12 General Aptitude

Practice Questions

Q.1 Select the option which is CLOSEST in meaning to the capitalized word.

PROTAGONIST

(A) Prophet   (B) Opponent

(C) Explorer   (D) Champion

Q.2 Select the option which is CLOSEST in meaning to the capitalized word.

RAVENOUS

(A) Treachery   (B) Hungry

(C) Collection   (D) Sadness

Q.3 Find out the choice that corrects the underlined part of the following sentence. The assistant was asked <u>that why he was</u> generally late

(A) Why was he

(B) Why that he was

(C) Why he was

(D) No correction required

Q.4 The following question is given with blank space. You are required to fill in the blank space with the most appropriate word out of the alternatives

Ravens appear to behave _____, actively helping one another to find food.

(A) Mysteriously   (B) Aggressively

(C) Cooperatively   (D) Defensively

Q.5 Choose the best word to complete the sentence

The student was extremely foolhardy; he had the _____ to question the senior professor's judgment

(A) Wisdom   (B) Temerity

(C) Interest   (D) Trepidation

Q.6 The question below consists of a pair of related words followed by four pairs of words. Select the pair that best expresses the relation in the original pair.

CURRENT : ELECTRICITY

(A) Scale : dimension

(B) Fabrication : metal

(C) Beam : light

(D) Ripple : Pond

Q.7 Given below is a statement followed by two conclusions. Assuming the statement to be true, decide which one logically follows

Statements : Cactus has thick leaves and requires little or no water.

Conclusions :

I. Any plant that has thick leaves can sustain with little or no water.

II. Cactus can survive in arid deserts.

(A) Conclusion I is implied

(B) Conclusion II is implied

(C) Both conclusion I and II are implied

(D) Neither conclusion I nor II are implied

Q.8 The question has a set of four statements. Each statement has three segments. Choose the alternative where the third segment in the statement can be logically deduced using both the preceding two, but not just from one of them.

(i) All religions teach values ; Sufism is a religion ; Sufism teaches values.

(ii) Buddhism is an oriental religion ; only oriental religion teach spirituality ; Buddhism teaches spirituality.

(iii) Theists believe in God ; atheists do not believe in God ; theists are not atheists.

(iv) Money is valuable ; character is valuable ; money is character.

(A) (iv) only
(B) (ii) only
(C) (i) only
(D) (i), (ii) and (iii)

Q.9 Find the missing letter

$$\boxed{C} \times \boxed{F} \rightarrow \boxed{8}$$
$$\boxed{D} \times \boxed{G} \rightarrow \boxed{15}$$
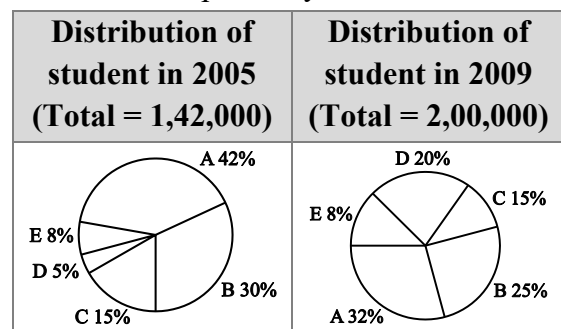$$\boxed{B} \times \boxed{?} \rightarrow \boxed{19}$$

Note : For the above question vowels are not considered as part of alphabet

(A) Y
(B) X
(C) W
(D) Z

Q.10 A trader buys a certain amount of goods worth ₹ 22520. He decides to make a profit of 5.36% on the sale of goods worth ₹ 5000 and increase the profit percent by 3.14% for sales upto ₹ 15000 and then increase the profit percent for the sale of remaining lot such that he is able to make a profit of 25% on the sale of the full lot. Find the profit that he makes on the third lot of goods.

(A) ₹ 5620
(B) ₹ 3212
(C) ₹ 4512
(D) None of these

Q.11 The pie chart below shows the percentage of student's attempted different entrance examinations A, B, C, D and E respectively in 2005 and 2009

Distribution of student in 2005 (Total = 1,42,000)	Distribution of student in 2009 (Total = 2,00,000)
A 42% B 30% C 15% D 5% E 8%	D 20% C 15% B 25% A 32% E 8%

Between 2005 and 2009, by what percent the number of students increased in the exams A, B and D combined?

(A) 40.84
(B) 46.48
(C) 30.48
(D) 48.04

Q.12 Company Alpha buys free-travel coupons from people who are awarded the coupons by Bravo Airlines for flying frequently on Bravo Airplanes. The coupons are sold to people who pay less for the coupons than they would pay by purchasing tickets from Bravo. This marketing of coupons results in lost revenue for Bravo.

To discourage the buying and selling of free-travel coupons, it would be best for bravo Airlines to restrict the

(A) Number of coupons that a person can be a awarded in a particular year.

(B) Limiting use of the coupons to those who were awarded the coupons and members of their immediate families.

(C) Days that the coupons can be used from Monday through Friday.

(D) Amount of time that the coupons can be used after they are issued.

Q.13 Wine Company Representative : The corks of red wine bottles pose a threat to the environment because they are treated with chemicals that are especially toxic in landfills. However, the new cork that our company developed, which will be adopted by the entire red wine industry, represents a solution. Since the new cork is natural and not treated with chemicals, when the industry completes its transition to the new cork, there will no longer be any threat to landfills from red wine corks.

Which of the following, if true, most weakens the argument above?

(A) The industry's transition to the new red wine corks will take years, allowing thousands of old corks to pollute landfills.

(B) Even after the industry's transition to new corks, a large number of wine bottles with old corks will continue to be consumed.

(C) The new corks take considerably longer to produce.

(D) Production of the new cork emits more toxic fumes than were emitted in the production of the old cork.

Q.14 In a population of N families, 60% of families have three children, 20% of the families have two children and the remaining families have one child. What is the probability that a randomly picked child belongs to a family with two children?

(A) $\dfrac{3}{23}$ (B) $\dfrac{6}{23}$

(C) $\dfrac{3}{10}$ (D) $\dfrac{1}{6}$

Q.15 The sum of five consecutive even numbers A, B, C, D, and E is 130. The product of A and E is _____.

Q.16 If $\log_4 \dfrac{2}{x} + \log_{16} 0.5 = 2$, then

(A) $4\log_4 x = -7$ (B) $2\log_4 x = -7$

(C) $2\log_{16} x = -7$ (D) $\log_{16} x = -7$

Q.17 In a family, a couple has a son and a daughter. The age of the father is three times that of his daughter and the age of the son is half of his mother. The wife is 9 years younger to her husband and the brother is seven years older than his sister. What is the age of the mother?

