^\circ \\ &= 100^\circ\end{aligned}$$

$$\therefore \angle ACD = 180^\circ - 100^\circ$$

$$\angle ACD = 80^\circ \text{ [From linear pair property]}$$

\therefore Exterior angle is the sum of two interior angle of a triangle.

$$\begin{aligned}\Rightarrow \angle AED &= \angle ACD + \angle CDE \\ &= 80^\circ + 25^\circ \\ &= 105^\circ\end{aligned}$$

18. The down fold in a rock is known as a/an:

- (a) Syncline (b) Backline
(c) Anticline (d) Crestline

Ans. (a) : An upward fold is called an anticline while a downward fold is called a syncline. Synclines are formed when tectonic plates move toward each other, compressing the crust and forcing it upward.

19. If '+' is replaced by '-', 'x' is replaced by '+' and '-' by 'x', then $28 + (5 \times 7) - \frac{9}{6}$, will be equal to :

- (a) 8 (b) 15
(c) 10 (d) 20

Ans. (c) : Given,

$$+ = -, \times = +, - = \times$$

according to the question,

On changing sign

$$= 28 - (5 + 7) \times \frac{9}{6}$$

$$= 28 - 12 \times \frac{9}{6}$$

$$= 28 - 18$$

$$= 10$$

20. Which of the following is situated in Jammu and Kashmir ?

- (a) Pakhal Wildlife Sanctuary
(b) Jaldapara National Park
(c) Dachigam National Park
(d) Balpakram National Park

Ans. (c) :

Pakhal Wildlife Sanctuary – Telangana

Jaldapara National Park – West Bengal

Dachigam National Park – Jammu & Kashmir

Balpakram National Park – Meghalaya

21. Lord Mahavira's original name is:

- (a) Ananda (b) Siddhartha
(c) Sariputta (d) Vardhamana

Ans. (d) : Lord Mahavira, also known as Vardhamana, was the 24th Tirthankara of Jainism. Mahavira was born in the early part of the 6th century (599 BCE) into a royal Jain family in (Vaishali) Bihar, India. His parents were Siddhartha and Trishla and his wife was Yashoda.

→ Mahavira taught the idea of supremacy of human life and stressed the importance of the positive attitude of life.

→ Mahavira's message of non-violence (Ahimsa), truth (Satya), non-stealing aseyta and non-possession Aparigraha is full of universal compassion.

22. Which of the following is a satellite based augmentation system of India?

- (a) JATAN (b) GAGAN
(c) NAG (d) GAGAN SHAKTI

Ans. (b) : The Indian Space Research Organization (ISRO) and Airports Authority of India (AAI) have implemented the GPS Aided Geo Augmented Navigation - GAGAN Project as a Satellite Based Augmentation System (SBAS) for the Indian Airspace.

The GAGAN is an augmentation system which augments the GPS constellation by improving Accuracy, Availability, Continuity, and Integrity.

23. The 2022 Commonwealth Games are scheduled to be held in :

- (a) Birmingham (b) Delhi
(c) Perth (d) Edinburg

Ans. (a) : The 2022 Commonwealth Games will be held in Birmingham, England. It is officially known as the XXII Commonwealth Games. The first Commonwealth Game was hosted in Hamilton, Canada in 1930. In India, Delhi hosted the country's first Commonwealth Games in 2010.

24. The given table shows the number of formal learners, informal learners and illiterates, on the basis of gender, in the age group of 18–30 years in village X near Delhi. Determine the ratio among the formal learners, informal learners and illiterates.

FORMAL LEARNERS	BOYS	39
	GIRLS	52
INFORMAL LEARNERS	BOYS	65
	GIRLS	78
ILLITERATES	BOYS	143
	GIRLS	169

- (a) 11 : 24 : 7 (b) 7 : 24 : 11
(c) 11 : 7 : 24 (d) 7 : 11 : 24

Ans. (d) : Number of formal learners = 39 + 52 = 91
Number of informal learners = 65 + 78 = 143
Number of illiterates = 143 + 169 = 312
Hence, Required ratio = 91 : 143 : 312
= 7 : 11 : 24

25. Value of the square root of $\frac{36.1}{102.4}$ is:

- (a) $\frac{61}{340}$ (b) $\frac{19}{32}$
(c) $\frac{19}{34}$ (d) $\frac{19}{31}$

Ans. (b) : $\sqrt{\frac{36.1}{102.4}} = \sqrt{\frac{361}{1024}}$
 $\sqrt{\frac{(19)^2}{(32)^2}} = \frac{19}{32}$

26. Two dice are thrown simultaneously and the sum of the numbers appearing on them is noted. What is the probability that the sum is 12?

- (a) 36 (b) $\frac{12}{36}$
(c) $\frac{1}{36}$ (d) 3

Ans. (c) :

Total events when two dice are thrown simultaneously
= 6×6
= 36

Total events when the sum is 12 = 1 { \because 6, 6 }

$$\text{Probability} = \frac{1}{36}$$

27. By selling an article for ₹138, a shopkeeper losses 8%. At what price should the article be sold to get a gain of 4%?

- (a) ₹156 (b) ₹144
(c) ₹90 (d) ₹210

Ans. (a) : Selling Price of article. = ₹ 138

$$\text{Cost price} = 138 \times \frac{100}{92} = ₹ 150$$

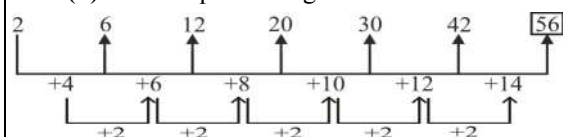
$$\text{Selling Price to get a gain of 4\%} = 150 \times \frac{104}{100} = ₹156$$

28. Select the number from among the given options that can replace the question mark (?) in the following series.

2, 6, 12, 20, 30, 42, ?

- (a) 60 (b) 50
(c) 52 (d) 56

Ans. (d) : The sequence of given series are as follows-



29. Solve the following -

$$\left[\left(1 + 4 - \frac{42}{14} + 65 \right) + \left\{ \frac{(2+7 \times 9)}{13} \right\} \times [(65+7-19)] + (19-39 \times 5) \right] \div 369 = ?$$

- (a) 224 (b) 234
(c) -24 (d) -25

Ans. (*) :

$$\left[\left(1 + 4 - \frac{42}{14} + 65 \right) + \left\{ \frac{(2+7 \times 9)}{13} \right\} \times [(65+7-19)] + (19-39 \times 5) \right] \div 369 = ?$$

$$= \left[\frac{67 + 5 \times 53 + (-176)}{369} \right]$$

$$= \frac{67 + 265 - 176}{369} = \frac{156}{369}$$

Note - Commission has considered option (c) as correct for this question.

30. Which of the following is used in plastics?

- (a) Butane (b) Ethylene
(c) Krypton (d) Ammonia

Ans. (b) : Ethylene gas is used to form plastic, rubber, and fiber. Ethylene is a simple molecule composed of two double bonded carbon atoms and four hydrogen atoms. At room temperature it is a gas.

31. The Nipah virus outbreak in 2018 took place in:

- (a) Tamil Nadu (b) Kerala
(c) Karnataka (d) Uttar Pradesh

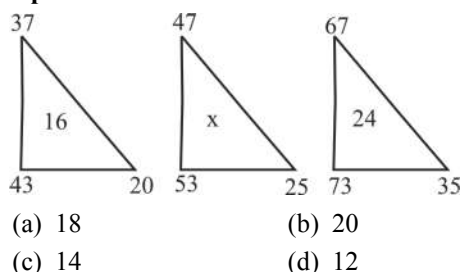
Ans. (b) : On 19 May 2018, a Nipah virus disease (NIV) outbreak was reported from Kozhikode district of Kerala, India. This was the first NIV outbreak in South India. There have been 17 deaths and 18 confirmed cases as of 1 June 2018. The affected districts are Kozhikode and Mallapuram. Nipah virus is a zoonotic virus, meaning that it can spread between animals and people. Nipah Virus was first recognized in 1999 during an outbreak among pig farmers in Malaysia.

32. Which of the following is the administrative capital of South Africa ?

- (a) Durban (b) Cape Town
(c) Pretoria (d) Bloemfontein

Ans. (c) : Pretoria is the administrative capital of South Africa. Cape Town is the legislative and Bloemfontein is the Judicial capital of South Africa.

33. Study the given pattern carefully and select the number from among the given options that can replace x.



Ans. (b) :

As like, in figure (i)

$$\left(\frac{37+43}{20} \right) \times 4 = 16$$

$$= \frac{80}{20} \times 4 = 16$$

$$16 = 16$$

As like, in figure (iii)

$$\left(\frac{67+73}{35} \right) \times 6 = 24$$

$$= \frac{140}{35} \times 6 = 24$$

$$24 = 24$$

Similarly, In figure (ii)

$$\left(\frac{47+53}{25} \right) \times 5 = x$$

$$\frac{100}{25} \times 5 = x$$

$$x = 20$$

34. The 'SATH-E' project is associated with which of the following fields?

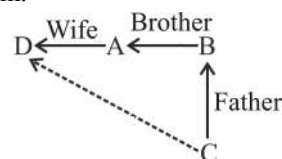
- (a) Transportation (b) Communication
(c) Education (d) Agriculture

Ans. (c) : Project SATH-E, 'Sustainable Action for Transforming Human Capital - Education'. was launched in 2017 to identify and build three 'role model' states for the school education sector. Its objective is to transform primary and secondary school education through driven practice.

35. If A is the brother of B, B is the father of C and D is the wife of A, then how is D related to C ?

- (a) Aunt (b) Niece
(c) Uncle (d) Nephew

Ans. (a) : According to question, on drawing blood relation diagram.



Hence, it is clear from diagram that D is Aunt of C.

36. Invertebrates do NOT include:

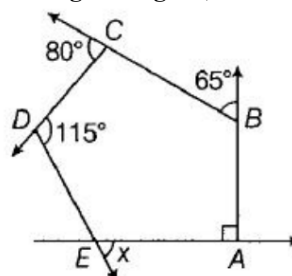
- (a) Arachnids (b) Insects
(c) Molluscs (d) Reptiles

Ans. (d) : An invertebrate is an animal that does not have a backbone.

Example – spiders, insects, mollusks, crabs lobsters etc.

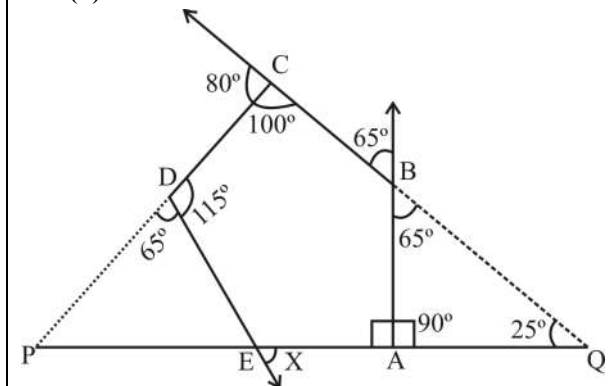
Approximate 97% of all animal species are invertebrate.

37. In the given figure, value of x is:



- (a) 65° (b) 70°
(c) 55° (d) 60°

Ans. (d) :



In the given figure, on extending CD and AE to P and CB and EA to Q.

In ΔPCQ

$$\angle P + \angle C + \angle Q = 180^\circ$$

$$\angle P + 100 + 25 = 180^\circ$$

$$\angle P + 125 = 180^\circ$$

$$\angle P = 55^\circ$$

In ΔPDE

$$\angle E = 180^\circ - 55^\circ - 65^\circ$$

$$\angle E = 60^\circ$$

$$\angle x = \angle E \quad (\because \text{Vertically opposite angle})$$

$$\angle x = 60^\circ$$

38. Where is the 'Zojila Tunnel Project' located?

- (a) Jammu & Kashmir (b) Sikkim
(c) Odisha (d) Uttar Pradesh

Ans. (a) : Zojila Tunnel is one of the longest tunnels in Asia. Zojila Tunnel Project located in Jammu & Kashmir. It is a 14.2 km long road tunnel under Zoji la Pass in the Himalayas. Zojila Pass is situated at an altitude of 11, 578 feet on the Srinagar - Kargil - Leh National Highway. The tunnel will provide all weather connectivity between Srinagar valley and Leh on NH-1.

39. 'Operation Greens' is a government scheme for:

- (a) General Price Levels of Crops
(b) Research and Investment in Crop Education
(c) Development of Bamboo Crops
(d) Supply Stabilization of TOP Crops (Tomato Onion Potato)

Ans. (d) : Ministry of Food Processing Industries launched "Operation Greens" scheme in November, 2016 for integrated development of Tomato, Onion and Potato crops (TOP crops) value chain with the objectives to enhance value realization of top farmers, reduction in post-harvest losses, price stabilization for producer and consumers and increase in food processing capacities and value addition etc.

40. India's longest road-cum-rail bridge, connecting Assam and Arunachal Pradesh, is called the :

- (a) Godavari Bridge (b) Bogibeel Bridge
(c) Howrah Bridge (d) Pamban Bridge

Ans. (b) : The Bogibeel Bridge is a combined road and rail bridge over the Brahmaputra River in the north-eastern Indian state of Assam between Dhemaji district (Arunachal Pradesh) and Dibrugarh district (Assam) and started in 2002. It is the longest rail - cum-road bridge in India, measuring 4.94 km.

41. On the first day 84500 people visited a trade fair. On the 4th day number reduced to 16900. By what percentage people reduced on the 4th day?

- (a) 80% (b) 0%
(c) 75% (d) 20%

Ans. (a) : Number of people on the 4th Day = 84500 – 16900

$$= 67600$$

$$\text{Reduced percentage} = \frac{67600}{84500} \times 100 = 80\%$$

42. Which of the following is an ancient Buddhist text?

- (a) Vishnu Purana (b) Raghuvansham
(c) Ritusamhara (d) Abhidharma Kosha

Ans. (d) : Abhidharma Kosha is an ancient Buddhist texts which contains detailed scholastic presentations of doctrinal material appearing in the Buddhist Sutras.

43. What is the full form of DHCP in networking system?

- (a) Display House Control Protocol
(b) Dynamic Host control Point
(c) Dynamic Host Configuration Protocol
(d) Data Host Control Panel

Ans. (c) : The full form of DHCP is Dynamic Host Configuration Protocol. A dynamic host configuration protocol is a network protocol that serves to assign Internet Protocol (IP) address and other relation configuration information such as default gateways and subnet masks to network devices. DHCP majorly used to dynamically configure network devices that are connected to the network.

44. The Bering Strait connects the:

- (a) Indian Ocean and Java Sea
(b) Arctic Ocean and Pacific Ocean
(c) Mediterranean Sea and Atlantic Ocean
(d) Atlantic Ocean and Gulf of Hudson

Ans. (b) :

Straits/Canals	Separates	Connects
Bering Strait	Alaska & Siberia	Arctic Ocean & Pacific Ocean
Suez Canal	Passes through Egypt	Mediterranean Sea & Red Sea
Panama Canal	Passes through Republic of Panama	Pacific Ocean & Atlantic

		Ocean
English Channel	England & France	North Sea & Atlantic Ocean
Ten Degree Channel	Andaman and Nicobar Islands	—

45. A metallic part of a machine is made from a mixture of copper, zinc and lead mixed in the ratio of 13 : 6 : 1. If the weight of zinc in this part is 90 kg, then the total weight of the part will be:

- (a) 285 kg (b) 195 kg
(c) 210 kg (d) 300 kg

Ans. (d) : Let weight of copper in metallic part = $13x$

Weight of zinc in metallic part = $6x$

Weight of Lead in metallic part = x

According to question

$$6x = 90 \text{ kg}$$

$$x = 15 \text{ kg}$$

Hence, Total weight = $13x + 6x + x$

$$= 20x$$

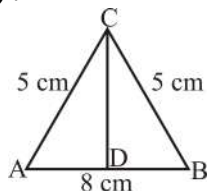
$$= 20 \times 15$$

$$= 300 \text{ kg}$$

46. The base of an isosceles triangle is 8 cm and one of its equal sides is 5 cm. The height of the vertex opposite to the base from the base is:

- (a) 4 cm (b) 2 cm
(c) 3 cm (d) 5 cm

Ans. (c) :



$$AD = \frac{1}{2} \times 8$$

$$AD = 4 \text{ cm}$$

In $\triangle ADC$

$$DC = \sqrt{AC^2 - AD^2}$$

$$DC = \sqrt{5^2 - 4^2}$$

$$DC = \sqrt{25 - 16}$$

$$DC = \sqrt{9}$$

$$DC = 3 \text{ cm}$$

47. Four natural resources are listed, out of which three are alike in some manner and one is different. Select the odd one.