(A) 40 years   (B) 50 years

(C) 45 years   (D) 60 years

Q.18 If x varies directly as y and inversely as z and if $x = a$ when $y = b$ and $z = c$, find x when $y = b^2$ and $z = c^2$

(A) $\dfrac{a^2}{b}$ (B) $\dfrac{a^2}{c}$

(C) $\dfrac{ab}{c}$ (D) $\dfrac{ac}{b}$

Q.19 Two trains travel in the same direction at speeds of 54 km/hr and 81 km/hr. A police man, who is siting in the faster train, passes the slower train in 50 sec. The length of the slower train in meter is _____.

Q.20 Ram reaches his office 20 min late if he walks at 6 km/hr from his house and he reaches 20 min early to the office if he walks at 8 km/hr from his house. Find the distance (in km) between his house to office.

Q.21 A, B and C can complete a piece of work in 8, 12 and 24 days respectively. If A and B work on the first days, B and C work on the second day and A and C work on the third day and the same pattern continues 4th day onward, then in

how many days will the work be completed?

(A) 3   (B) 6

(C) 8   (C) 12

Q.22 A trapezium with parallel sides 2 cm and 12 cm is inscribed in a circle. If the height of the trapezium is 12 cm, then what is the perimeter of the trapezium?

(A) 26 cm   (B) 38 cm

(C) 28 cm   (D) 40 cm

Q.23 A conical tent is to accommodate 10 persons. Each person must have 6 meter square space to sit and 30 meter cube of air to breathe. What will be the height (m) of the cone?

Q.24 There are five hotels in a line. If 4 men go into hotel at 11 a m what is the probability that each go into a different hotel?

(A) $\dfrac{124}{125}$ (B) $\dfrac{24}{125}$

(C) $\dfrac{48}{125}$ (D) $\dfrac{48}{625}$

Q.25 Pick out the one alternative which can be used to substitute the underlined group of words correctly, without changing the meaning of the sentence.

It was <u>them who had left before I arrived</u>.

(A) They who has left before I had arrived

(B) Them who had went before I had arrived

(C) Them who had left before I had arrived

(D) They who had left before I arrived

Q.26 In each of the following question, identify the pair that best expresses a relationship similar to that expressed in the original pair.

PAIN : ANODYNE

(A) Speed : Cop

(B) Slag : Smelting

(C) Gear : Clutch

(D) Stain : Detergent

Q.27 The following question consists of some statements followed by options consisting of three statements put together in a specific order. Choose the option which indicated a valid argument logically related statements that is where the third statement is a conclusion drawn from the preceding statements.

P : All mothers love their sons.

Q : Indira loves her son.

R : Indira is a mother

S : Some mothers love their sons.

T : Indira loves only her son.

(A) PQR   (B) PRQ

(C) PRT   (D) RSQ

Q.28 Out of 83 students, 47 students like Hindi movies, 38 like English movies and 9 students like both Hindi and English movies. How many students like neither Hindi nor English movies?

(A) 9   (B) 6

(C) 7   (D) 16

**Q.29** Read the following information carefully and answer the question given below :

(i) A, B, C, D, E, F and G are sitting around a circle and are facing the center.

(ii) G is second to the left of C, who is to the immediate left of F.

(iii) A is third to the left of E

(iv) B is between D and E

Which of the following is false?

(A) A is fourth to the right of E

(B) G is to the immediate right of D

(C) F is third to the right of D

(D) B is to the immediate left of D

Q.30 Study the graph and answer the question that follows.

Income and expenditure (in crore Rs.) of four companies in the year 2014 is shown.
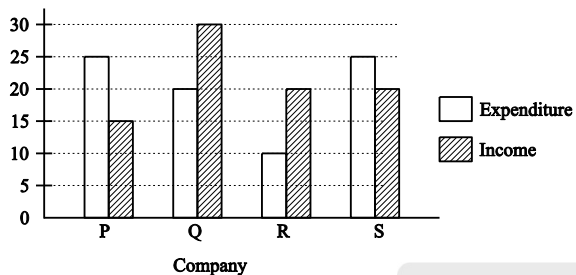
If the income of company Q in 2014 was 20% more than its income in 2013 and the company had earned a profit of 10% in 2013, then its expenditure in 2013 (in Crore Rs.) was _____(2 decimal places)

Q.31 The average life expectancy for the United States population as a whole is 73.9 years, but children born in Hawaii will live an average of 77 years, and those born in Louisiana, 71.7 years. If a newly wed couple from Louisiana were to begin their family in Hawaii, their children would live longer than if the couple began family in Louisiana.

Which of the following, if true, would most significantly strengthen the conclusion drawn in the passage?

(A) As population density increases in Hawaii, life expectancy figures for the state are likely to be revised downward

(B) Environmental factors tending to favor longevity are abundant in Hawaii and less numerous in Louisiana

(C) Over the last decade, average life expectancy has risen at a higher rate for Louisianans than for Hawaiians.

(D) Twenty-five percent of all Louisianans who move to Hawaii live longer than 22 years,

Q.32 "This text book is designed for use by Intermediate Students. This book is designed to develop interest in the English language."

Find out the strongest assumption/ interference :

1. The primary aim of any text book is to ignite curiosity and interest in students the subject taught.

2. English language is spoken all over the world.

3. It is necessary for all intermediate students to learn English language.

4. If we have proficiency in English language, it is easy to get a job.

(A) Only 1   (B) Only 3

(C) 1 and 4   (D) 1 and 3

Q.33 How many digits are there in 2^{27}?

Note : $(\log 2 = 0.3010)$

(A) 8   (B) 9

(C) 10   (D) 27

Q.34 There are a certain number of chocolates in a box. Ajit takes 1 chocolates less than half the number of chocolates in the box, Burman takes 2 chocolates less than one-third of the remaining and then, Chanti takes 3 chocolates less than one-fourth of the remaining. If there are still 36 chocolates left in the box. What was the initial number of chocolates in the box?

(A) 63   (B) 124

(C) 186   (D) None of these

Q.35 A truck covers 448 km in 8 hours. The average speed of bicycle is $\frac{1}{4}$ th of average speed of truck. The distance covered by bicycle in 7 hours is _____ km.

Q.36 The distance between two station A and B is 600 km. One train leaves station A towards station B at the average speed of 54 kmph. After an hour another train left station B towards station A at the average speed of 66 km per hour. The distance from station A where the two trains meet is _____ Kms.