- (a) Solar (b) Coal
(c) Wind (d) Water

Ans. (b) : Water, Solar and Wind are renewable resources whereas Coal is non-renewable resource. Hence, option (b) is odd one.

48. Who wrote the great literary work 'Mrichhakatika'?

- (a) Shudraka (b) Kalidasa
(c) Bhaasa (d) Harsha

Ans. (a) : A social drama 'Mrichhakatika' depicting bitter truth was written in Sanskrit language by Maharaja Shudrak in the 2nd Century BC.

49. Which of the following is NOT related to Centre- State relations in India?

- (a) Rajamannar Committee
(b) Sarkaria Commission
(c) Punchhi Commission
(d) Kothari Commission

Ans. (d) : Kothari Commission was constituted on 14 July, 1964 under the chairmanship of Dr. D.S. Kothari with 17 members, which is known as National Education Commission 1964.

50. Who is the author of the book 'Republic'?

- (a) Plato (b) John Ruskin
(c) TS Eliot (d) Leo Tolstoy

Ans. (a) : 'The Republic' was authored by the great thinker Plato in 375 B.C. Plato is considered as the founder of Western Political Philosophy. Plato was the founder of the platonist school of thought and the Academy. It was the first school of higher learning in the Western World.

51. Value of $\cos 1^\circ \cos 2^\circ \cos 3^\circ \dots \cos 179^\circ$ is :

- (a) 0 (b) -1
(c) 1 (d) $\frac{1}{2}$

Ans. (a) : $\cos 1^\circ \cos 2^\circ \cos 3^\circ \dots \cos 179^\circ = 0$ { $\because \cos 90^\circ = 0$ }

52. The sum of two numbers is 20 and their difference is 2.5. Ratio of these numbers will be

- (a) 9 : 7 (b) 2 : 7
(c) 3 : 5 (d) 7 : 9

Ans. (a) : Suppose the numbers are x and y respectively.

According to the question,

$$x + y = 20 \text{ (i)}$$

$$x - y = 2.5 \text{ (ii)}$$

On solving the equation (i) and (ii),

$$2x = 22.5$$

$$x = \frac{22.5}{2}$$

$$y = 20 - \frac{22.5}{2} \quad [\text{From equation (i)}]$$

$$y = \frac{17.5}{2}$$

Hence, the ratio of numbers $(x : y) = \frac{22.5}{2} : \frac{17.5}{2} = 9 : 7$

53. A cuboid having the surface area of 3 adjacent faces as a, b, c has the volume:

- (a) $(abc)^{\frac{1}{2}}$ (b) $a^3b^3c^3$
(c) abc (d) $(abc)^{\frac{1}{3}}$

Ans. (a) : Given,

Length \times Breadth = a _____ (i)

Breadth \times Height = b _____ (ii)

Height \times Length = c _____ (iii)

On multiplying equation (i), (ii) and (iii),

$$(L \times B \times H)^2 = a \times b \times c$$

Hence, Volume = Length \times Breadth \times Height = $(abc)^{\frac{1}{2}}$

54. Which is the 29th State of India created in 2014?

- (a) Telangana (b) Sikkim
(c) Jharkhand (d) Uttarakhand

Ans. (a) : Telangana was created on 2 June 2014 from the former districts of north-western Andhra Pradesh. Its capital is Hyderabad.

Note : - Now there are only 28 states in India as Jammu & Kashmir has been removed from the state list due to abrogation of Article (370) and it has become two India Union territories. There are only 28 states and 8 Union territories in India.

55. Solve the following ?

$$(x-y)^3 + (y-z)^3 + (z-x)^3 = ?$$

- (a) 3xyz
(b) $(x-y)(y-z)(z-x)$
(c) $3(x-y)(y-z)(z-x)$
(d) $(x+y+z)(x^2+y^2+z^2)$

Ans. (c) : $(x-y)^3 + (y-z)^3 + (z-x)^3$
 $A^3 + B^3 + C^3 = (A+B+C)(A^2+B^2+C^2-AB-BC-CA) + 3ABC$
 $= \{(x-y) + (y-z) + (z-x)\} \{(x-y)^2 + (y-z)^2 + (z-x)^2 - (x-y)(y-z) - (y-z)(z-x) - (z-x)(x-y)\} + 3(x-y)(y-z)(z-x)$
 $= 0 \times \{(x-y)^2 + (y-z)^2 + (z-x)^2 - (x-y)(y-z) - (y-z)(z-x) - (z-x)(x-y)\} + 3(x-y)(y-z)(z-x)$
 $= 3(x-y)(y-z)(z-x)$

56. The Big Bang theory was propounded by:

- (a) Thomas Gold (b) Al- Biruni
(c) George Lamaitre (d) Dr. Allen Sundes

Ans. (c) : 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. Georges Lemaitre was Belgian Cosmologist, Catholic Priest and propounder of Big-Bang theory.

57. Where are the headquarters of the OECD is located?

- (a) Rome (b) Geneva
(c) New York (d) Paris

Ans. (d) : Organisation for Economic Co-operation and Development (OECD) is headquartered in Paris, France. The OECD was officially founded on 30 September 1961, Mathias Cormann is the current Secretary General of OECD and the first Secretary General was Robert Maryolin (1948–1955). It is an intergovernmental economic organization whose purpose is to promote economic progress and world trade. It has 38 member countries.

58. A shopkeeper sold two toys for ₹990 each. On first toy he gained 10% and on the second he lost 10%. Find the total percentage gain or loss.

- (a) 10% Loss (b) 10% Gain
(c) 1% Loss (d) 1% Gain

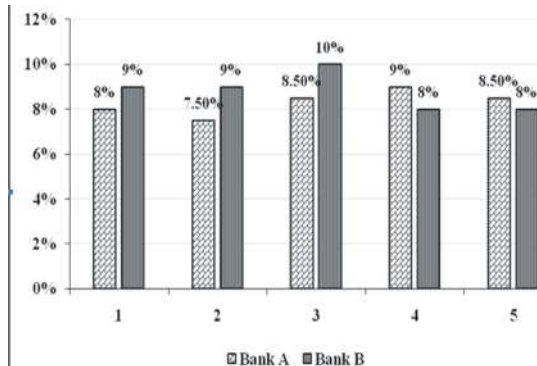
Ans. (c) : Selling Price of the toy = 990 + 990
= ₹ 1980

According to question,

$$\begin{aligned} \text{Cost Price} &= 990 \times \frac{100}{110} + 990 \times \frac{100}{90} \\ &= 900 + 1100 \\ &= ₹ 2000 \end{aligned}$$

$$\begin{aligned} \text{Loss \%} &= \frac{2000 - 1980}{2000} \times 100 \\ &= \frac{20}{2000} \times 100 \\ &= 1\% \end{aligned}$$

59. The given chart gives interest rates offered on deposits by two banks A and B for a period of 5 years (1–5). What would be the difference in interest amount earned in year 3, if a person had deposited ₹23 lakhs at the beginning of the year in bank B instead of in bank A?



- (a) ₹41,200 (b) ₹28,800
(c) ₹37,600 (d) ₹34,500

Ans. (d) :

The difference in the amount of interest received in the 3 year = $2300000 \times \frac{(10-8.5)}{100}$
= 23000×1.5
= ₹ 34500

60. Which eminent person is associated with Bardoli?

- (a) Guru Nanak
(b) Mahavir
(c) Aurobindo Ghosh
(d) Sardar Vallabhbhai Patel

Ans. (d) : In February 1928, Sardar Vallabh Bhai Patel led the Bardoli Satyagraha where Vallabh Bhai Patel got the title of 'Sardar' by women. Bardoli Satyagraha has started after the increasing of unfair taxes which the farmers of Bardoli had to pay to the British government.

61. Which state is the largest producer of gold in India?

- (a) Karnataka (b) Telangana
(c) Jharkhand (d) Chhattisgarh

Ans. (a) : Karnataka is the largest producer of gold in India. The state has reserves of 17 million tonnes of gold ore containing 42- 023 kg of metal, mainly in Kolar, Dharwad, Hassan and Raichur districts.

62. Find the number of all prime numbers less than 55.

- (a) 18 (b) 17
(c) 16 (d) 15

Ans. (c) : There are 16 prime numbers less than 55 which are –
(2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43, 47, 53)

63. A sum of money amounts to ₹1600 in two years and ₹1700 in three years, at compound interest, compounded annually. What is the rate of interest.

- (a) 6.5% (b) 6.25%
(c) 6% (d) 7%

Ans. (b) : $A = P \times \left(1 + \frac{r}{100}\right)^t$

According to question,

$$1600 = P \left(1 + \frac{r}{100}\right)^2 \text{ ————— (i)}$$

and $1700 = P \left(1 + \frac{r}{100}\right)^3 \text{ ————— (ii)}$

on dividing equation (i) by eqⁿ (ii)–

$$\frac{1600}{1700} = \frac{P \left(1 + \frac{r}{100}\right)^2}{P \left(1 + \frac{r}{100}\right)^3}$$

$$\frac{16}{17} = \frac{1}{\left(1 + \frac{r}{100}\right)}$$

$$\frac{16}{17} = \frac{100}{100 + r}$$

$$1600 + 16r = 1700$$

$$16r = 100$$

$$r = 6.25\%$$

64. In the context of computers, tracker balls is a/an _____ device.

- (a) Output (b) Storage
(c) Input (d) Processing

Ans. (c) : A trackball is an input device used to enter motion data into computers or other electronic devices. Instead of moving the whole device, you simply roll the moveable ball on top of the trackball unit with your hand to generate motion input.

65. As of October 2020, who is the Chairman of the Fifteenth Finance Commission of India?

- (a) AM Khusro (b) Shaktikanta Das
(c) NK Singh (d) Vijay L kelkar

Ans. (c) : As of October 2020, NK Singh is the chairman of the 15th Finance Commission of India. The Finance Commission is periodically constituted by the President of India under Article 280 of the Indian Constitution to define the financial relations between the central government and the state governments.

66. Who founded the 'Slave Dynasty'?

- (a) Qutb-ud-din Aibak
(b) Razia Sultan
(c) Ghiyas-ud-din Balban
(d) Nasir-ud-din Mahmud

Ans. (a) : The Slave dynasty lasted from 1206 to 1290. It was the first Muslim dynasty to rule in India and was founded by sultan Qutb-ud-din-Aibak.

67. In a certain code language, VIARAIL is written as XKCTCKN. How will STRATEGY be written as in that language?

- (a) UVTCVFIA (b) UVTCVGIA
(c) UVTCVGIZ (d) UWTCVGIA

Ans. (b) :

As like,	Similarly,
V $\xrightarrow{+2}$ X	S $\xrightarrow{+2}$ U
I $\xrightarrow{+2}$ K	T $\xrightarrow{+2}$ V
A $\xrightarrow{+2}$ C	R $\xrightarrow{+2}$ T
R $\xrightarrow{+2}$ T	A $\xrightarrow{+2}$ C
A $\xrightarrow{+2}$ C	T $\xrightarrow{+2}$ V
I $\xrightarrow{+2}$ K	E $\xrightarrow{+2}$ G
L $\xrightarrow{+2}$ N	G $\xrightarrow{+2}$ I
	Y $\xrightarrow{+2}$ A

Hence, STRATEGY = UVTCVGIA

68. Solve the following

$$(4+2-16 \div 4+3) + \{(1+8 \times 7) \div 19\} \times [(3+5-4) + (17-9 \times 4)] = ?$$

- (a) -40 (b) 40
(c) -225 (d) 335

Ans. (a) : $(4 + 2 - 16 \div 4 + 3) + \{(1 + 8 \times 7) \div 19\} \times [(3 + 5 - 4) + (17 - 9 \times 4)]$
 $= (6 - 4 + 3) + \{57 \div 19\} \times [4 + (-19)]$
 $= 5 + 3 \times (-15)$
 $= 5 - 45$
 $= -40$

69. Which is the first nuclear reactor made in India?

- (a) CIRUS (b) Dhruva
(c) KAMINI (d) Apsara

Ans. (d) : India's and Asia's first nuclear reactor, Apsara became operational from 4 August 1956. The reactor was designed by the Bhabha Atomic Research Centre (BARC) and built with assistance from the UK. CIRUS (Canada India Reactor Utility Services) was the second nuclear reactor to be built in India.

70. Which is India's first ever Innovative advanced Earth Observation Satellite launched in 2018?

- (a) APPLE (b) GSAT-2
(c) GSAT-7 (d) HySIS

Ans. (d) : HySIS satellite was launched on 29 November 2018. HySIS is an earth observation satellite that provides hyper spectral imaging services to India for a range of applications in agro-forestry and geographical assessment such as coastal areas and in land water ways.

71. Which of the following welfare schemes' achievements have been recognized by the Guinness World Records ?

- (a) Pradhan Mantri Krishi Sinchai Yojana
(b) Pradhan Mantri Jan Dhan Yojana
(c) Pradhan Mantri Suraksha Bima Yojana
(d) Pradhan Mantri kaushal Vikash Yojana

Ans. (b) : The world's largest financial inclusion scheme Pradhan Mantri Jan-Dhan Yojana was announced by Prime Minister Narendra Modi on 15 August 2014 from the historic Red Fort, which was launched on 28 August 2014 across the country. The Guinness Book of World Records has appreciated the achievements of Pradhan Mantri Jan-Dhan Yojana. The highest number of bank accounts opened in 1 week as a part of financial inclusion campaign is 18, 096, 130. The Department of Financial Services, Government of India achieve this feat between 23 to 29 August 2014.

72. If 3 men or 6 boys can complete a task in 20 days, how many days will 6 men and 8 boys take to do the same task?

- (a) 16 (b) 10
(c) 6 (d) 15

Ans. (c) : $3M = 6B$ [M - Man, B - Boy]

$$M = 2B$$

Let the time taken by the men and the boys together to complete the work = x

According to the question,

$$3M \times 20 = (6M + 8B)x$$

$$6B \times 20 = (12B + 8B)x$$

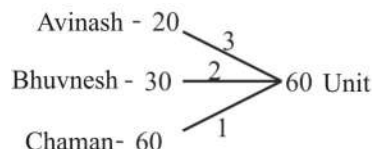
$$\frac{120B}{20B} = x$$

$$x = 6 \text{ days}$$

73. Avinash, Bhuvnesh and Chaman can complete a piece of work in 20, 30 and 60 days respectively. In how many days can Avinash complete the work if he is assisted by Bhuvnesh and Chaman on every third day?

- (a) 12 (b) 16
(c) 18 (d) 15

Ans. (d) :



According to question,

Time taken by Avinash to complete the work

$$= \frac{60 \times 3}{3 \times 3 + 2 + 1}$$

$$= \frac{60 \times 3}{12} = 15 \text{ days}$$

74. If the difference between a number and its 25% is 24, then the number is?

- (a) 28 (b) 32
(c) 40 (d) 34

Ans. (b) : Suppose number is x.

According to question,

$$x - x \times \frac{25}{100} = 24$$

$$\frac{75x}{100} = 24$$

$$x = \frac{24 \times 100}{75}$$

$$x = 32$$

75. 'Obey' is related to 'Disobey' in the same way as 'Appoint' is related to '_____'.
 (a) Dismiss (b) Dissent
 (c) Disappear (d) Eliminate

Ans. (a) : As like opposite of Obey is Disobey similarly opposite of Appoint is Dismiss.

76. Who was the Viceroy when the Royal Commission on Civil Services was formed in 1912 ?
 (a) Lord Curzon (b) Lord Dufferin
 (c) Lord Hardinge (d) Lord Irwin

Ans. (c) : Lord Hardinge was the Viceroy when the Royal Commission on Civil Services was formed in 1912. During Hardinge's administration, King George-V and the queen Mary visited India in 1911 and their coronation ceremony was gorgeously proclaimed at the Delhi Durbar.

77. Solve the following
 $6202.5 + 620.25 + 62.025 + 6.2025 + 0.62025 = ?$
 (a) 6891.59675 (b) 5892.59775
 (c) 6791.59775 (d) 6891.59775

Ans. (d) :
 $6202.5 + 620.25 + 62.025 + 6.2025 + 0.62025$
 $= 6891.59775$

78. In the following expression which number should be added so that it becomes a complete square?
 $1 + 3 + 7 + 9 + 11 + 13$

- (a) 1 (b) 3
 (c) 7 (d) 5

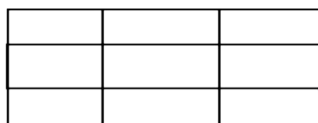
Ans. (d) : $1 + 3 + 7 + 9 + 11 + 13$
 $= 44$
 Number $= 44 + 5 = 49 = (7)^2$
 Hence, 5 should be added in 44 so that it becomes a complete square.

79. The value of $\cos 12^\circ + \cos 84^\circ + \cos 168^\circ + \cos 96^\circ$ is:

- (a) -1 (b) 0
 (c) 1 (d) 0.5

Ans. (b) : $\cos 12^\circ + \cos 84^\circ + \cos 168^\circ + \cos 96^\circ$
 $= \cos 12^\circ + \cos 84^\circ + \cos(180^\circ - 12^\circ) + \cos(180^\circ - 84^\circ)$
 $= \cos 12^\circ + \cos 84^\circ - \cos 12^\circ - \cos 84^\circ$
 $= 0$

80. How many rectangles are there in the given figure?



- (a) 32 (b) 42
 (c) 28 (d) 36

Ans. (d) : In the given figure the number of rectangle are 36 which are as follows :

1	2	3
2		
3		

Total numbers rectangles = (row \times column)

Total number of rows = $1 + 2 + 3 = 6$

Total number of columns = $1 + 2 + 3 = 6$

Total rectangles = $6 \times 6 = 36$

81. Sunila had $9\frac{1}{4}$ kg of flour to make bread with.

If the recipe says that she needs $1\frac{1}{8}$ kg to make one loaf of bread, how many loaf can she make? Estimate to the nearest whole number.

- (a) 8 (b) 7
 (c) 9 (d) 10

Ans. (a) :

$$\begin{array}{r} 1 \quad 37 \\ 9 - \quad - \\ \hline \end{array}$$

$$\text{Number of loaves} = \frac{4}{4} = \frac{4}{4}$$

$$\begin{array}{r} 1 \quad 9 \\ 1 - \quad - \\ \hline 8 \quad 8 \end{array}$$

$$\frac{37 \times 8}{4 \times 9} = \frac{74}{9} = 8.22$$

Hence, number of loaves = 8

82. In which year did the disinvestment process in Public Sector Enterprises in India Start?

- (a) 1991 (b) 2018
 (c) 2000 (d) 1990

Ans. (a) : When the government sells a part of its equity of a public enterprise less than 50% of its total stock, it is called disinvestment and in this case control and management of the business enterprise remains in the hands of Government. In 1991, the process of disinvestment was started in India in Public Sector Enterprises.

83. In a game Rajesh lost $\frac{1}{3}$ of his money in the first round of the game, in the second round he losses $\frac{3}{5}$ of his remaining money and in the third round he lost $\frac{4}{7}$ of the rest. He is left with what part of the original sum of money.

- (a) $\frac{4}{15}$ (b) $\frac{4}{45}$
 (c) $\frac{2}{5}$ (d) $\frac{4}{35}$

Ans. (d) : L.C.M. of 3, 5, 7 = 105 (which is original part)

According to question—

Amount lost in the first round = $\frac{1}{3}$ part of the total amount

$$= 105 \times \frac{1}{3} = 35$$

Remaining amount after the first round = $105 - 35 = 70$

Amount lost in the second round = $\frac{3}{5}$ part of the

remaining amount = $70 \times \frac{3}{5} = 42$

Remaining amount after the second round = $70 - 42 = 28$

Amount lost in the third round = $\frac{4}{7}$ part of the remaining

amount = $28 \times \frac{4}{7} = 16$

Remaining amount after the third round = $28 - 16 = 12$

Hence remaining share of original amount = $\frac{12}{105} = \frac{4}{35}$

84. Which state does NOT have a Vidhan Parishad (Legislative Council)?

- (a) Karnataka (b) Telangana
(c) Maharashtra (d) Kerala

Ans. (d) : As of January 2020, 6 out of 28 states have a State Legislative Council (Vidhan Parishad). These are Andhra Pradesh, Karnataka, Telangana, Maharashtra, Bihar and Uttar Pradesh. The latest state to have a council is the Telangana.

85. Which of the following is composed of nerve fibres that mediate reflex actions and that transmit impulses to and from the brain?

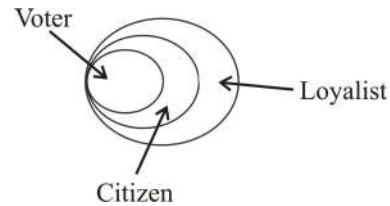
- (a) Muscles (b) Rib cage
(c) Heart (d) Spinal Cord

Ans. (d) : Spinal cord, major nerve tract of vertebrates, extending from the base of the brain through the canal of nerve fibres that mediate reflex actions and that transmit impulses to and from the brain.

86. The conclusion that follows from the premises 'All voters are citizens' and 'All citizens are loyalists' is:

- (a) All loyalists are citizens
(b) All voters are loyalists
(c) All citizens are voters
(d) All loyalists are voters

Ans. (b) : On making the diagram as per question –



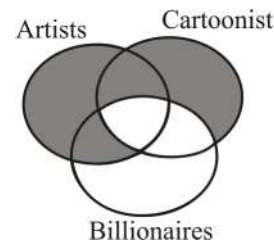
Hence, it is clear from diagram that. All voters are loyalists.

87. 'Little knowledge is a dangerous thing' is a decision based on:

- (a) Incomplete information may cause harm
(b) Informal learning is not satisfactory
(c) Little things are dangerous
(d) Ignorance is bliss

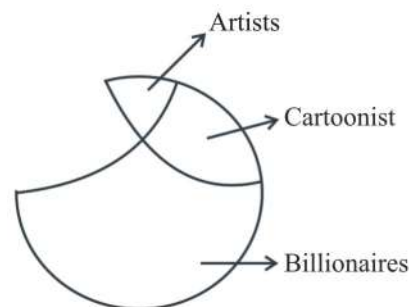
Ans. (a) : "Little knowledge is a dangerous things" is a decision based on "Incomplete information may cause harm".

88. In the given Venn diagram, assuming that the shaded areas do not exist, determine which conclusion can be validly drawn ?



- (a) All billionaires are artists
(b) All cartoonists are artists
(c) No artists are billionaires
(d) All artists are cartoonists

Ans. (d) : In given venn diagram assuming that shaded areas do not exist.



It is clear from the above diagram that the conclusion of option (d) "All artists are cartoonists" can be drawn.

89. Which of the following is a mirror image of the word ENCOURAGEMENT?

- (a) TNEEMETARGUONE
(b) TNEEMETARGUONE
(c) TNEEMETARGUONE
(d) TNEEMETARGUONE

Ans. (a) : ENCOURAGEMENT is the mirror image of the word 'ENCOURAGEMENT'.

90. Select the number from among the given options that can replace the question mark (?) in the following matrix.

14	12	10	8
10	8	2	4
8	14	6	16
12	18	14	?

- (a) 18 (b) 16
(c) 10 (d) 20

Ans. (d) : As like, in column (i), (ii) and (iii) respectively—

$$14 - (10 - 8) = 12$$

$$12 - (8 - 14) = 18$$

and $10 - (2 - 6) = 14$

Similarly, in column (iv)

$$8 - (4 - 16)$$

$$= 8 + 12$$

$$= 20$$

91. Select the option that is related to the third letter-cluster in the same way as the second letter-cluster is related to the first letter-cluster.

AEJ : ZVQ :: BFK : ?

- (a) LPT (b) YUP
(c) CGP (d) TPL

Ans. (b) : As like,

A $\xrightarrow{\text{Opposite}}$ Z

E $\xrightarrow{\text{Opposite}}$ V

J $\xrightarrow{\text{Opposite}}$ Q

Similarly,

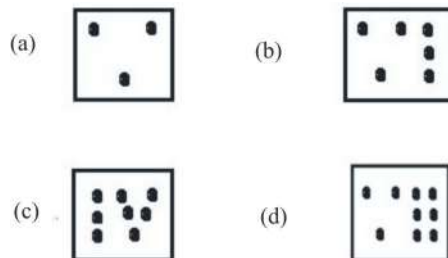
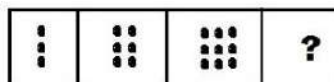
B $\xrightarrow{\text{Opposite}}$ Y

F $\xrightarrow{\text{Opposite}}$ U

K $\xrightarrow{\text{Opposite}}$ P

Hence, $\boxed{? = YUP}$

92. Study the given pattern carefully and select the image from among the given option that can replace the question mark (?).



Ans. (c) : In the given pattern Roman numerals are presented by points. The next pattern figure is contained in option (c)

(Hence, Roman Numerals - I, II, III, IV,.....)

93. Select the number from among the given options that can replace the question mark (?) in the following series.

1, 9, 25, 49, 81, ?

- (a) 91 (b) 121
(c) 94 (d) 111

Ans. (b) : The sequence of the given number series is as follows –

1	9	25	49	81	$\boxed{121}$
\downarrow	\downarrow	\downarrow	\downarrow	\downarrow	\downarrow
1^2	3^2	5^2	7^2	9^2	11^2

Hence, $? = 121$

94. Four equipment are listed, out of which three are alike in some manner and one is different. Select the odd one.

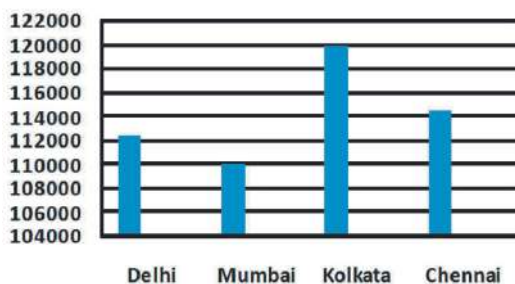
- (a) Dropper (b) Beaker
(c) Test tube (d) Compass

Ans. (d) : The relation of Dropper, Beaker and Test tube is the lab equipment used for handling liquids whereas Compass is a direction indicator tool.

Hence option (d) is odd one.

95. The average household expenditure in four metros Delhi, Mumbai, Kolkata and Chennai is given in the graph. What is the ratio of the highest average household expenditure to the lowest average household expenditure.

Average Household Expenditure



- (a) 11 : 23 (b) 12 : 11
(c) 11 : 12 (d) 23 : 11

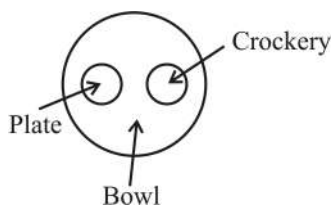
Ans. (b) : Highest average household expenditure is of Kolkata = 120000
Lowest average household expenditure is of Mumbai = 110000
Required ratio = 120000 : 110000
= 12 : 11

96. Select the Venn diagram that best represents the relationship between the following classes.

Crockery, Plate, Bowl

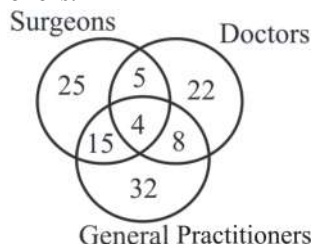
- (a)
- (b)
- (c)
- (d)

Ans. (d) : Crockery means porcelain and the Plate and Bowl come under the utensils.



Therefore, the Venn diagram of option (d) best represents the relationship between the given classes.

97. From the given Venn diagram, find the number of doctors who are surgeons but not general practitioners.



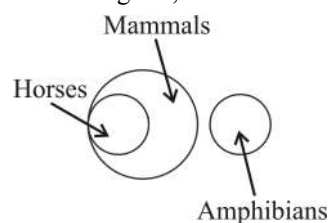
- (a) 5 (b) 8
(c) 9 (d) 4

Ans. (a) : It is clear from Venn diagram that the number of doctors who are surgeons but not general practitioners are 5.

98. The conclusion that follows from the premises 'All horses are mammals' and 'No mammals are amphibians' is:

- (a) Some horses are amphibians
(b) No amphibians are horses
(c) Every amphibian is a horse
(d) All horses are amphibians

Ans. (b) : According to question,
On drawing a Venn diagram,



It is clear from the Venn diagram that the conclusion "No amphibians are horses", follows the above statements. Hence option (b) is correct.

99. In a certain code language, PENINSULA is written as 111. How will DICHOTOMY be written as in that language?

- (a) 222 (b) 121
(c) 212 (d) 112

Ans. (d) : As like,

P	E	N	I	N	S	U	L	A										
16	+	5	+	14	+	9	+	14	+	19	+	21	+	12	+	1	=	111

Similarly,

D	I	C	H	O	T	O	M	Y										
4	+	9	+	3	+	8	+	15	+	20	+	15	+	13	+	25	=	112

100. Select the number from among the given options that can replace that question mark (?) in the following series.

3, 13, 23, 43, 53, 73, 83, 103, 113, ?

- (a) 173 (b) 183
(c) 163 (d) 153

Ans. (c) : The sequence of the given number series is as follows –

3, 13, 23, 43, 53, 73, 83, 103, 113, ?

The given numbers in the series are prime numbers. According to the alternatives, option (c) 163, which is the nearest prime number that comes after the prime number 113. Hence option (c) will complete the number series.

Railway Non-Technical Popular Categories Exam - 2019

Graduate and Under-Graduate Level

[Ist Stage Computer Based Test]

Exam Date : 04.01.2021]

[Time : 03:00 pm-04:30 pm

1. As of November 2020, how many nuclear power reactors are operating in India?
 (a) 20 (b) 23
 (c) 22 (d) 21

Ans. (c) : As of November 2020, India has total 8 nuclear houses in which 22 nuclear reactors are operational. National Power Corporation of India is operating these nuclear reactors. In the given, 18 reactors are of PHWR type and remaining 4 are of simple hydro reactors. India's first nuclear reactor is 'Apsara'.