Q.37 In a certain factory, each one of the a number of workers produces b pairs of shoes every c hours. If the workers work around the clock without any breaks, how many days are required to produce 1,000 pairs of shoes?

(A) $\frac{125c}{3ab}$ (B) $\frac{1000c}{ab}$

(C) $\frac{3a}{125bc}$ (D) $\frac{3c}{125ab}$

Q.38 A is 60% as efficient as B. C does half of the work done by A and B together. If C alone does the work in 80 days, then A, B and C together can do the work in

(A) $\frac{80}{3}$ (B) $\frac{50}{4}$

(C) $\frac{85}{3}$ (D) None of these

Q.39 How much water should be added to 150 litres of solution which contains 40% milk solution, to make the content of milk 30%?

(A) 40 litres (B) 20 litres
(C) 50 litres (D) 60 litres

Q.40 An isosceles ΔABC is inscribed in a circle such that one of its sides lies on the diameter of the circle. If the radius of the circle is 6 cm, find the area of the ΔABC.

(A) 108 cm^2 (B) 72 cm^2
(C) 54 cm^2 (D) 36 cm^2

Q.41 In a hall, there are 13 lamps among which 2 are of red, 2 are of green, 2 are of yellow and 2 are of blue colours and other 5 lamps of different colors. Each one of these except the two red lamps has a separate control switch. However, both the red lamps have one switch in common. Find the number of ways in which the hall can be illuminated by switching on any 4 lamps.

(A) 167 (B) 39
(C) 188 (D) 385

Q.42 The missing term in the following series is 128, 200, 288, …, 512

(A) 324 (B) 361
(C) 392 (D) 441

Q.43 If 50 dogs caught 50 chicks in 50 seconds then how many dogs are required to catch 1000 chicks in 1000 seconds.

(A) 100 (B) 1000
(C) 50 (D) 500

Q.44 In an examination, a student's average marks were 90 per paper. If she had obtained 5 more marks in her physics paper and 5 more marks in her mathematics paper, her average per paper would have been 92. How many papers were their in the examination?

(A) 5 (B) 10
(C) 8 (D) 11

Q.45 Munna gave milk to his three sons Dilharan, Nitesh and Saurabh, in three pots of the shapes of a hemisphere, a cube and a cuboid respectively. If radius

of hemispherical pot is 5 cm, side of cubic pot is 5 cm and sides of cuboid pot are $5\ cm \times 5\ cm \times 6\ cm$, then who will get more milk?

(A) Dilharan   (B) Nitesh

(C) Saurabh   (D) Equal to all

Q.46 The question is followed by two statements I and II. Mark the answer as

(A) If the question can be answered with the help of statement I, alone.

(B) If the question can be answered with the help of statement II, alone.

(C) If both statement I and statement II are needed to answer the question.

(D) If the question cannot be answered even with the help of both the statement.

If x, y and z are real numbers, is $z - x$ even or odd?

(i) xyz is odd

(ii) $xy + yz + zx$ is even

Q.47 Two stations P and Q are 110 km apart on a straight line. One train starts from P at 7 am and travels towards Q at 20 kmph speed. Another train start from Q at 8 am and travels towards P at a speed of 25 kmph. At what time will they meet?

(A) 9 am   (B) 10 am

(C) 10.30 am   (D) 11 am

Q.48 In a chess competition involving some boys and girls of a school, every student had to play exactly one game with every other student. It was found that in 45 games both the players were girls and in 190 games both were boys. The number of games in which one player was a boy and the other was a girl is

(A) 200   (B) 216

(C) 235   (D) 256

Q.49 In a certain code language 'SHASHI' is written as 'WLWWLE'. Then how is 'BRAJKISHOR' written in that code>

(A) FVWNOEWLKV

(B) FUEMNOWLVS

(C) FUENMOWMSV

(D) FVENNMWLSW

Q.50 Answer the following question based on the following graph

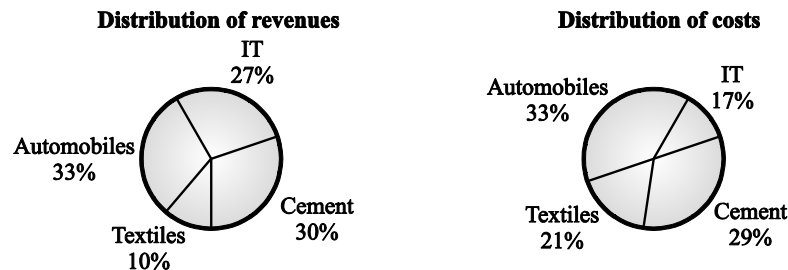| Annual revenue of XYZ corporation	
Year	Revenue (Rs. lakhs)
1988	20,000
1989	24,000
1990	29,600
1991	39,500
1992	52,500
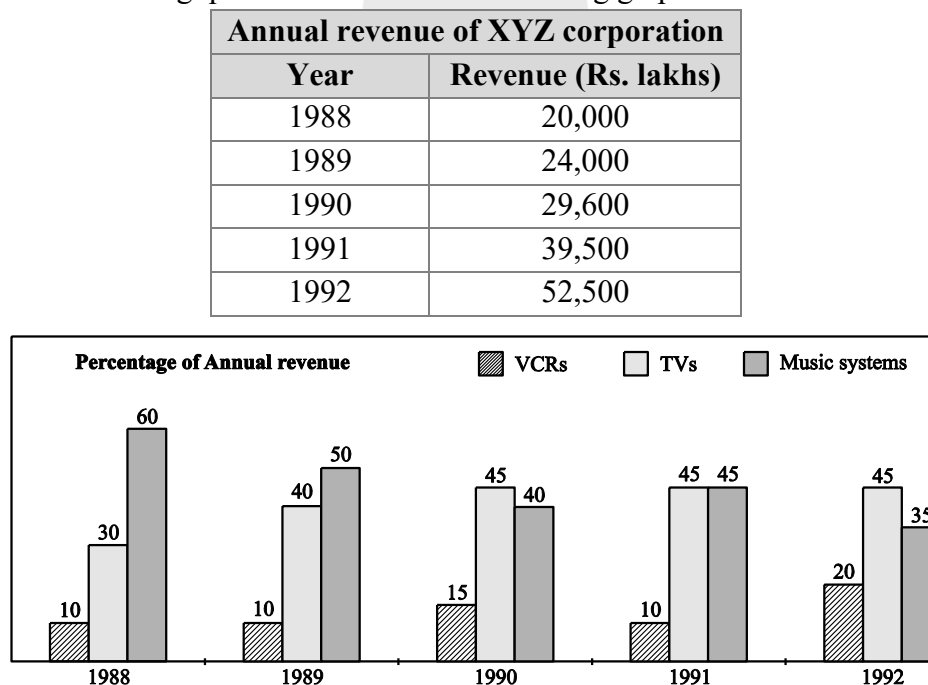
The greatest increase in the revenue over the previous year for VCRs was in :

(A) 1989   (B) 1990   (C) 1991   (D) 1992

Q.51 Company *XYZ* has four major businesses – Automobiles, IT, Cement and Textiles. The two pie charts show the distribution of revenues and costs across these businesses for the year 2008. The total revenue for the year 2008 is 3000 crores and the company has made a profit of 600 crores in the same period.