2. 20 men and 15 boys can do a piece of work in 10 days. 25 men and 10 boys can do it in 9 days. Find the ratio of the daily work done by a man to that of a boys.
 (a) 14:15 (b) 5:14
 (c) 12:5 (d) 5:12

Ans. (c) :

$$10(20M + 15b) = 9(25M + 10b)$$

(Where M–Man, b–Boy)

$$200M + 150b = 225M + 90b$$

$$25M = 60b$$

$$M : b = 12 : 5$$

3. Who founded the Muhammad Anglo- Oriental college in 1875 which later became Aligarh Muslim University?
 (a) Zakir Hussain
 (b) Mohammad Ali Jinna
 (c) Maulana Abul Kalam Azad
 (d) Syed Ahmed Khan

Ans. (d) : In 1875, Muhammad Anglo Oriental College was established by Sir Syed Ahmed Khan, which later on developed as Aligarh Muslim University. Ahmed Khan was social servant, journalist, social reformer etc and wrote a book known as "Asbab – e - Bagawate Hind" on the Great Indian revolt of 1857.

4. What is the other name of Newton's first law of motion?
 (a) Law of momentum
 (b) Law of movement
 (c) Law of inertia
 (d) Law of displacement

Ans. (c) : The first law of Newton is also termed as law of Inertia. It states that a body in rest or moving position continues to be in such state, untill and unless an external force is applied.

The second law of Newton says that force applied on a body is equal to product of its mass and acceleration.

$$f = m \times a$$

The third law of Newton mentions about action-reaction process.

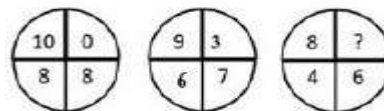
5. When was the first Passenger train run in India?
 (a) 1856 (b) 1853
 (c) 1854 (d) 1857

Ans. (b) : The first train in India ran from Mumbai to Thane covering a distance of 34 km. In 1853 under tenure of Lord Dalhousie. Indian railway is the fourth largest railway network in world.

6. The Southern most tip of Indian territory is _____
 (a) Cape Comorin (b) Kanyakumari
 (c) Karondi (d) Indira Point

Ans. (d) : Northernmost Point → Indira Col (Ladakh)
 Southernmost Point → Indira Point formally known as Pygmalion Point. (Great Nicobar)
 Southern most point of India's mainland – Cape Comorin (Kanya Kumari, Tamil Nadu)
 Easternmost Point → Kibuthu (Arunchal Pradesh)
 Westernmost Point → GuharMoti or Ghuar mota or Sir Creek (Gujarat)

7. Study the given pattern carefully and select the number from among the given options that can replace the question mark(?)



- (a) 8 (b) 5
 (c) 9 (d) 7

Ans. (a) : Just as,

$$10 \times 8 = 80 \quad \text{and} \quad 9 \times 7 = 63$$

$$80 = 80 \quad 63 = 63$$

Same as,

$$8 \times 6 = 4 ?$$

$$48 = 4 ?$$

$$? = 8$$

8. In which year was the construction of Jama Masjid of Delhi completed?
 (a) 1653 (b) 1655
 (c) 1652 (d) 1656

Ans. (d) : The Jama Mosque (Masjid) of Delhi was constructed in between 1650 – 1656 during tenure of Shahjahan. It is also known as Masjid - e - Jahanuma, which denotes notion of conquering the whole world. It consists of 4 gates, 4 pillars and 2 towers. It is made up of Red Sandstone and marbles.

9. 24 mango trees, 56 apple trees and 72 orange trees have to be planted in rows such that each row contains the same number of trees of one variety only. Find the minimum number of rows in which the above mentioned trees may be planted.

- (a) 15 (b) 18
(c) 17 (d) 19

Ans. (d) :

(Number of total columns \times Number of total rows)

$$8 \times 3$$

$$8 \times 7$$

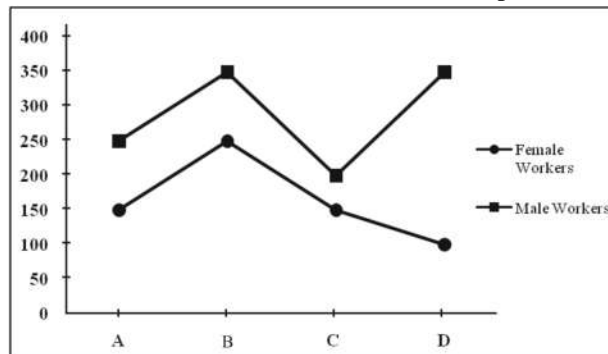
$$8 \times 9$$

$$8(3 + 7 + 9) = \text{Total number of trees}$$

$$\text{Total number of trees} = 19$$

10. Observe the graph and answer the question below.

The graph represents the number of male and female workers in four different companies.



Which company has the maximum difference in the number of male and female employees ?

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

Ans. (c) : From the given graph –

In company A

Number of males = 250

Number of females = 150

Required difference = $250 - 150 = 100$

In company B

Number of males = 350

Number of females = 250

Required difference = $350 - 250 = 100$

In company C

Number of males = 200

Number of females = 150

Required differences = $200 - 150 = 50$

In company D

Number of males = 350

Number of females = 100

Required difference = $350 - 100 = 250$

It is clear that the difference between the number of male and female employees is maximum in company D.

11. GSAT-31 is an/a _____

- (a) Navigational Satellite
(b) Telecommunication Satellite
(c) Polar Satellite
(d) Experimental Satellite

Ans. (b) : GSAT-31 is a telecommunication satellite which was launched with the help of European Launch service provider Ariane space's rocket from spaceport of French Guiana. GSAT-31 will dedicate its services to mainland and islands of India. It's the nation's 4G telecommunication satellite which will provide the Digital Satellite News Integration and DTH services for next 15 years.

* GSAT-31 is India's 40th Communication Satellite.

* The GSAT-31 will replace the Satellites 'INSAT-4CR' and 'INSAT-4A'.

12. When was Gandhi Smriti and Darshan Samiti (GSDS) formed?

- (a) September 1984 (b) September 1986
(c) September 1985 (d) September 1987

Ans. (a) : GSDS \rightarrow Gandhi Smriti and Darshan Samiti is an organisation established in Sept, 1984. The main objective of the Samiti is to foster the proliferation of Gandhian philosophy and policies.

13. The Buland Darwaza at Fatehpur Sikri was erected by Akbar to celebrate his conquest of _____.

- (a) Kashmir (b) Gujarat
(c) Bengal (d) Mewar

Ans. (b) : The Buland Darwaza of Fatehpur was constructed in 1601 by Akbar as a memoir of his Gujarat Campaign Victory. It is also known as Victory Gate. It is also considered as the highest entry gate of the world. In 1571 Akbar shifted his capital to Fatehpur Sikri but after lack of water there, he returned it back to Agra.

14. Which acid is present in the ant sting?

- (a) lactic Acid (b) Methanoic acid
(c) Acetic Acid (d) Tartaric acid

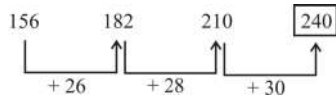
Ans. (b) : Resources	Acids
Ant bites	Methanoic acid/formic Acid
Curd	Lactic acid
Vinegar	Acetic acid
Tamarind	Tartaric acid

15. Select the number from among the given options that can replace the question mark (?) in the following series.

156, 182, 210?

- (a) 240 (b) 236
(c) 210 (d) 202

Ans. (a) : The Given series is as follows –



Hence, there will be 240 at blank place.

16. The law that permitted widows to remarry (Hindu Widow' remarriage Act) was passed in the year

- (a) 1856 (b) 1854
(c) 1855 (d) 1858

Ans. (a) : The Hindu Widow Remarriage act was passed in 1856. It was drafted by Lord Dalhousie and passed by Lord Canning. Ishwarchandra of Bengal played a significant role in passing of this act later due to his teaching qualities, he got the tittle of "Vidyasagar" from Fort William College.

17. If x and y are two positive numbers such that $\sqrt{x} = 8$ and $x^2 + y = 4112$, then find the value of \sqrt{y} :

- (a) 6 (b) 16
(c) 4 (d) 2

Ans. (c) : On squaring both sides

$$\sqrt{x} = 8$$

$$\Rightarrow x = 64$$

$$x^2 + y - 4112 = 0$$

$$\Rightarrow 64 \times 64 + y - 4112 = 0 \quad (\text{On Putting the value of } x)$$

$$\Rightarrow y = 4112 - 4096$$

$$\Rightarrow y = 16$$

$$\therefore \sqrt{y} = 4$$

18. The ratio of the incomes of Amar and Komal is 5 : 4 and the ratio of their expenditure is 2 : 1. If each of them saves ₹6,000 per month, find Amar's income.

- (a) ₹ 6,000 (b) ₹ 12,000
(c) ₹ 10,000 (d) ₹ 8,000

Ans. (c) : Let income of Amar and Komal is $5x$ and $4x$ respectively.

and their expenditure is $2y$ and y respectively.

According to question

$$5x + 2y = 6000 \quad \dots(i)$$

$$4x + y = 6000 \quad \dots(ii) \quad \dots \times 2$$

$$5x + 2y = 6000$$

$$\underline{-8x \pm 2y = -12000} \quad \text{On subtracting}$$

$$-3x = -6000$$

$$\Rightarrow x = 2000$$

$$\text{Income of Amar} = 5x = 5 \times 2000 = ₹ 10,000$$

19. Anil lent ₹ 7200 to Dubey for 3 years and ₹8400 to Raghav for 4 years on simple interest at the same rate of interest and received ₹ 4968 in total from them as interest. Find the rate of interest per year.

- (a) 8% (b) 10%
(c) 12% (d) 9%

Ans. (d) : Let the rate of interest be $R\%$ per annum.

According to the question –

$$\frac{7200 \times 3 \times R}{100} + \frac{8400 \times 4 \times R}{100} = 4968$$

$$\Rightarrow 216R + 336R = 4968$$

$$\Rightarrow 552R = 4968$$

$$\Rightarrow R = 9\%$$

20. Taxol is extracted from which plant?

- (a) Yew (b) Chir
(c) Chir (d) Neem

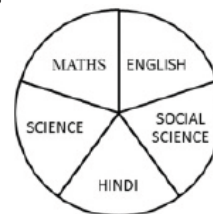
Ans. (a) : Taxol is mainly extracted from Yew tree. It is mainly found in mountaneous regions of northern hemisphere. In India it is mainly found in Himalayan Regions. Taxol is an Anticancer drug.

21. Sushil Kumar won the Olympic medal for:

- (a) Shooting (b) Weightlifting
(c) Wrestling (d) Boxing

Ans. (c) : Sushil Kumar is related with Wrestling. He was born on 20th May 1983 in Delhi. He has won two olympic medals and also gold medals in Common Wealth games. He usually participates in 66kg free style wrestling.

22. Observe the figure carefully and answer the question given below



If the total number of students is 120, and the number of students is distributed equally across all the subjects, how many students study languages

ENGLISH

SOCIAL SCIENCE :

HINDI :

SCIENCE :

MATHS :

- (a) 36 (b) 24
(c) 48 (d) 12

Ans. (c) : Let the total number of students in each subject = x

Total number of students = $5x$

$$\Rightarrow 5x = 120$$

$$\Rightarrow x = 24$$

$$\text{Number of students studying languages (Hindi + English)} = 24 + 24 = 48$$

23. If 'A' represents 'subtraction', 'B' represents 'Multiplication', 'C' represents 'division' and 'D' represents 'addition', then what is the value of (3 B 4 D 5 A 6) C 1?

- (a) 1 (b) 11
(c) 0 (d) 10

Ans. (b) : (3 B 4 D 5 A 6) C 1

On changing the sign –

$$(3 \times 4 + 5 - 6) \div 1 = ?$$

$$= (12 + 5 - 6) \div 1$$

$$= (17 - 6) \div 1$$

$$= 11 \div 1$$

$$= 11$$

24. The sum of two numbers is 288 and their HCF is 16. How many pairs of such numbers can be formed?

- (a) 2 (b) 5
(c) 4 (d) 3

Ans. (d) : Let number is $16x$ and $16y$

By question –

$$16(x + y) = 288$$

$$x + y = 18$$

$$1 + 17 = 18$$

$$5 + 13 = 18$$

$$7 + 11 = 18$$

Hence 3 pairs can be formed.

25. Where is the headquarters of UNICEF situated?

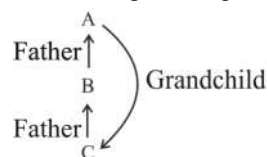
- (a) Washington (b) Paris
(c) Zurich (d) New York

Ans. (d) : UNICEF → United Nations International Children's Emergency Fund was formed by UN General Assembly on 11th Dec 1946. It was formulated for fulfilling the necessities of female and children population of developing nation. In 1965 the organisation got Nobel Peace Prize and in 1989 got the Indira Gandhi Peace Prize.

26. If A is the father of B and B is the father of C, then how is C related to A?

- (a) Grandson (b) Granddaughter
(c) Grandchild (d) Grandfather

Ans. (c) : According to the question



Hence it is clear that C is grand child of A.

27. If $x + x^{-1} = 7$, then find the value of $x^3 + x^{-3}$.

- (a) 322 (b) 332
(c) 312 (d) 342

Ans. (a) : Given –

$$x + x^{-1} = 7$$

$$x + \frac{1}{x} = 7$$

Cube the both sides

$$\left(x + \frac{1}{x}\right)^3 = (7)^3$$

$$x^3 + \frac{1}{x^3} + 3 \times x \times \frac{1}{x} \times \left(x + \frac{1}{x}\right) = 343$$

$$x^3 + \frac{1}{x^3} + 3 \times 7 = 343$$

$$x^3 + \frac{1}{x^3} = 343 - 21$$

$$\text{So, } x^3 + \frac{1}{x^3} = 322$$

28. In Telecom field, ISP stands for:

- (a) Internet Speed Protocol
(b) Internet Service Protocol
(c) Internet Speed Provider
(d) Internet Service Provider

Ans. (d) : In the telecom sector, ISP stands for Internet Service Provider. It is a company that provides internet connection to people. In 1984 the first ISP was established in USA. In India the first Public Internet Service was launched on 15th Aug 1994 by Videsh Sanchar Nigam Ltd, (VSNL)

29. Second Vande Bharat Express is running between _____.

- (a) New Delhi to Lucknow
(b) New Delhi to Mumbai
(c) New Delhi to Kanpur
(d) New Delhi to Katra

Ans. (d) : The original name of Vande Bharat Express is Train 18 (T 18). It is India's first engineless train.

First Vande Bharat Exp- Delhi to Varanasi

Second Vande Bharat Exp- New Delhi to Katra.

Recently on 15th Aug 2021, PM announced for 75 more Vande Bharat Trains on "Azadi Ka Amrit Mahotsav Initiative".

30. A number is first decreased by 20% and then increased by 15%. The number so obtained is 64 less than the original. Find the original number.

- (a) 600 (b) 850
(c) 800 (d) 700

Ans. (c) : Let the original = x

According to the question –

$$x - x \times \frac{80}{100} \times \frac{115}{100} = 64$$

$$x - \frac{92x}{100} = 64$$

$$\frac{100x - 92x}{100} = 64$$

$$8x = 6400$$

$$x = 800$$

31. Simplify

$$15 - 6.3 \div 7 + 3 \times 1.3 - 2$$

- (a) 16 (b) 19
(c) 18 (d) 17

Ans. (a) : On solving the equation –

$$15 - 6.3 \div 7 + 3 \times 1.3 - 2$$

$$= 15 - .9 + 3 \times 1.3 - 2$$

$$= 15 - .9 + 3.9 - 2$$

$$= 18.9 - 2.9$$

$$= 16$$

32. Select the concept that is implicit in the given statement.

Doctors who charge high consultation fee are good.

- (a) A doctor's proficiency is directly related to consultation fees
(b) The doctor is a good practitioner.
(c) A doctor who charges less consultation fee is unpopular
(d) The doctor has many patients

Ans. (a) : Doctors who charge high consultation fee are good. Here a doctor's proficiency is directly related to consultation fees. Hence option (a) is implicit.

33. Observe the table and answer the question below.

The table gives the pass percentage of class X students of five government school in Delhi on the basis of gender.

School	Passed Percentage	Ratio of Boys and Girls
A	35	5 : 6
B	32	3 : 5
C	24	1 : 2
D	10	3 : 2
E	15	5 : 3

What is the ratio of the pass percentage of boys of school B to the pass percentage of boys of school C?

- (a) 5:3 (b) 2:3
(c) 3:2 (d) 3:5

Ans. (c) : Number of pass students of school B = $32 \times \frac{3}{5} = 19.2$

$$\text{Number of pass students of school C} = 24 \times \frac{1}{2} = 12$$

$$\text{Required ratio} = 12 : 8$$

$$= 3 : 2$$

34. Simplify

$$25 \div 10 - \left\{ \frac{7}{4} \times \frac{1}{3} \right\} \times \frac{6}{5} + \frac{14}{3} \times \frac{9}{10} - \left\{ \frac{1}{5} \div \frac{1}{25} \right\}$$

- (a) 1 (b) 11
(c) 5 (d) 10

Ans. (a) :

$$25 \div 10 - \left\{ \frac{7}{4} \times \frac{1}{3} \right\} \times \frac{6}{5} + \frac{14}{3} \times \frac{9}{10} - \left\{ \frac{1}{5} \div \frac{1}{25} \right\}$$

$$= 25 \div 10 - \left\{ \frac{7}{12} \right\} \times \frac{6}{5} + \frac{21}{5} - \left[\frac{1}{5} \times 25 \right]$$

$$= 25 \div 10 - \left\{ \frac{7}{12} \right\} \times \frac{6}{5} + \frac{21}{5} - 5$$

$$= 25 \div 10 - \left\{ \frac{7}{12} \right\} \times \frac{6}{5} + \left(-\frac{4}{5} \right)$$

$$= 25 \div 10 - \frac{7}{10} - \frac{4}{5}$$

$$= \frac{25}{10} - \frac{7}{10} - \frac{4}{5}$$

$$= \frac{25}{10} - \frac{7}{10} - \frac{8}{10}$$

$$= \frac{25}{10} - \frac{15}{10} = \frac{10}{10} = 1$$

35. Who is considered the father of white revolution in India?

- (a) MS Swaminathan (b) Verghese Kurien
(c) Indira Gandhi (d) Arun Krishnan

Ans. (b) : Verghese Kuriene is known as the "Father of White revolution in India". The White revolution was started in India by 1970. In present, India is the leading milk producing country of the world. On every 1st June, World Milk Day is celebrated. World Milk Day was established by the Food and Agriculture Organization (FAO) of UN in 2001.

36. Who has written the narrative history 'India after Gandhi'?

- (a) Malathi Rao (b) Arundhati Roy
(c) Ramachandra Guha (d) Rupa Bajwa

Ans. (c) : Ramachandra Guha was born on 29 April 1958. He is a historian and a huge fan of Gandhian Philosophy. He wrote two book with most relevance to Gandhiji.

1. India after Gandhi.

2. Gandhi : The Years That changed the World, 1914–1948.

37. In a certain code language, DESTINY is written as YNITSED. How will DIGNITY be written as in that language?

- (a) YIGTIND (b) YGITNID
(c) YTINGID (d) YINGTID

Ans. (c) : Just as,

1 2 3 4 5 6 7 7 6 5 4 3 2 1
D E S T I N Y → Y N I T S E D
Same as,

1 2 3 4 5 6 7 7 6 5 4 3 2 1
D I G N I T Y → Y T I N G I D

- 38. Find the sum of the numbers between 400 and 500 such that when 8, 12, and 16 divide them, it leaves 5 as remainder in each case.**

(a) 932 (b) 912
(c) 942 (d) 922

Ans. (d) : LCM of 8, 12 and 16 = 48

Number between 400 and 500 which are divisible by 48 = 432 + 480

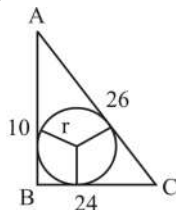
Required number = (432 + 5), (480 + 5) = 437, 485

Sum of Number = 437 + 485 = 922

- 39. ABC is a right-angled triangle. A circle is inscribed in it. The length of the two sides containing the right angle are 10 cm and 24 cm. Find the radius of the circle.**

(a) 5 cm (b) 2 cm
(c) 3 cm (d) 4 cm

Ans. (d) :



By Pythagoras theorem,
 $AC^2 = AB^2 + BC^2$

Inradius for right - angled triangle

$$= \frac{\text{Perpendicular} + \text{Base} - \text{Hypotenuse}}{2}$$

$$\text{Inradius} = \frac{10 + 24 - 26}{2}$$

$$\text{Inradius} = \frac{34 - 26}{2} = \frac{8}{2}$$

$$\text{Inradius} = 4 \text{ cm.}$$

- 40. If $a + b + c = 14$, $ab + bc + ca = 47$ and $abc = 15$ then find the value of $a^3 + b^3 + c^3$.**

(a) 815 (b) 835
(c) 825 (d) 845

Ans. (a) : Given –

$$a + b + c = 14, \quad ab + bc + ca = 47$$

$$abc = 15$$

$$a^3 + b^3 + c^3 - 3abc = (a+b+c)[(a+b+c)^2 - 3(ab+bc+ca)]$$

$$a^3 + b^3 + c^3 - 3 \times 15 = 14 [196 - 3(47)]$$

$$a^3 + b^3 + c^3 - 45 = 14 [196 - 141]$$

$$a^3 + b^3 + c^3 = 14 \times 55 + 45$$

$$a^3 + b^3 + c^3 = 815$$

- 41. Which is the fat-accumulating tissue in our body?**

(a) Epithelial tissue (b) Vascular tissue
(c) Areolar tissue (d) Adipose tissue

Ans. (d) : Adipose tissues are the fat accumulating tissues in human body. Tissues are formed from cells. Fat tissues are of two types.

1. Adipose
2. Aveolar

- 42. When was Project Tiger launched in India?**

(a) 1970 (b) 1973
(c) 1980 (d) 1975

Ans. (b) : On 1st April 1973, the Project Tiger was started from the Jim-Corbet National Park. In the current scenario, the significant increment in no. of tigers may be seen in India. There are total 52 Tiger Reserves in India. recently, Guru. Ghasidas National Park of Chhattisgarh got status of 53rd Tiger Reserve of India. Madhya Pradesh holds most number of tigers on its lands followed by Karnataka.

Note–

* 52nd – Ramgarh Vishdhari (Rajasthan)

* 51th – Megamalai (Tamil Nadu)

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

Hospital : Health :: School : ?

(a) Education (b) Economy
(c) Books (d) Society

Ans. (a) : Just as, Hospital is necessary for health, same as-school is necessary for education.

- 44. Driving his car at the speed of 30 km/h Vinod reaches his office 5 min late. If his speed is 40 km/h, he reaches the office 3 min early. Find the distance he travels between his residence and his office.**

(a) 20 km (b) 15 km
(c) 18 km (d) 16 km

Ans. (d) : When distance is constant

$$\text{Distance} = \text{Speed} \times \text{Time}$$

$$30 \left(t + \frac{5}{60} \right) = 40 \left(t - \frac{3}{60} \right)$$

$$3t + \frac{15}{60} = 4t - \frac{12}{60}$$

$$\frac{15}{60} + \frac{12}{60} = 4t - 3t$$

$$t = \frac{27}{60} = 30 \left(t + \frac{5}{60} \right) \quad (\text{Putting the value of } t)$$

$$= 30 \left(\frac{27}{60} + \frac{5}{60} \right) = 30 \times \frac{32}{60} = 16 \text{ km}$$

45. How many members are nominated by the President of India in the Lok Sabha from the Anglo-Indian community?

- (a) 2 (b) 6
(c) 4 (d) 3

Ans. (a) : According to constitution, the maximum seats in Lok Sabha is 552. In which

530 → From states

20 → from UT's

2 → Anglo Indian's nominated by President of India.

But in the contemporary times the provision of nomination of two Anglo Indians has been abolished by 104th constitutional amendment act.

46. Ram Kumar bought two LED TV sets for ₹41000. By selling one at a profit of 20% and the other at a loss of 15%, he found that the selling prices of both the TV sets are the same. Find his overall gain or loss.

- (a) ₹ 400 Profit (b) ₹ 200 Loss
(c) ₹ 200 Profit (d) ₹ 400 Loss

Ans. (b) : Let cost price of LED is x.

∴ Cost price of the other LED TV = ₹ (41000 - x)

According to question

$$x \times \frac{120}{100} = (41000 - x) \times \frac{85}{100}$$

$$\frac{6x}{5} = (41000 - x) \times \frac{17}{20}$$

$$24x = 41000 \times 17 - 17x$$

$$41x = 41000 \times 17$$

$$x = ₹ 17000$$

$$\text{Total selling price} = 17000 \times \frac{120}{100} + 24000 \times \frac{85}{100}$$

$$= 20400 + 20400$$

$$= ₹ 40800$$

$$\text{Loss} = 41000 - 40800$$

$$= ₹ 200$$

47. Eminent social reformer and women's education activist Pandita Ramabai Saraswati was a great scholar of _____.

- (a) English (b) Hindi
(c) Marathi (d) Sanskrit

Ans. (d) : Pandita Ramabai was feminist social reformer, a knowledgeable fellow and an erudite of Sanskrit. She was born in 1958. She also got the title of "Saraswati". She made hard critics over the system of Patriarchy.

48. The Right to Free and Compulsory Education Act was passed by Parliament in the Year _____

- (a) 2011 (b) 2006
(c) 2009 (d) 2010

Ans. (c) : The Right to free and compulsory Education Act was passed by Parliament in year 2009. In India the Right to Education is mention in article 21(A) of Indian constitution.

By the 86th constitutional amendment 2002, Education was made a fundamental right. Under it provision of compulsory education for children between age of 6-14 years was enacted in India.

49. As on Nov, 2020 where is India's newest high court built?

- (a) Vishakhapatnam (b) Amravati
(c) Warangal (d) Nellore

Ans. (b) : India's newest High court is Amravati High court. It was build after Telangana was separated from Andhra Pradesh. Now the nation has total 25 High courts.

50. The English Language continued to be used for official purposes of the Union via section 3 of the Official Language Act which came into force in the year.

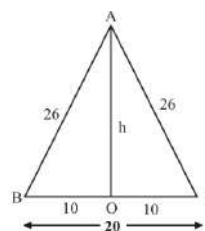
- (a) 1960 (b) 1970
(c) 1963 (d) 1965

Ans. (c) : The provision of "using English for the official works of Union government, under the section 3 of official languages Act" was enacted in 1963. The 8th schedule of constitution of India mention 22 languages and also the part XVII (Seventeenth) of Indian constitution from Article 343-351 are related to official languages.

51. In an isosceles triangle ABC, if AB = AC = 26 cm and BC = 20 cm, find the area of triangle ABC.

- (a) 180 cm² (b) 220 cm²
(c) 260 cm² (d) 240 cm²

Ans. (d) :



In $\triangle ABO$

$$h^2 = AB^2 - BO^2$$

$$h^2 = (26)^2 - (10)^2$$

$$h^2 = 676 - 100$$

$$h^2 = 576$$

$$h = 24 \text{ cm}$$

$$\text{Area of triangle ABC} = \frac{1}{2} \times \text{Base} \times \text{Height}$$

$$= \frac{1}{2} \times 20 \times 24$$

$$= 240 \text{ cm}^2$$

52. Who has won the Nine Dots Prize Award 2019?

- (a) James Williams (b) Chetan Bhagat
(c) Sandeep Maheswari (d) Annie Zaidi

Ans. (d) : Nine dots prize 2019 was given to Annie Zaidi for the literary work Bread, cement, cactus. The award is given for an Initiative and special writing style over a contemporary issue. In year 2021&22 the same award has been held by Trish Lorenz.

53. Which of the following gases is a noble gas?

- (a) Argon (b) Nitrogen
(c) Oxygen (d) Fluorine

Ans. (a) : Argon (Ar), Neon (Ne), Helium (He), Krypton (Kr), Xenon (Xe), Radon (Rn) are the Six naturally occurring noble gases. They have been categorised in group 18 of periodic table. They have 8 electrons in their Outermost shells. They are colourless, odorless, tasteless.

54. By selling a car for ₹ 120000, David makes a profit of 20%. What will be the selling price of the car if he sells it at 30% profits.

- (a) ₹ 1,30,000 (b) ₹ 1,40,000
(c) ₹ 1,25,000 (d) ₹ 1,35,000

Ans. (a) : According to question

$$\text{Cost price} = \frac{120000 \times 100}{120} = ₹ 100000$$

At 30% profit

$$\text{Selling price} = 100000 \times \frac{130}{100} = ₹ 1,30,000$$

55. Find the greatest number of five digits, which is exactly divisible by 468.

- (a) 99684 (b) 99486
(c) 99864 (d) 99468

Ans. (a) : The greatest number of 5 digits = 99999
468)99999(213

936

639

468

1719

1404

315

Required number = 99999 – 315 = 99684

56. Currently, how many languages are listed in the eighth schedule of the Constitution?

- (a) 20 (b) 21
(c) 24 (d) 22

Ans. (d) : The 8th schedule of Indian constitution deals with 22 languages. These are : Assamese, Bengali, Bodo, Dogri, Gujarati, Hindi, Kannada, Kashmiri, Konkani, Maithili, Malayalam, Manipuri, Nepali, Marathi, Odiya, Punjabi, Sanskrit, Sindhi, Tamil, Telugu, Urdu. Part XVII of the Indian Constitution deals with the official languages in Articles 343 to 351.

57. Where is the Sambhar Lake Situated ?

- (a) Madhya Pradesh (b) Uttar Pradesh
(c) Gujarat (d) Rajasthan

Ans. (d) : Sambhar Lake is situated in Rajasthan. It was declared as a Ramsar site in 1990. It is a significant resource of salt in the country and it is also known as the largest salt water lake in the nation.

Rajasthan government recently started Sambhar Project which covers waters of Mendha, Samavd, Mantha, Rupangarh, Kharian, and Khandela rivers.

58. When was the Atomic Energy amendment bill passed by parliament to allow joint ventures between public sector.

- (a) 2012 (b) 2014
(c) 2015 (d) 2010

Ans. (c) : The Atomic Energy Amendment bill was passed by Parliament in 2015. It was passed by Parliament to allow joint ventures between public sector.

* The Bill was introduced by the Minister of state in the department of Atomic Energy, MR. Jitendra Singh.

* The Bill proposes to amend the Atomic Energy Act, 1962.

59. Find the Smallest number by which 35280 must be divided so that the quotient is a perfect square.

- (a) 7 (b) 5
(c) 4 (d) 3

Ans. (b) : By option (b)

$$\frac{35280}{5} = 7056$$

$$\sqrt{7056} = 84$$

So required number = 5

60. As per Inland Waterways Authority of India, what is the approximate total length of navigable and waterways of India?

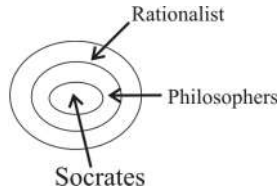
- (a) 15600 km (b) 14500 km
(c) 13600 km (d) 12400 km

Ans. (b) : In India, the total length of inland waterways is 14500 km. As per National Waterway Act 2016, 111 waterways have been declared as 'National Waterways'. India's longest waterway is National Waterway – 1, (Ganga Bhagirathi - Hooghly river system) between Prayagraj and Haldia. These all fall under the Ministry of Ports, Shipping and Waterways.