Distribution of revenues
IT 27%
Automobiles 33%
Cement 30%
Textiles 10%

Distribution of costs
Automobiles 33%
IT 17%
Cement 29%
Textiles 21%

What is the approximate profit percentage for company *XYZ* in its textile business?

(A) 68%   (B) – 40%   (C) – 11%   (D) – 68%

Q.52 Three numbers which are co-prime to each other are such that the product of the first two is 551 and that of the last two is 1073. The sum of three number is

(A) 85   (B) 80
(C) 75   (D) 65

Q.53 What is the remainder when

$$(2!)^3 + (3!)^3 + (4!)^3 + (5!)^3 + ... + (n!)^3$$

is divided by 5, where n is the largest 3-digit number?

(A) 1   (B) 2
(C) 3   (D) 4

Q.54 Choose the word which is most nearly the SAME in meaning as the word given in bold

TEDIOUS

(A) Husky   (B) Boring
(C) Alarming   (D) Deciduous

Q.55 Police encourages to report any crime witnessed by citizens as otherwise it could be taken as being _____ in that crime.

Complete the sentence using appropriate option.

(A) Disinterested   (B) adept
(C) Absorbed   (D) Complicit

Q.56 Select the word out of the options which correctly analyzes the underlined words

With her _____ hearing ability, Koushalya could here across the walls.

(A) inferior   (B) poor
(C) keen   (D) myopic

Q.57 In the following sentence, part of the sentence is left blank. Choose the best alternative among the four.

Reena made some _____ comments on her friend Richa and she was soundly chastised by her co-workers.

(A) Flattering
(B) Reverent
(C) Irreverent
(D) Complimentary

Q.58 Check for error in underlined part of the sentence.

It is common practice for a bank official to ask that a client presents an identification document of some kind before performing a transaction.

(A) No error

(B) Client present some sort of identification document.

(C) Client will present an identification document of some kind.

(D) Clients present an identification document of some kind.

Q.59 The below question contains statements and conclusions. Take the statements to be true and find out what conclusions can be drawn.

S1 : All eye drops are liquids.

S2 : Some eye drops are ear drops.

C1 : Liquids are drinkable.

C2 : Some eye drops are drinkable.

C3 : All liquids are eye drops.

C4 : Some ear drops are drinkable.

(A) I and II follow

(B) II, III and IV follow

(C) Only III follow

(D) None follow

Q.60 Read the statement or passage and then choose the best answer to the question. Answer the question on the basis of what is stated or implied in the statement or passage.

Myths are stories, the products of fertile imagination, sometimes simple, often containing profound truths. They are not meant to be taken too literally. Details may sometimes appear childish, but most myths express a culture's most serious beliefs about human beings, eternity, and God. The main idea of this passage is that myths

(A) Are created primarily to entertain young children

(B) Are purposely written for the reader who lacks imagination

(C) Provide the reader with a means of escape from reality

(D) Illustrate the values that are considered important to a society

Q.61 In order to offset the traffic snarls and the parking woes, the city police commissioner has devised a plan according to which, automobiles should be parked in the premises of temples and educational institutions.

Which of the following assumptions the police commissioner must be NOT making?

(A) Students rarely use the parking lot in their schools since they are accompanied by their elders.

(B) It is customary that places of worship should be visited on foot rather than otherwise.

(C) Typically the town planning department stipulates that every construction for the purpose of education or worship should invariably allocate one-third of the open place for parking.

(D) The congregations at places like education and worship symbolize tranquility and so are free from violence and noise.

Q.62 Identify the figure that completes the pattern.

(X)   (1)   (2)   (3)   (4)
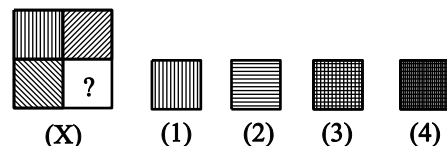
(A) 1   (B) 2

(C) 3   (D) 4

Q.63 Given below are two premises, with four conclusions drawn from then (taking singly or together) which conclusions

are validly drawn? Select the correct answer from the codes given below :

(i) All bats are mammals.

(ii) Birds are not bats.

Conclusions :

(A) Birds are not mammals.

(B) Bats are not birds.

(C) All mammals are bats.

(D) Some mammals are not bats.

(A) A   (B) B

(C) C   (D) D

Q.64 Given below two premise and four conclusions are drawn from them (taking singly or together). Select the code that states the conclusion validly drawn.

Premises :

(i) All religious persons are emotional.

(ii) Ram is a religious person.

Conclusion :

(i) Ram is emotional.

(ii) All emotional persons are religious.

(iii) Ram is not a non- religious person.

(iv) Some religious persons are not emotional.

(A) Only conclusion (i) follows.

(B) Both conclusion (iii) and (iv) follows.

(C) Both conclusion (i) and (iii) follows.

(D) Only conclusion (iii) follows.

Q.65 The area of a square is d. What is the area of the circle which has the diagonal of the square as its diameter?

(A) πd (B) πd^2

(C) $\left(\dfrac{1}{2}\right)\pi d^2$ (D) $\left(\dfrac{1}{2}\right)\pi d$

Q.66 28 persons are in a room. 15 of them play hockey, 17 of them play football

and 10 of them play both hockey and football. Then the number of persons playing neither hockey nor football is :

(A) 6   (B) 17

(C) 13   (D) 3

Q.67 A piece of paper is folded and punched as shown below in the question figures. From the given answer figures, indicated how it will appear when opened.
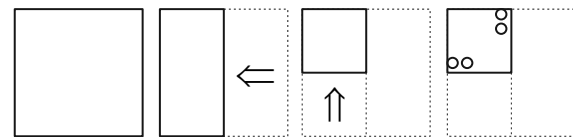
(A)   (B)

(C)   (D)

Q.68 Choose the correct mirror image of given figure from given options:

Questions figure:
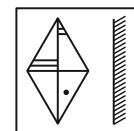
(A)   (B)

(C)   (D)

Q.69 Ten persons are sitting in two parallel rows. In row-1 A, B, C, D and E are sitting facing north. In row-2 P, Q, R, S and T are sitting facing south. The person in row-1 exactly faces the person in row-2.