61. If all philosophers are rationalists and Socrates is a philosopher, then which of the given conclusions follows?

- (a) Socrates is not a rationalist
(b) No philosophers are rationalists.
(c) Socrates is a rationalist
(d) All rationalists are philosophers.

Ans. (c) :



It is clear that Socrates is a rationalist.

- 62. A rhombus has one of its diagonal 65% of the other. A square is drawn using the longer diagonal as side. What will be the ratio of the area of the rhombus and the area of the square?**

(a) 15:18 (b) 18:15
(c) 13:40 (d) 40:13

Ans. (c) : By question

$$65\% = \frac{65}{100} = \frac{13}{20}$$

Diagonal₁ (d₁) = 13

Diagonal₂ (d₂) = 20

Area of square = (side)² = (20)²

Area of square = 400

Area of right angle = $\frac{1}{2} d_1 \times d_2$

$$= \frac{1}{2} \times 20 \times 13 = 130$$

Required ratio = 130 : 400 = **13 : 40**

- 63. for every 18 eggs that Noori buys, three eggs turn out to be rotten. At the same rate, how many good eggs will Noori have if she buys 690 eggs?**

(a) 475 (b) 575
(c) 565 (d) 585

Ans. (b) : Rate of Rotten eggs = $\frac{3}{18} = \frac{1}{6}$

According to question—

No. of rotten eggs in total eggs = $690 \times \frac{1}{6} = 115$

No. of good eggs. = 690 – 115 = 575

- 64. The captain of a cricket team of 11 members is 35 years old and the wicket keeper is 5 years older than the captain. If the ages of these two are excluded, the average of the remaining players is three years less than the average of the whole team. What is the average age of the whole team.**

(a) 26 years (b) 24 years
(c) 28 years (d) 25 years

Ans. (b) : Let average age of whole team is x year –
According to question

$$\frac{11x - 35 - 40}{9} = x - 3$$

$$11x - 75 = 9x - 27$$

$$2x = 75 - 27$$

$$2x = 48$$

$$x = 24 \text{ year}$$

- 65. Find the value of $\tan 15^\circ + \cot 15^\circ$**

(a) 2 (b) 8
(c) 4 (d) 6

Ans. (c) : $\tan 15^\circ + \cot 15^\circ$

$$= \frac{\sin 15^\circ}{\cos 15^\circ} + \frac{\cos 15^\circ}{\sin 15^\circ}$$

$$= \frac{\sin^2 15^\circ + \cos^2 15^\circ}{\sin 15^\circ \cdot \cos 15^\circ} \quad (\because \sin^2 \theta + \cos^2 \theta = 1)$$

$$= \frac{1}{\sin 15^\circ \cdot \cos 15^\circ}$$

$$= \frac{2}{2 \sin 15^\circ \cdot \cos 15^\circ}$$

$$= \frac{2}{\sin 30^\circ} \quad (\because 2 \sin \theta \cdot \cos \theta = \sin 2\theta)$$

$$= \frac{2}{1/2}$$

$$= 4$$

- 66. Two cars start from Ahmedabad and run in opposite directions with one car's speed being 200 km/h more than the other. If they are 4500 km apart after 9h, then the sum of the speeds of both the cars is :**

(a) 350 km/h (b) 250 km/h
(c) 150 km/h (d) 500 km/h

Ans. (d) : Let the speed of first car = x km/h

\therefore Speed of second car = (x+200) km/h

Distance = Speed \times Time

According to question –

$$4500 = 9 (2x + 200)$$

$$500 = 2x + 200$$

$$2x = 300$$

speed of first car (x) = 150

speed of second car = x+200 = 150 + 200 =

350

sum of speed = 350 + 150 = 500

- 67. Where was the first British presidency established in India?**

(a) Mumbai (b) Goa
(c) Surat (d) Kolkata

Ans. (c) : In India the first British Presidency was established in Surat. In between 1615–18 Thomas Roe reached in Jahangir's court and achieved grant/rights for the company. The order of entry of Foreigners in India is.

Portuguese, Dutch, English, Danes, French.

68. When was Reserve Bank of India established?

- (a) April, 1945 (b) April, 1936
(c) April, 1935 (d) April, 1948

Ans. (c) : The Reserve Bank of India was established on 1st April 1935, and was nationalised in 1949. The Bank was set up based on the recommendations of the 1926 Hilton Young Commission. It is the nation's central bank. It is also known as "Bank of Banks". It is head quartered in Mumbai and its present governor is Shaktikanta Das.

* The first Governor of RBI was Sir Osborne Smith.

While the First Indian Governor of RBI was C.D. Deshmukh.

69. E is older than C, D is older than C but younger than E, A is younger than B and C, C is older than B. Who is the youngest.

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

Ans. (d) : According to the question–

$E > D > C > B > A$

Hence it is clear that A is the youngest.

70. What is the term of Non-permanent members of UN Security council?

- (a) 2 years (b) 3 years
(c) 5 years (d) 4 years

Ans. (a) : The non-permanent members of UN Security council have a tenure of 2 years. The council has been created for proliferation of peace and security across the world. It is headquartered in Newyork. The council consists of 15 members

5 → Permanent

10 → Non-Permanent

Recently India has been chosen as the non-permanent member of UN security council.

71. Select the alphanumeric cluster from among the given option that can replace the question mark (?) in the following series.

D4C3B2A1, H8G7F6E5, L12K11J10I9, ?

- (a) P16O15N14M13 (b) P16R15S14T13
(c) Q17P16O15N14 (d) M15N16O17P18

Ans. (a) : Given series follows as –

D	→ ⁺⁴	H	→ ⁺⁴	L	→ ⁺⁴	P
4	→ ⁺⁴	8	→ ⁺⁴	12	→ ⁺⁴	16
C	→ ⁺⁴	G	→ ⁺⁴	K	→ ⁺⁴	O
3	→ ⁺⁴	7	→ ⁺⁴	11	→ ⁺⁴	15
B	→ ⁺⁴	F	→ ⁺⁴	J	→ ⁺⁴	N
2	→ ⁺⁴	6	→ ⁺⁴	10	→ ⁺⁴	14
A	→ ⁺⁴	E	→ ⁺⁴	I	→ ⁺⁴	M
1	→ ⁺⁴	5	→ ⁺⁴	9	→ ⁺⁴	13

72. When the integer n is divided by 9, the remainder is 4. What is the remainder if 12 n is divided by 9?

- (a) 2 (b) 3
(c) 5 (d) 4

Ans. (b) : According to the question –

Let quotient = a

∴ Dividend = Divisor × Quotient + Remainder

$n = 9a + 4$

On multiplying both sides by

$12n = 108a + 48$... (i)

On dividing equation (i) by 9

$$\frac{12n}{9} = \frac{108a}{9} + \frac{48}{9}$$

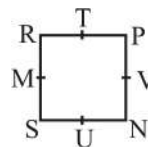
$= 0 \text{ (Remainder)} + 3 \text{ (Remainder)}$

$$\frac{12n}{9} = 3$$

73. Eight people are sitting at a square table. Tina is sitting opposite Urmila, who is sitting between Sharda and Nita. Sharda is diagonally opposite Priya, who is sitting to the right of Vijaya. Vijaya is facing Madhu, who is to the right of Rita. Who is sitting diagonally opposite Nita?

- (a) Sharda (b) Rita
(c) Madhu (d) Priya

Ans. (b) : According to question – Making the arrangement



By the figure, it is clear that Reeta is sitting diagonally opposite to 'Nita'.

74. By default, how many worksheets are present in work book of Excel MS office–2010?

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

Ans. (c) : By default, 3 worksheets are present in work book of Excel MS office 2010. Microsoft office is a suite designed to perform office related tasks like to prepare draft, calculation, presentation etc. MS office first existed in 1989.

75. What was the sex ratio of India as per 2011 census?

- (a) 925 (b) 930
(c) 940 (d) 960

Ans. (c) : * According to Census 2011, Highest Sex Ratio in Kerala (1084) and Lowest or Minimum Sex Ratio is in Haryana (879)

* In Union Territories → Highest – Puducherry (1037)
Lowest – Daman and Diu (533)

As per census 2011, the sex ratio in India was 943. The first census in India was held in 1872 during tenure of Lord Mayo.

76. Simplify

$$17 - 4 \times (5.4 \div 9) + 6 \times 1.9$$

- (a) 22 (b) 24
(c) 28 (d) 26

Ans. (d) :

$$\begin{aligned} 17 - 4 \times (5.4 \div 9) + 6 \times 1.9 \\ = 17 - 4 \times .6 + 11.4 \\ = 17 - 2.4 + 11.4 \\ = 28.4 - 2.4 = 26 \end{aligned}$$

77. Find the rate of interest for a sum that becomes $\frac{14641}{10000}$ time of itself in 4 years compounded annually.

- (a) 20% (b) 15%
(c) 12% (d) 10%

Ans. (d) : Let the rate of interest = $r\%$ per annum

$$\frac{14641}{10000} = \left(1 + \frac{r}{100}\right)^4$$

$$\left(\frac{11}{10}\right)^4 = \left(1 + \frac{r}{100}\right)^4$$

On comparing both sides

$$\frac{11}{10} = 1 + \frac{R}{100}$$

$$\frac{1}{10} = \frac{R}{100}$$

$$\boxed{R = 10\%}$$

78. Inventor of Bluetooth is _____.

- (a) Charles Simonyi (b) Jaap Haartsen
(c) Paul Allen (d) Bill gates

Ans. (b) : Bluetooth is a device invented by Jaap Haartsen. It is a device which may be used in data sharing and in now-a-days is much famous for connecting peripheral devices to a main computer.

Charles Simonyi → Developer of MS office suite's first Edition.

Paul Allen & Billgates → Founders of Microsoft.

79. A few lead spheres of diameter 6 cm are dropped into a cylindrical beaker containing some water such that they are fully submerged.

If the diameter of the beaker is 9 cm and the water level has risen by 32 cm, find the number of lead spheres dropped into the beaker.

- (a) 16 (b) 14
(c) 18 (d) 15

Ans. (c) : Let number of lead sphere is n.

$$\text{Radius of beaker} = \frac{\text{Diameter}}{2} = \frac{9}{2} \text{ cm}$$

$$\text{Radius of each sphere} = \frac{6}{2} = 3 \text{ cm}$$

According to question

(Volume of Sphere \times n = The volume of risen water in cylindrical breaker).

$$\frac{4}{3} \pi r_1^3 \times n = \pi r_2^2 h$$

$$\frac{4}{3} \pi (3)^3 \times n = \pi (9/2)^2 \times 32$$

$$n = \frac{81}{4} \times 32 \times \frac{3}{4} \times \frac{1}{27}$$

$$n = 9 \times 2$$

$$\boxed{n = 18}$$

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

Virus : Disease :: Exercise : ?

- (a) Cycling (b) Walking
(c) Health (d) Jogging

Ans. (c) : Just as, virus is cause of disease same as, exercise is cause of health.

81. Which of the following bodies recommends minimum support price for crops?

- (a) NITI Ayog (b) CACP
(c) NABARD (d) FCI

Ans. (b) : The Minimum Support Price (MSP) for-crops is determined on the recommendations of commission for Agricultural Costs and Prices (CACP). The body works under Ministry of Agriculture and Farmers Welfare As of now, CACP recommends MSPs of 23 commodities, which comprise of 7 cereals (Paddy, wheat, maize, sorghum, pearl, millet, barley and ragi), 5 pulses (gram, tur, moong, urad, lentil), 7 oilseeds and 4 commercial crops.

82. The average weight of P, Q and R is 58 kg. If the average weight of P and Q is 54 kg and that of Q and R is 48 kg, then the weight of Q is:

- (a) 26 kg (b) 32 kg
(c) 30 kg (d) 28 kg

Ans. (c) :

Average weight of P, Q and R = 58 kg

Total weight of P, Q and R = $58 \times 3 = 174$ kg

$P + Q + R = 174$ kg ... (i)

Average weight P = 54 kg
 Total weight of P and Q = $54 \times 2 = 108\text{kg}$
 $P + Q = 108\text{ kg}$... (ii)
 Average weight of Q and R = 48 kg
 Total weight of Q and R = $48 \times 2 = 96\text{kg}$
 $Q + R = 96\text{ kg}$... (iii)
 From equation (ii) and (iii)
 $P + 2Q + R = 204\text{kg}$... (iv)
 On subtracting equation (i) from equation (iv)
 Hence, $Q = 30\text{ Kg}$

83. Which city was the cleanest city of India (in category Cities > 10 Lakh) as per Swachh Survekshan 2020?

- (a) Chandigarh (b) Bhopal
 (c) Indore (d) Jaipur

Ans. (c) : Swachh Survekshan was started by central government in 2016, to promote competitive feeling of cleanliness. In the 2020 Edition Indore topped the survey consecutively 4th times. Also, in 2021 Swachh Survekshan, Indore topped the table.

84. As of 2020, the only person who has received the Nobel prize for physics twice is:

- (a) John Bardeen (b) Lawrence Bragg
 (c) Marie Curie (d) Arthur Ashkin

Ans. (a) : In the given options, John Bardeen got Nobel Prize twice in Physics.
 In 1956 – to discover Transistor
 In 1972 – For BCS Theory of Superconductivity.

85. If $\sec\theta = 5x$ and $\tan\theta = \frac{5}{x}$, then the value of

$10\left(x^2 - \frac{1}{x^2}\right)$ is :

- (a) $\frac{3}{5}$ (b) $\frac{1}{5}$
 (c) $\frac{2}{5}$ (d) 2

Ans. (c) : $\sec\theta = 5x$... (i)

$\tan\theta = 5/x$... (ii)

By equation (i) and (ii)

$$\sec^2\theta - \tan^2\theta = 25\left(x^2 - \frac{1}{x^2}\right)$$

$$1 = 25\left(x^2 - \frac{1}{x^2}\right)$$

$$\left(x^2 - \frac{1}{x^2}\right) = \frac{1}{25}$$

$$10\left(x^2 - \frac{1}{x^2}\right) = \frac{10}{25}$$

$$10\left(x^2 - \frac{1}{x^2}\right) = \frac{2}{5}$$

86. A question and three statements labelled (I), (II) and (III) are given, You have to decide which statement(s) is/are sufficient to answer the question.

Question: Who is the shortest among A, B, C, D and E?

Statement :

I. A is taller than E but shorter than D.

II. B is shorter than C but taller than E.

III. D is taller than C and A is taller than B.

- (a) Statements I, II and III are insufficient
 (b) Statements I and II together are sufficient.
 (c) Statements I and III together are sufficient
 (d) Statements I, II and III together are sufficient

Ans. (d) : From statement I

$D > A > E$

From statement II

$C > B > E$

From statement III

$D > C$

$A > B$

From statement (I), (II) and (III)

$D > C/A > B > E$

It is clear that E is the shortest.

Hence, the statement I, II and III together are sufficient to answer the given question.

87. Select the letter-cluster from among the given options that can replace the question mark (?) in the following series.

ACDF, GIJL, MOPR, ?

- (a) SVUX (b) STVX
 (c) SVTX (d) SUVX

Ans. (d) : Given series are as follows –

A	$\xrightarrow{+6}$	G	$\xrightarrow{+6}$	M	$\xrightarrow{+6}$	S
C	$\xrightarrow{+6}$	I	$\xrightarrow{+6}$	O	$\xrightarrow{+6}$	U
D	$\xrightarrow{+6}$	J	$\xrightarrow{+6}$	P	$\xrightarrow{+6}$	V
F	$\xrightarrow{+6}$	L	$\xrightarrow{+6}$	R	$\xrightarrow{+6}$	X

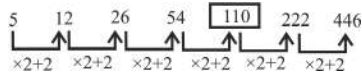
Hence 'SUVX' will be on the place of question mark.

88. Select the number from among the given options that can replace the question mark (?) in the following series.

5, 12, 26, 54, ?, 222, 446

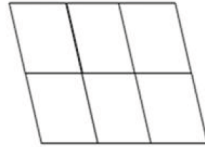
- (a) 108 (b) 110
(c) 112 (d) 116

Ans. (b) : Given series is as follows –



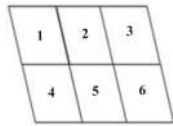
Hence 110 will be on the place of question mark.

89. Count the number of parallelograms in the following figure.



- (a) 16 (b) 20
(c) 14 (d) 18

Ans. (d) :

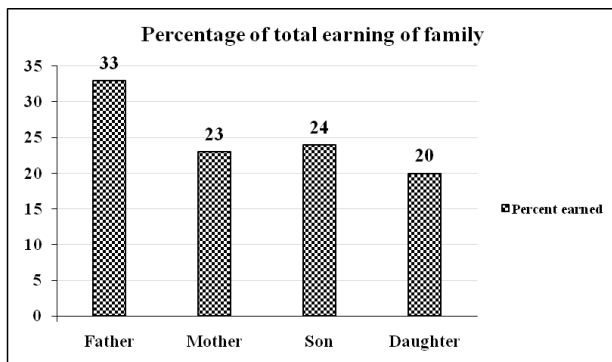


Total number of parallelograms = 1, 2, 3, 4, 5, 6 (1, 2) (2, 3) (4, 5) (5, 6) (1, 4) (2, 5) (3, 6) (1, 2, 3) (4, 5, 6) (1, 2, 4, 5) (2, 3, 5, 6) (1, 2, 3, 4, 5, 6)

Hence, the total number of parallelograms is 18.

90. Observe the bar graph and answer the question below.

The total annual earnings of a family of four members is ₹12 lakhs. The bar graph shows the percentage of contribution of each family member.



What is the difference in the salary of the highest and the lowest earning members?

- (a) ₹15,600
(b) ₹11,60,000
(c) ₹1,560
(d) ₹1,56,000

Ans. (d) : By Given Bargraph

Percentage of difference between highest income and lowest income.

$$= (33 - 20)\% = 13\%$$

$$\text{Required difference} = 1200000 \times \frac{13}{100} = ₹ 1,56,000$$

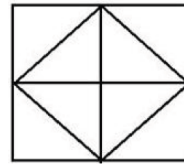
91. Select the option that best describes the given units?

Dollar, Rupee, Yen, Taka

- (a) Finance (b) Wealth
(c) Currency (d) Economy

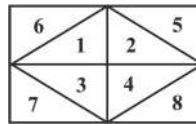
Ans. (c) : Dollar, Rupee, Yen, and Taka are best describes the unit of currency.

92. Count the number of triangles in the following figure.



- (a) 12 (b) 10
(c) 16 (d) 9

Ans. (a) :



Number of Triangles = 1, 2, 3, 4, 5, 6, 7, 8 (1, 2) (3, 4) (1, 3) (2, 4)

Hence the number of triangle is = 12

93. How many straight lines does a cuboid have?

- (a) 24 (b) 10
(c) 16 (d) 12

Ans. (d) : There are 12 straight line in a cuboid.

94. Study the given table carefully and select the number from among the given option that can replace the question mark (?).

9	8
17	8
25	16
?	8
49	8
57	16

- (a) 41 (b) 49
(c) 33 (d) 32

Ans. (a) : Given series are as follows –

$$9 + 8 = 17$$

$$17 + 8 = 25$$

$$25 + 16 = \boxed{41}$$

$$41 + 8 = 49$$

$$49 + 8 = 57$$

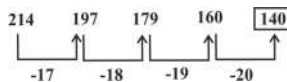
Hence, 41 will be on the place of question mark.

95. Select the number from among the given options that can replace the question mark (?) in the following series.

214, 197, 179, 160, ?

- (a) 159 (b) 147
(c) 149 (d) 140

Ans. (d) : Given series are as follows –



Hence, 140 will be on the place of question mark.

96. If 'some artist are celebrities' and 'all celebrities are millionaires', then which of the given conclusions follow?

- (a) All artist are millionaires
(b) No celebrities are millionaires
(c) Some artists are millionaires
(d) No millionaires are celebrities

Ans. (c) : According to question Venn diagram is as follows –



Hence some artist are millionaire.

97. Select the option that is closest to the given shape?

Square, Rhombus, Rectangle, Parallelogram

- (a) Scalene
(b) Quadrilateral
(c) Equiangular
(d) Equilateral

Ans. (b) : In given option quadrilateral is same as square, Rhombus, Rectangle and Parallelogram whereas other are different. Hence option (b) is right answer.

98. In a certain code language, VAGABOND is written as NDVABOGA. How will PRACTICE be written as in that Language?

- (a) CEPRTIAC (b) CEACTIPR
(c) CERPTIAC (d) PRCETIAC

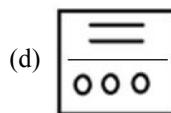
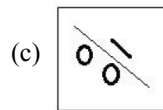
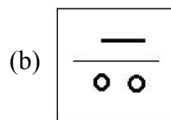
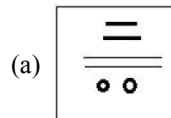
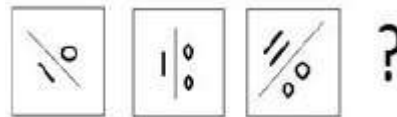
Ans. (a) : Just as,

1 2 3 4 5 6 7 8 → 7 8 1 2 5 6 3 4
V A G A B O N D → N D V A B O G A

Same as,

1 2 3 4 5 6 7 8 → 7 8 1 2 5 6 3 4
P R A C T I C E → C E P R T I A C

99. Select the pattern from among the given options that will come next in the following series.



Ans. (d) : Just as the second pattern can be obtained by increasing one zero in the first pattern and rotating the pattern 45° clock-wise, similarly by increasing the zero in the third pattern and rotating the pattern 45° clockwise, the option(d) pattern will be obtained.

100. Out of the four materials listed, three are alike in some manner and one is different. Select the odd one.

- (a) Iron (b) Silver
(c) Steel (d) Gold

Ans. (c) : Iron, Silver and Gold are pure substance whereas steel is mixture of different element. Hence option (c) is right answer.

Railway Non-Technical Popular Categories Exam - 2019

Graduate and Under-Graduate Level

[Ist Stage Computer Based Test]

Exam Date : 08.01.2021]

[Time : 10:30 am-12:00 pm

1. Where was 11th WTO Ministerial Meeting organized?
 (a) Switzerland (b) England
 (c) China (d) Argentina

Ans. (d) : The 11th Ministerial Conference of WTO took place from 10 to 13 December 2017 in Buenos Aires, Argentina. It was chaired by Minister Susana Malcorra of Argentina.

The 12th Ministerial Conference will take place from 30 November to 3 December 2021 in Geneva, Switzerland. World Trade Organisation (WTO) started functioning on 1 January, 1995. The WTO has 164 members states and 23 observers states. Afghanistan became the 164th member in July 2016. It is headquartered in Geneva, Switzerland.

2. Two numbers are in the ratio 19 : 17. Their HCF is 11. Find out the numbers.
 (a) 221, 247 (b) 209, 187
 (c) 190, 170 (d) 1700, 1900

Ans. (b) : Let both the numbers a and b be $19x$ and $17x$ respectively.

$HCF(x) = 11$

$$\therefore a = 19 \times x = 19 \times 11 = 209$$

$$b = 17 \times x = 17 \times 11 = 187$$

Hence the numbers are 209 & 187.

3. Read the given statements and conclusions carefully. Assuming that the information given in the statements is true, even if it appears to be at variance with commonly known facts, decide which of the given conclusions logically follows from the statements.

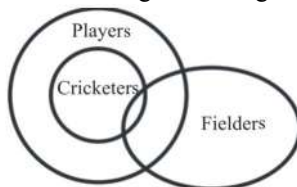
Statements:

1. All cricketers are players.
2. Some cricketers are fielders.

Conclusions:

1. Some fielders are cricketers.
 2. Some fielders are players.
- (a) Neither conclusion 1 nor 2 follow.
 (b) Both conclusions 1 and 2 follow.
 (c) Only conclusion 1 follows.
 (d) Only conclusion 2 follows.

Ans. (b) : On drawing Venn diagram, as per question.



From the venn diagram, it is clear that both conclusions 1 & 2 follow the statements logically.

4. Which is the world's largest freshwater lake in terms of volume ?

- (a) Caspian Sea
 (b) Lake Superior
 (c) Lake Baikal
 (d) Lake Michigan-Huron

Ans. (c) : Lake Baikal is the largest fresh water lake by volume ($23,600 \text{ km}^3$) in the world and it is also the world's deepest lake. It is located in South Siberia, Russia. In 1996 it was declared as a UNESCO World Heritage Site.

Lake Superior is the world's largest freshwater lake by surface area. It is located in North America on the border between the United States and Canada.

5. Who was responsible for introducing Enfield rifles that used the greased cartridges which became the immediate reason of 1857 revolt.

- (a) Captain Hearsey
 (b) Henry Hardinge
 (c) Lord William Bentinck
 (d) Francis Grant

Ans. (b) : Henry Hardinge, who was governor general of India from 1844 to 1848, attempted to modernize the army's equipment as governor general. The enfield rifles that were introduced initially used the greased cartridges, the sepoys rebelled against that.

6. As of November 2020, Who is the President of the World Bank?

- (a) David R Malpass
 (b) Kristalina Georgieva
 (c) Shanta Devrajan
 (d) Jim Yong Kim

Ans. (a) : David Robert Malpass was elected as the 13th President of the World Bank Group on 5 April, 2019.

World Bank is an international financial institution. It was founded in July 1944. Its main objective is the reduction of poverty.

7. The floor of a hall measuring 16 meters in length and 12 meters in width is to be paved with square tiles. If the least number of tiles are to be used, then what is the length of each square tile?

- (a) 4 meter (b) 12 meter
 (c) 48 meter (d) 24 meter

Ans. (a) : Length of floor = 16m

Breadth of floor = 12m

$$\therefore HCF \text{ of } 16 \text{ \& } 12 = 4$$

Hence the length of each square tiles = 4 meter

8. The present MD and CFO of the World Bank, Anshula Kant was earlier the MD of _____.

- (a) SBI
- (b) Oriental Bank of Commerce
- (c) Bank of Baroda
- (d) IndusInd Bank

Ans. (a) : Anshula Kant was appointed as the Managing Director & Chief Financial Officer of the World Bank Group on 12 July 2019, earlier she was the MD of State Bank of India. In September 2018, she became MD of SBI for a period of 2 years.

9. Which missile-destroyer of the Indian Navy has been decommissioned after 36 years in May, 2019?

- (a) INS Vikrant
- (b) INS Rana
- (c) INS Ranjit
- (d) INS Vikramaditya

Ans. (c) : The Indian Navy's frontline missile destroyer INS Ranjit was commissioned on 15 September 1983. It was decommissioned on 6 May 2019 at Vishakhapatnam's naval dock yard. It was third of five Rajput - class destroyers built by former USSR.

10. Select the option, that is related to the fourth number in the same way as the first number is related to the second number.

3 : 36 :: ? : 20736

- (a) 1728
- (b) 3456
- (c) 728
- (d) 81

Ans. (a) : Just as,

$$3 \times 12 \rightarrow 36$$

Similarly,

From option (a)

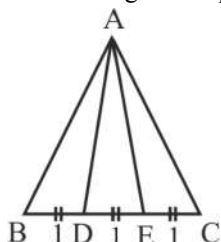
$$1728 \times 12 \rightarrow 20736$$

Hence, ? = 1728

11. The area of triangle ABC is 39 cm^2 . D and E are two points on BC such that $BD = DE = EC$, then what is the area of triangle ADC?

- (a) 26 cm^2
- (b) $\frac{9}{4} \text{ cm}^2$
- (c) 13 cm^2
- (d) 52 cm^2

Ans. (a) : According to the question,



\therefore Area of $\triangle ABC = 3 \text{ Units}$

$\therefore 3 \text{ Units} \rightarrow 39 \text{ cm}^2$

1 Unit $\rightarrow 13 \text{ cm}^2$

\therefore Area of $\triangle ADC = 2 \text{ Units}$

$\therefore 2 \text{ Units} \rightarrow 13 \times 2 = 26 \text{ cm}^2$

12. A question and two statements are given. Identify which of the statements is/are sufficient to answer the question.

Question:

On which date is Evanshu's birthday?

Statements:

1. Evanshu's birthday is on the Republic Day of a country.

2. The country's national flag is a tricolour flag with an Ashoka Chakra in its centre.

- (a) Statement 2 is sufficient but statement 1 is not sufficient.
- (b) Both statements 1 and 2 are sufficient together.
- (c) Statement 1 is sufficient but statement 2 is not sufficient.
- (d) Both statements 1 and 2 are sufficient independently.

Ans. (b) : Evanshu was born on Republic Day on 26th January. From which it is clear that statement '1' is enough for his birth date.

Note:- The RRB has considered option 'b' as the appropriate answer of this question.

13. The diagonal of a square is $\sqrt{200} \text{ cm}$. If the sides of a rectangle are in the ratio 5 : 2, which is the same as the area of the square, then what is the length of the rectangle.

- (a) $\sqrt{250} \text{ cm}$
- (b) $\sqrt{200} \text{ cm}$
- (c) $2\sqrt{10} \text{ cm}$
- (d) $\sqrt{20} \text{ cm}$

Ans. (a) : \therefore Diagonal of square = $\sqrt{2} \times \text{side}$

$$\text{Side of square} = \frac{\sqrt{200}}{2} = 10 \text{ cm}$$

\therefore Area of rectangle = Area of square

$$5x \times 2x = 10 \times 10$$

$$x^2 = 10$$

$$x = \sqrt{10} \text{ cm}$$

$$\therefore \text{Length of rectangle} = 5x = 5\sqrt{10}$$

$$= \sqrt{5^2 \times 10}$$

$$= \sqrt{250} \text{ cm}$$

14. In an election, there were only two candidates. The losing candidate got 48% of the total votes. His opponent got 6000 votes more and won by a margin of 3% votes. What was the number of invalid votes?

- (a) 2000
- (b) 3200
- (c) 6000
- (d) 3000

Ans. (a) : Let total votes = 100%

Votes obtained by losing candidate = 48%

Votes obtained by winning candidate = 52%

Difference of obtained votes = $52 - 48 = 4\%$

As per question, difference of votes = 3%
it means that 1% votes are illegal/invalid

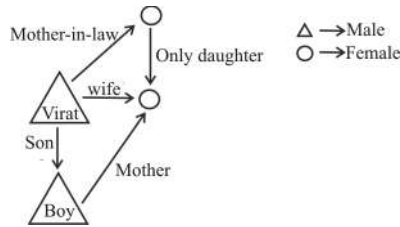
$$\therefore 3\% \rightarrow 6000$$

$$1\% (\text{Invalid votes}) = 2000$$

15. Introducing a boy, Virat Said, "His mother is the only daughter of my mother-in-law." How is the boy related to Virat?

- (a) Son (b) Uncle
(c) Brother (d) Husband

Ans. (a) : According to the question the blood relation diagram is as follows –



Hence it is clear that the boy is "Son" of Virat.