R does not sit opposite to C. A sits second from extreme end. Only one person sits between one who faces A and Q. B is not an immediate neighbor of A and does not sits apposite to Q. E sits second to the left of B. T does not faces E and never sits at extreme end. S is not an immediate neighbor of T. C does not sit opposite to Q. Choose the pairs of person who sits on corners.

(A) PRCB (B) CBST

(C) ATBS (D) PSCB

Q.70 Select the option that is different from the other three options

(A) Resentful (B) Untroubled

(C) Desolate (D) Sad

Q.71 Find the unit digit in the expression $78^{5562} \times 56^{256} \times 97^{1250}$ _____ .

Q.72 In a queue of fifteen people facing North, Rahul's position is ninth from the end of the queue only four people are standing between Rahul and Tom. Karan is standing immediately after Tom. Bharti is standing exactly between Karan and Rahul. Sonali is standing before Bharti, but after Tom. What is the position of Sonali from beginning of the queue?

[**Note :** All people are standing one behind the other].

(A) Seventh

(B) Eleventh

(C) Fourth

(D) Cannot be determined

Q.73 In the given figure *ABCDEF* is a regular hexagon whose. Side is 6 cm. *APF*, *QAB*, *DCE* and *DES* are equilateral triangles. What is the area (in cm^2) of the shaded region?
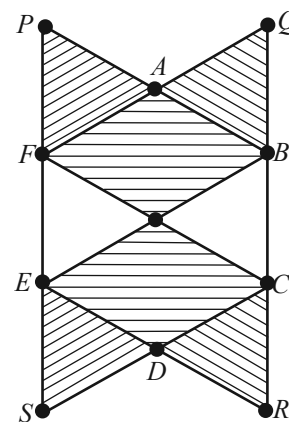
(A) $24\sqrt{3}$ (B) $13\sqrt{3}$

(C) $72\sqrt{3}$ (D) $36\sqrt{3}$

Q.74 In the question given below are given three statements followed by three conclusion I, II and III. You have to take the given statements to be true if they seen to be variance from commonly known facts. Read all the conclusions and decide which of the given conclusion logically follows from the given statements disregarding commonly known facts.

Statements :

Some nurses are doctors

All doctors are medicine

Some medices are tablet

Conclusion :

I. At least some tablets are doctors.

II. Some medicines are doctor is a possibility.

III. Some medicines are definitely nurses.

(A) I and II follows

(B) II and III follows

(C) Either III or IV follows

(D) None of these

Q.75 Let A, B, C be three events such that $P(A) = 0.3, P(B) = 0.4, P(C) = 0.8$, $P(A \cap B) = 0.08, P(A \cap C) = 0.28$, $P(A \cap B \cap C) = 0.09$.

If $P(A \cup B \cup C) \geq 0.75$, then

(A) $0.23 \leq P(B \cap C) \leq 0.48$

(B) $0.23 \leq P(B \cap C) \leq 0.75$

(C) $0.48 \leq P(B \cap C) \leq 0.75$

(D) $0.23 \leq P(A \cap C) \leq 0.75$

Answers — General Aptitude

1.	D	2.	B	3.	C	4.	C	5.	B
6.	C	7.	B	8.	D	9.	B	10.	B
11.	A	12.	B	13.	B	14.	D	15.	660
16.	B	17.	D	18.	C	19.	375	20.	16
21.	B	22.	D	23.	15	24.	B	25.	D
26.	D	27.	B	28.	C	29.	C	30	22.77
31.	B	32.	A	33.	B	34.	B	35.	98
36.	299.7	37.	A	38.	A	39.	C	40	D
41.	D	42.	C	43.	C	44.	A	45.	A
46.	A	47.	B	48.	A	49.	A	50.	D
51.	B	52.	A	53.	C	54.	B	55.	D
56.	C	57.	C	58.	B	59.	D	60.	D
61.	B	62.	B	63.	B	64.	C	65.	D
66.	A	67.	C	68.	B	69.	D	70.	B
71.	6	72.	C	73.	C	74.	D	75.	A

Explanations — General Aptitude

1. (D)

Prophet : A person who proclaims the will of God.

Explorer : Someone who explores new area.

Protagonist : Champion of some cause or idea, leading character.

Hence, the correct option is (D).

2. (B)

Ravenous : Extremely hungry, famished or intense eager for gratification or satisfaction.

Treachery : Violation of faith, betrayal of trust, treason.

Hence, the correct option is (B).

3. (C)

Rule :

(i)   The conjunction 'that' will not be used in indirect speech (interrogative sentence).

(ii)   In interrogative sentence of indirect speech, the question is changed into assertive form.

So, options (B) and (D) can be easily eliminated. Only option (C) logically follows the flow of sentence (rule 2).

Hence, the correct option is (C).

4. (C)

This sentence asks you to look for a word that describes how the ravens behave.

Rule : The information after the comma restates and defines the meaning of the missing word.

Actively helping one another to find food, clearly tells how cooperative they are.

Hence, the correct option is (C).

5. (B)

The semicolon indicates that the second part is closely related to the first.

So, since the student was foolhardy (reckless) he was doing something unwise.

Wisdom : State of being wise. (Opposite in meaning)

Temerity : Reckless boldness or rashness. (Most suitable)

Trepidation : Fear and hesitation. (Opposite in meaning)

Hence, the correct option is (B).

6. (C)

(DEFINING CHARACTERISTIC)

Electricity is transmitted as a current.

Light is transmitted as a beam.

Hence, the correct option is (C).

7. (B)

Conclusion I is extreme since we have no information about other plants.

Conclusion II is correct because the statement explicitly mentions that cactus requires little water and it can be concluded that cactus can sustain in arid or dry deserts.

So, it can be inferred that only conclusion II is implied.

Hence, the correct option is (B).

8. (D)

Observe the following Venn diagram :

(i)
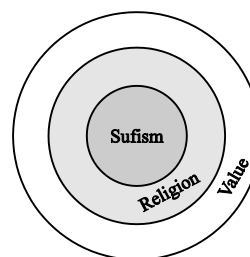
(ii)
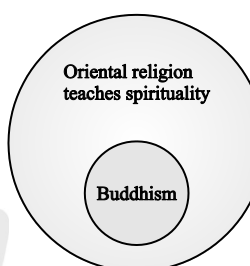
(iii)
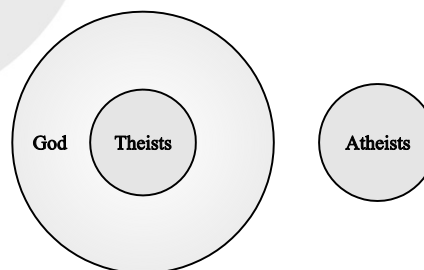
(iv)
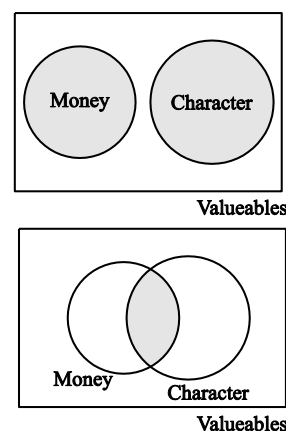
In statements (i), (ii) and (iii), the third segment logically follows its preceding segments.

But in statement (iv) it can be clearly observed that, the third segment is ambiguous since, there

are two possible ways from the preceding two statements.

Hence, the correct option is (D).

9. (B)

The alphabets (excluding vowels) can be number-coded as below :

```
    1   2   3       4   5   6       7   8   9   10  11
X   B   C   D   X   F   G   H   X   J   K   L   M   N
    12  13  14  15  16      17  18  19  20  21
X   P   Q   R   S   T   X   V   W   X   Y   Z
```

Checking the given two equations :

$$C \to 2 \qquad\qquad F \to 4 \quad 2 \times 4 = 8$$
$$D \to 3 \qquad\qquad G \to 5 \quad 3 \times 5 = 15$$

So, the third equation can be solved as :

$$\boxed{B} \times \boxed{?} \to \boxed{19}$$

Putting, $B \to 1$

$$1 \times ? = 19 \implies ? = 19$$

Therefore,

$$? = 19$$

Hence, the correct option is (B).

10. (B)

C.P. of goods for the trader $= ₹\,22520$

$$\text{S.P.} = \frac{125}{100} \times 22520 = ₹\,28150$$

$\therefore$ Profit $= ₹\,5630$

Now, $5630 = 0.0536 \times 5000 + 0.085 \times 10000$

$$+ \frac{x}{100} \times 7520$$

$$5630 = 268 + 850 + 75.2x$$
$$75.2x = ₹\,4512 \qquad (\text{where, } x = 60)$$

Which is nothing but profit from sale of third lot.

Hence, the correct option is (B).

11. (A)

The number of students appeared in exams A, B and D combined in 2005

$$= (42 + 30 + 5)\% = 77\% \text{ of } 142000$$

$$= \frac{77}{100} \times 142000$$

The number of students appears for exams A, B and D combined in 2009

$$= (32 + 25 + 20)\% = 77\% \text{ of } 200000$$

$$= \frac{77}{100} \times 200000$$

Percentage increase is given by,

$$= \frac{\dfrac{77}{100} \times 200000 - \dfrac{77}{100} \times 142000}{\dfrac{77}{100} \times 142000} \times 100$$

$$= \frac{200000 - 142000}{142000} \times 100$$

$$= \frac{58000}{142000} = 40.84\%$$

Hence, the correct option is (A).

12. (B)

Company alpha is causing a loss to Bravo by marketing the coupons. So, Bravo has to devise a plan which can restrict Alpha company from buying and selling coupons.

The best plan is stated in option (B) i.e. by limiting the use of the coupons to those who were awarded the coupons and members of their immediate family.

Hence, the correct option is (B).

13. (B)

Options (A) and (C) are considering the time it takes for transition as a problem. But it does not weaken the argument stated.

Option (D) considers the problem of toxic fumes emitted in the production which is not the part of above argument.

Option (B) : If true, then also the threat of landfills will be prevalent and therefore weakens above argument.

Hence, the correct option is (B).

14. (D)

Let us consider total number of families $= 100$

In that 60% of families having 3 children

i.e., $60 \times 3 = 180$ (Number of children)

Likes that 20% have 2 children $= 20 \times 2 = 40$

20% have 1 children $= 20 \times 1 = 20$

Probability of choosing a children the family have two children

$$= \frac{40}{(180 + 40 + 20)} = \frac{40}{240} = \frac{1}{6}$$

Hence, the correct option is (D).

15. **660**

Given : Let $A = x - 4$

$B = x - 2$

$C = x$

$D = x + 2$ and $E = x + 4$

According to the question,

$(x - 4) + (x - 2) + (x)$

$+ (x + 2) + (x + 4) = 130$

$5x = 130 \implies x = 26$

Thus, $A = 22$ and $E = 30$

$A \times E = 22 \times 30 = 660$

Hence, the correct answer is 660.

16. **(B)**

$$\log_4 \frac{2}{x} + \log_{16} 0.5 = 2$$

Property : $\log_{a^m} x = \frac{1}{m} \log_a x$

$$\log_4 \frac{2}{x} + \log_{4^2} \frac{1}{2} = 2$$

$$\log_4 \frac{2}{x} + \frac{1}{2} \log_4 \frac{1}{2} = 2$$

$$\left(\log_4 2 - \log_4 x \right) + \frac{1}{2} \log_4 \frac{1}{2} = 2$$

$$\log_4 x = \log_4 2 - \frac{1}{2} \log_4 2 - 2$$

$$\log_4 x = \frac{1}{2} \log_4 2 - 2$$

$$\log_4 x = \frac{1}{2} \times \frac{1}{2} - 2 = -\frac{7}{4}$$

$$4 \log_4 x = -7$$

Hence, the correct option is (A).

17. **(D)**

Let the age of mother be x years

Age of the son $= \dfrac{x}{2}$ years

and the age of the daughter $= \left(\dfrac{x}{2} - 7 \right)$ years

and the age of the father $= 3 \left(\dfrac{x}{2} - 7 \right)$ years

$$3 \left(\frac{x}{2} - 7 \right) - x = 9$$

$$\frac{3x}{2} - x - 21 = 9$$

$$\frac{x}{2} = 30$$

$$x = 30 \times 2 = 60 \text{ years}$$

Hence, the correct option is (D).

18. **(C)**

Given : $x \propto \dfrac{y}{z}$

$$x = \frac{ky}{z} \quad (k \text{ is constant})$$

When $y = b$, $z = c$; $x = a$

$$a = \frac{kb}{c} \implies k = \frac{ac}{b}$$

When $y = b^2$ and $z = c^2$,

$$x = \frac{ky}{z} = \frac{ac}{b} \times \frac{b^2}{c^2} = \frac{ab}{c}$$

Hence, the correct option is (C).