16. If -5 is a root of the quadratic equation $2x^2 + px - 15 = 0$ and also of the quadratic equation $p(kx^2 + x) = 0$ then what are the values of p and k ?

- (a) 7, 0.2 (b) 7, -0.2
(c) -7 , 0.4 (d) -7 , -0.2

Ans. (a) : $2x^2 + px - 15 = 0$, $p(Kx^2 + x) = 0$

$$\therefore \text{Root} = -5$$

$$\therefore 2 \times (-5)^2 + p(-5) - 15 = 0$$

$$p \times 5 = 35$$

$$p = 7$$

$$\text{Again, } p(kx^2 + x) = 0$$

$$7[k(-5)^2 + (-5)] = 0$$

$$7 \times (k \times 25 - 5) = 0$$

$$175k - 35 = 0$$

$$k = \frac{35}{175}$$

$$k = \frac{5}{25} = 0.2$$

$$k = 0.2$$

Hence the value of p & k is 7 and 0.2 respectively.

17. The price of sugar increased by 10%. A family of 5 members did not want to increase their expenditure. What is the percentage reduction in their consumption of sugar?

- (a) 8 (b) 12
(c) $9\frac{1}{11}$ (d) 10

$$\begin{aligned} \text{Ans. (c) : Percentage reduction} &= \frac{10}{110} \times 100 \\ &= \frac{100}{11} = 9\frac{1}{11}\% \end{aligned}$$

18. Which of the following is one of the founding countries of ASEAN?

- (a) India (b) Malaysia
(c) Australia (d) Cambodia

Ans. (b) : Association of Southeast Asian Nations (ASEAN) is an organisation formed by the governments of Malaysia, Indonesia, Philippines, Thailand and Singapore in 1967 to promote economic growth, peace, security, social progress and cultural development in the Southeast Asian region.

19. The speed of a boat in still water is 15 km/h. The speed of the current is 3 km/h. The difference between the time taken for upstream and downstream to complete two trips (i.e. from one end to the other coming back and repeating the same again) is 10 minutes. What is the distance between the two ends?

- (a) 2.5 km (b) 2 km
(c) 3.5 km (d) 3 km

Ans. (d) : Let the distance between the ends = d km

$$\text{Speed of Boat (B)} = 15 \text{ km/h}$$

$$\text{Speed of Current (C)} = 3 \text{ km/h}$$

\therefore According to question,

$$\frac{2d}{15-3} - \frac{2d}{15+3} = \frac{10}{60} \text{ Hrs}$$

$$\frac{2d}{2} - \frac{2d}{3} = 1$$

$$\Rightarrow \frac{6d - 4d}{6} = 1$$

$$\Rightarrow 2d = 6$$

$$\text{Distance (d)} = 3 \text{ km}$$

20. Simplify:

$$1.8 + 2 \times \frac{3}{2} \times \frac{1}{2} \left\{ \frac{2}{5} \div \left(\frac{3}{5} \times \frac{2}{3} \right) \times \frac{3}{2} - 1 \right\}$$

- (a) 1 (b) -1
(c) 0.2 (d) 2.55

$$\text{Ans. (d) : } 1.8 + 2 \times \frac{3}{2} \times \frac{1}{2} \left\{ \frac{2}{5} \div \left(\frac{3}{5} \times \frac{2}{3} \right) \times \frac{3}{2} - 1 \right\}$$

$$= 1.8 + 2 \times \frac{3}{2} \times \frac{1}{2} \left\{ \frac{2}{5} \times \frac{5}{2} \times \frac{3}{2} - 1 \right\}$$

$$= 1.8 + 2 \times \frac{3}{2} \times \frac{1}{2} \left\{ \frac{1}{2} \right\}$$

$$= 1.8 + 3 \times \frac{1}{2} \left\{ \frac{1}{2} \right\}$$

$$= 1.8 + \frac{3}{4} = 1.8 + 0.75 = 2.55$$

21. INTERPOL has its headquarters in _____.

- (a) Germany (b) France
(c) Switzerland (d) Spain

Ans. (b) : The International Criminal Police Organization (INTERPOL) is an intergovernmental organization that helps to coordinate the police forces of 194 member countries. It is headquartered in Lyon, France. It was established in 1923.

22. The difference between the fractions 5 minutes of an hour and 20 seconds of an hour is:

- (a) $\frac{16}{180}$ (b) $\frac{28}{270}$
(c) $\frac{0.7}{9}$ (d) $\frac{7}{12}$

Ans. (c) : The difference between the fractions 5 minutes of an hour and 20 seconds of an hour is-

$$\begin{aligned} &= \frac{5}{60} \text{ h} - \frac{20}{3600} \text{ h} \\ &= \frac{5}{60} - \frac{2}{360} \\ &= \frac{30-2}{360} \\ &= \frac{28}{360} \\ &= \frac{7}{90} = \frac{0.7}{9} \text{ h} \end{aligned}$$

23. In a school the ratio of the number of boys and girls is 5:6. 20% boys and 25% girls are scholarship holders. How many students did not get a scholarship?

- (a) $\left(\frac{950}{11}\right)\%$ (b) $\left(\frac{850}{11}\right)\%$
(c) $\left(\frac{8000}{11}\right)\%$ (d) $\left(\frac{750}{11}\right)\%$

Ans. (b) :

Let the number of boys = 500
and the number of girls = 600
Number of boys, who are not scholarship holder
 $= 500 \times \frac{80}{100} = 400$
Number of girls, who are scholarship holder
 $= 600 \times \frac{75}{100} = 450$
Percentage of students who are not scholarship holder
 $= \frac{400+450}{1100} \times 100$
 $= \left(\frac{850}{11}\right)\%$

24. Who said the following when laying the foundation stone ceremony of Banaras Hindu University, "There is no salvation for India unless you strip yourself of this jewellery and hold it in trust for your country men in India."

- (a) Gopal Krishna Gokhale
(b) Mohammad Ali Jinnah
(c) Annie Basant
(d) Mahatma Gandhi

Ans. (d) : In February 1916, Mahatma Gandhi was invited to speak at the laying of foundation stone of the Banaras Hindu University (BHU). At there Mahatma Gandhi said that 'There is no salvation for India unless you strip because yourself of this jewellery and hold it in trust for your country men in India. Lord Hardinge, the Viceroy, has come specially to lay the foundation stone of BHU.

BHU was founded by Madan Mohan Malaviya on 4 February 1916.

25. Which two signs need to be interchanged to make the following equation correct.

$$3 + 3 \times 3 - 3 \div 3 = 3$$

- (a) - and + (b) + and ÷
(c) × and ÷ (d) + and ÷

Ans. (d) : The given equation is -

$$3+3 \times 3-3 \div 3=3$$

On interchanging signs (+) & (÷) as per option (d)

$$3 \div 3 \times 3 - 3 + 3 = 3$$

$$3-3+3=3$$

$$3=3$$

$$\text{L.H.S} = \text{R.H.S}$$

26. Which of the following is an example of non-infectious disease?

- (a) Typhoid (b) Pneumonia
(c) High Blood Pressure (d) Influenza

Ans. (c) : Non-Communicable (infectious) disease are caused by a variety of reasons such as - genetics, nutritional deficiency, age and sex of the individual and so on. Examples include High Blood Pressure, Diabetes, Hypertension, Cancer etc. where as Typhoid, Pneumonia and Influenza are communicable diseases.

27. Seven chocolates, A, B, C, D, E, F and G, are bought at different costs between ₹40 and ₹50 (excluding both ₹40 and ₹50) but not necessarily in the same order. The cost of chocolate C is ₹5 less than that of chocolate E. The cost of chocolate A is a prime number. The cost of chocolate F is ₹2 more than that of chocolate A. The cost of chocolate F is more than that of chocolate E. The cost of chocolate D is an odd number. The cost of chocolate G is ₹3 more than the cost of chocolate D. None of the chocolates cost ₹44. The cost of chocolate B is an even number. What is the cost of chocolate E?

- (a) ₹ 45 (b) ₹ 47
(c) ₹ 46 (d) ₹ 42

Ans. (c) : According to question,

Chocolate	Cost
A	47
B	42
C	41
D	45
E	46
F	49
G	48

Hence from the statement it is clear that the price of chocolate E is ₹46.

28. Which one of the following contains CFC?

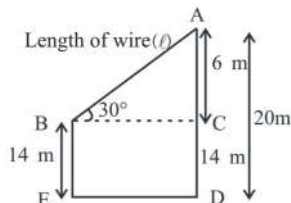
- (a) Wall Paints (b) Aerated drinks
(c) Varnish (d) Refrigerants

Ans. (d) : Chlorofluorocarbons (CFCs) are the gases used for various purpose including solvents, refrigerants and aerosol sprays. CFCs are the organic chemicals that contain Carbon, Chlorine and Fluorine. CFCs have been banned since 1996 because they damage the earth's Ozone layer.

29. Two poles of height 20 meters and 14 meters are joined at the top by a wire which makes an angle of 30° with the horizontal. The length of the wire is:

- (a) 10 m (b) 12 m
(c) 16 m (d) 14 m

Ans. (b) : Let the length of wire is ℓ .



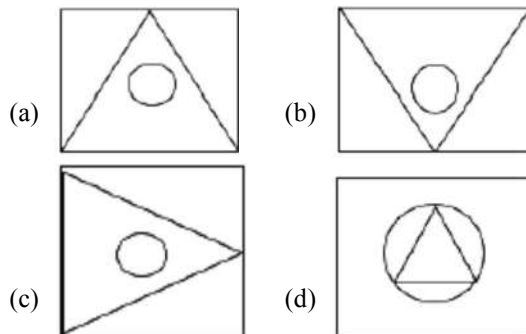
In $\triangle ABC$,

$$\sin 30^\circ = \frac{AC}{AB}$$

$$\frac{1}{2} = \frac{6}{AB}$$

$$AB = 6 \times 2 = 12\text{m}$$

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



- (a) b (b) d
(c) c (d) a

Ans. (b) : It is clear from the above question figures, that figure (a), (b) & (c) are similar to each other in which the circle is inside the triangle. While in figure (d), the triangle is inside the circle. Hence option 'd' is different amongst all.

31. At present the average age of 20 students of class ten is 15.5 years. The present age of the class teacher is 47 years. What will be the average age of the students and the class teacher after 5 years?

- (a) 22.5 years (b) 22 years
(c) 21.8 years (d) 21.5 years

Ans. (b) : Total average age of students and teacher
 $= 20 \times 15.5 + 47$
 $= 310 + 47 = 357 \text{ years}$

Total age of the students and the class teacher after 5 years
 $= 357 + 20 \times 5 + 5$
 $= 462 \text{ years}$

\therefore Hence, the average age after 5 years $= \frac{462}{21} = 22$ years

32. A small text file created by a website that is stored in the user's computer temporarily for that session is called _____

- (a) bug (b) cache
(c) cookie (d) malware

Ans. (c) : A small text file (upto 4 KB) created by a website that is stored in the user's computer either temporarily for that session only or permanently in storage is called cookies. Cookies provide a way for the website to recognize us and keep track of our preferences.

33. If DO is coded as 60 and SO is coded as 285, then which of the following will be the code for RED?

- (a) 299 (b) 360
(c) 27 (d) 94

Ans. (b) : Just as,

$$\begin{array}{ccc} D & O & \\ \downarrow & \downarrow & \\ 4 & \times & 15 = 60 \\ S & O & \\ \downarrow & \downarrow & \\ 19 & \times & 15 = 285 \end{array}$$

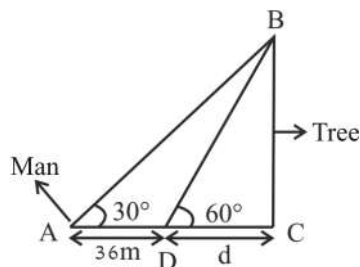
Similarly,

$$\begin{array}{ccc} R & E & D \\ \downarrow & \downarrow & \downarrow \\ 18 & \times & 5 \times 4 = \boxed{360} \end{array}$$

34. A man standing on the banks of a river observes that the angle subtended by a tree on the opposite bank is 60° . He walks 36 meters backward on the bank and observes the angle to be 30° . What is the breadth of the river ?

- (a) 20 meters (b) 18 meters
(c) 10 meters (d) 28 meters

Ans. (b) :



Let the breadth of river = d m

In $\triangle ABC$,

$$\tan 30^\circ = \frac{BC}{36+d}$$

$$BC = \frac{36+d}{\sqrt{3}} \quad \text{----- (1)}$$

Again in $\triangle BDC$,

$$\tan 60^\circ = \frac{BC}{d}$$

$$BC = \sqrt{3}d$$

From eqⁿ (i)-

$$\sqrt{3}d = \frac{(36+d)}{\sqrt{3}}$$

$$3d = 36+d$$

$$2d = 36$$

$$d = 18\text{m}$$

35. Three statements are given, followed by three conclusions I, II and III. You have to consider the statements to be true even if they seem to be at variance with commonly known facts and then decide which of the given conclusions logically follow(s) from the given statements.

Statements:

Some tigers are rats.

All rats are elephants

All tigers are cats.

Conclusions:

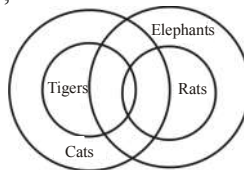
I. Some cats are elephants.

II. Some elephants are tigers.

III. Some cats are rats.

- (a) Only conclusions II and III follow
(b) All conclusions I, II and III follow
(c) Only conclusions I and II follow
(d) Only conclusions I and III follow

Ans. (b) : As per question, on drawing the Venn diagram,



Hence from above it is clear that all conclusions I, II & III follow the statements logically.

36. The Virupaksha temple at Hampi is dedicated to:

- (a) Lord Shiva (b) Lord Ganesha
(c) Lord Vishnu (d) Lord Brahma

Ans. (a) : Virupaksha temple is the oldest and principal temple in Hampi Karnataka. It is located on the bank of river Tungbhadra. It has been an important pilgrimage centre for the worshipping of Lord Shiva. Krishnadevaraya has been a major patron of this temple. Lakkana Dandasha who was the chieftain of Deva Raya II of Vijaynagara Empire has commissioned this temple.

37. Which Indian state has the highest power generation capacity from thermal energy?

- (a) Gujarat (b) Uttar Pradesh
(c) Maharashtra (d) Andhra Pradesh

Ans. (c) : The state of Maharashtra is at the top position in power generation capacity from Thermal Energy. India is the world's 5th largest electricity generator with installed capacity of 2, 27, 722 MW.

38. 25% of a number is 7 more than 30% of another number. The difference between the numbers is 29. What are the numbers?

- (a) 39 and 10 (b) 40 and 11
(c) 34 and 5 (d) 37 and 8

Ans. (c) : Let the two numbers are x and y .

\therefore According to question,

$$25\% \times x = y \times 30\% + 7$$

$$\frac{25 \times x}{100} = \frac{y \times 30}{100} + 7$$

$$\frac{x}{4} = \frac{3y}{10} + 7$$

$$\frac{x}{4} = \frac{3y + 70}{10}$$

$$5x = 6y + 140$$

$$5x - 6y = 140 \quad \text{..... (i)}$$

Again as per question,

$$\therefore x - y = 29 \quad \text{..... (ii)}$$

On multiplying by 5 in equation (ii) and then subtracting from equation (i)

$$5x - 6y = 140$$

$$5x - 5y = 145$$

$$y = 5$$

Putting the value of 'y' in equation (ii)

$$x - y = 29$$

$$x - 5 = 29$$

$$x = 34$$

Hence the numbers are 34 & 5.