19. **375**

Let x be the length of slower train.

Time taken by faster train to pass slower train

$$= \frac{x}{(81 - 54) \times \dfrac{5}{18}} = 50$$

$$\frac{x}{22.5 - 15} = 50$$

$$x = 375$$

Hence, the correct answer is 375.

20. **16**

Let the usual time taken be $'t'$ hrs and speed be $'x'$ km/hr.

$$\text{Distance} = xt = 6\left(t+\frac{20}{60}\right) = 8\left(t-\frac{20}{60}\right)$$

$$2(3t+1) = \frac{8}{3}(3t-1)$$

$$6(3t+1) = 8(3t-1)$$

$$6t = 14 \implies t = \frac{7}{3}$$

$$\text{Distance} = 6\left(\frac{7}{3}+\frac{1}{3}\right) = 6\times\frac{8}{3} = 16 \text{ km}$$

Hence, the correct answer is 16.

21. **(B)**

Work done on the first day $= \frac{1}{8}+\frac{1}{12} = \frac{5}{24}$

Work done on the second day $= \frac{1}{12}+\frac{1}{24} = \frac{3}{24}$

Work done on the third day $= \frac{1}{8}+\frac{1}{24} = \frac{4}{24}$

Work done in the first three days

$$= \frac{5}{24}+\frac{3}{24}+\frac{4}{24} = \frac{12}{24} = \frac{1}{2}$$

$\because$ $\frac{1}{2}$ work is done in 3 days.

Thus, the work will be completed in 6 days.
Hence, the correct option is (B).

22. **(D)**
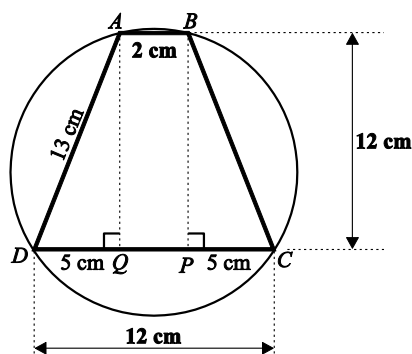
Any trapezium inscribed in a circle is always an isosceles trapezium.

$AD = BC$ and $DQ = PC = 5$ cm

Now, in $\triangle AQD$, right angle is at Q,

$$AQ^2 + QD^2 = AD^2$$

$$AD = 13 \text{ cm}$$

Perimeter of trapezium

$$= (2+12+13+13) = 40 \text{ cm}$$

Hence, the correct option is (D).

23. **15**

Given : Each person occupies area of 6 m^2.

10 person occupies area of $6\times10 \text{ m}^2 = 60 \text{ m}^2$

(which is πr^2 where r is the radius of base)

Each person need volume of 30 m^3 to breathe.

10 person occupies volume of 300 m^3.

The volume of cone $\frac{1}{3}\pi r^2 h = 300 \text{ m}^3$

Now $\pi r^2 = 60$, thus the above expression becomes $\left(\frac{1}{3}\right)\times60\times h = 300$

$$h = 15\,\text{m}$$

Hence, the correct answer is 15.

24. **(B)**

Four men can go in five hotels in $5\times5\times5\times5 = 5^4$ ways

Number of ways in which 4 men can go into different hotel $= {}^5P_4 = \frac{5!}{(5-4)!} = 5!$

Required probability $= \frac{5!}{5^4} = \frac{120}{625} = \frac{24}{125}$

Hence, the correct option is (B).

25. **(D)**

The most suitable flow of sentence is
It was they who had left before I arrived.
Hence, the correct option is (D).

26. **(D)**
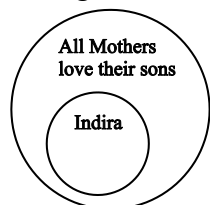
Defining characteristics
The function of anodyne is to reduce pain.
The function of detergent is to remove stain.
Hence, the correct option is (D).
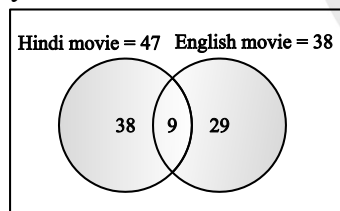
27. **(B)**

Observe the following Venn diagram :

Hence, the correct option is (B).

28. **(C)**

47 like Hindi movie, 9 like both Hindi and English.
Hence, only Hindi movie $= 47 - 9 = 38$

38 Like English movie, 9 like both English and Hindi movie.
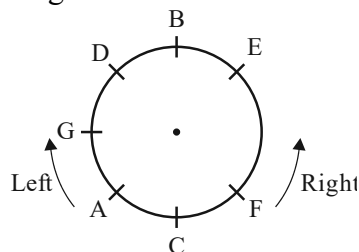Hence, only English movie $= 38 - 9 = 29$
Required number of student
$$= 83 - (38 + 29 + 9) = 7$$
Hence, the correct option is (C).

29. **(C)**

Given figure shows the correct position of persons sitting around the circle.

Clearly, F is fourth to the right of D.
Hence, the correct option is (C).

30. **22.77**

Profit is computed on expenditure.
Let income of company Q in 2013 = Rs. x Crore
According to question the income of Q in 2014 is 20% more than that in 2013.

So, $\quad 30 = \dfrac{120}{100} x$

$\qquad x = 25$ Crore

Let expenditure of Q in 2013 be Rs. E Crore
Then,

Profit % $= \dfrac{\text{Income} - \text{Expenditure}}{\text{Expenditure}} \times 100$

$$10 = \left(\dfrac{25 - E}{E} \right) \times 100$$

$$10 = \left(\dfrac{25}{E} - 1 \right) \times 100$$

$$E = 25 \times \dfrac{10}{11} = 22.77$$

Expenditure of Q in 2013 = Rs.22.77 Crore
Hence, the correct answer is 22.77.

31. **(B)**

Option (A) and (C) will weaken the asked conclusion. Between option (B) and (D), if true, option (B) will strengthen the conclusion.
Hence, the correct option is (B).

32. **(A)**

Option (B), (C) and (D) has irrelevant information's.
Only option (A) is the strongest interference from the given statement.
Hence, the correct option is (A).

33. **(B)**

Given : $(\log 2 = 0.3010)$

Let, $\quad x = 2^{27}$

Taking $\log_{10}$ on both sides,

$$\log_{10} 2^{27} = 27 \log_{10} 2$$

$$\log_{10} 2^{27} = 27 \times 0.3010$$
$$\log_{10} 2^{27} = 8.127$$
Taking antilog on both sides,
$$2^{27} = 10^{8.127} \Rightarrow [9 \text{ digits}]$$
Hence, the correct option is (B).

34. (B)

Let N be the number of chocolates in the box
Number of chocolates left after Ajit has taken
$$= \frac{N}{2} + 1$$
Number of chocolates left after Burman has taken $= \frac{2}{3}\left[\frac{N}{2} + 1\right] + 2 = \frac{N}{3} + \frac{8}{3}$

Number of chocolates left after Chanti has taken
$$= \frac{3}{4}\left[\frac{N}{3} + \frac{8}{3}\right] + 3 = \frac{N}{4} + 5$$
According to question,
$$\frac{N}{4} + 5 = 36 \Rightarrow \frac{N}{4} = 31$$
$$N = 124$$
Hence, the correct option is (B).

35. 98

Given : A truck covers 448 km in 8 hours.
Average speed of truck
$$= \frac{\text{Distance covered}}{\text{time taken}} = \frac{448}{8} = 56 \text{ kmph}$$
According to question,
Average speed of bicycle
$$= \frac{1}{4} \times \text{Average speed of truck}$$
$$= \frac{1}{4} \times 56 = 14 \text{ kmph}$$
Distance covered by bicycle in 7 hours
$$= 14 \times 7 = 98 \text{ km}$$
Hence, the correct answer is 98.

36. 299.7

Given : Distance between A and B is 600 km

Speed of first train = 54 km/hr
Speed of second train $= 66$ km/hr
But 2nd train leaves 1 hr after the first. So first train has covered 54 km
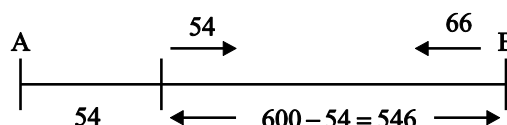
Relative speed $= 54 + 66 = 120$ km/hr

Time taken $= \dfrac{546}{120} = 4.55$ hr

First train travels $((54 \times 4.55) + 54)$ km i.e. 299.7 km by the time they meet.
Hence, the correct answer is 299.7.

37. (A)

One worker takes 'c' hours to produce 'b' pairs of shoes.

Thus, each worker produces $\dfrac{b}{c}$ pairs of shoes per hour.

'a' number of worker produce $\dfrac{ab}{c}$ pairs of shoes per hour.

Therefore, in one day $24 \times \dfrac{ab}{c}$ pairs of shoes are produced.

So, to produce one pair of shoes, days required
$$= \frac{c}{24\,ab} \text{ days}$$

Days required to produce 1000 pairs of shoes is given by,
$$1000 \times \frac{c}{24ab} = \frac{125c}{3ab}$$
Hence, the correct option is (A).

38. (A)

Given : C can do a work in 80 days.

So, C's one day work $= \dfrac{1}{80}$

According to question, C does half of the work done by $(A+B)$

$$\frac{1}{80} = \frac{A+B}{2}$$

So, $(A+B)'s$ one day work $= \frac{1}{40}$

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

$$= \frac{1}{80} + \frac{1}{40} = \frac{3}{80}$$

$(A+B+C)$ can do $\frac{3}{80}$ work in 1 day.

$(A+B+C)$ can do the work in $\frac{80}{3}$ days.

Hence, the correct option is (A).

39.   **(C)**

Quantity of milk present in the solution = 40% of 150 = 60
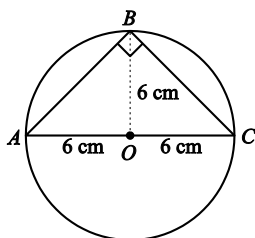
Quantity of water present in the solution = 60% of 150 = 90

Let us add x litres of water to make 30% milk solution (i.e. 70% water)

So, $90 + x = 70\%$ of $(150 + x)$

$$\frac{90+x}{150+x} = \frac{7}{10} \Rightarrow x = 50$$

Hence, the correct option is (C).

40.   **(D)**

As one of its sides lies on the diameter therefore it is a right angled isosceles triangle

Area of $\triangle ABC = \frac{1}{2} \times AC \times BO$

$$= \frac{1}{2} \times 12 \times 6 = 36 \text{ cm}^2$$

Hence, the correct option is (D).

41.   **(D)**

Given : In a hall, there are 13 lamps (2 Red, 11 others).

Both the 2 Red lamps have a common switch.

All the 11 other lamps have separate control switches.

So, total switches = 12

To switch on 4 lamps, the possible ways are

Case I : Both Red lamps are ON.

1 Switch for 2 Red lamps.

2 More switches can be selected for 2 more lamps out of 11 remaining switches.

So, the number of possible ways to switch ON 4 lamps is,

$$1 \times {}^{11}C_2 = {}^{11}C_2$$

Case II : None of the Red lamps are ON.

4 switches can be selected for 4 lamps out of 11 switches (Red not considered).

So, the number of possible ways to switch ON 4 lamps is, ${}^{11}C_4$

Thus, total possible ways $= {}^{11}C_2 + {}^{11}C_4$

$$= \frac{11!}{2! \times 9!} + \frac{11!}{4! \times 7!} = 385$$

Hence, the correct option is (D).

42.   **(C)**

$$4^2 \times 8 = 128 \qquad 6^2 \times 8 = 288$$

$$8^2 \times 8 = 512$$

$$5^2 \times 8 = 200 \qquad 7^2 \times 8 = 392$$

Hence, the correct option is (C).

43.   **(C)**

50 dogs catch 50 chicks in 50 seconds, so in 1000 seconds, 50 dogs will catch

$$\frac{M_1 H_1}{W_1} = \frac{M_2 H_2}{W_2}$$

where, $M_1 = 50$ dogs, $H_1 = 50$ sec,

$\qquad W_1 = 50$ chicks, $H_2 = 1000$ sec,

$\qquad W_2 = 1000$ chicks.

So, $\qquad M_2 = 50$

Hence, the correct option is (C).

44. (A)

Given : Average marks per paper $= 90$

Let us assume total number of paper $= x$

and sum of marks in all the papers $= y$

$$\text{Average} = \frac{\text{Sum of marks}}{\text{number of papers}} = \frac{y}{x}$$

$$90 = \frac{y}{x} \implies y = 90x$$

According to question,

$$92 = \frac{y + 5 + 5}{x}$$

$$92 = \frac{90x + 10}{x}$$

$$92x - 90x = 10$$

$$2x = 10$$

$$x = 5$$

Hence, the correct option is (A).

45. (A)

Amount of milk for Dilharan:

Volume of the hemispherical pot

$$= \frac{2}{3} \times \pi r^3$$

$$= \frac{2}{3} \times \frac{22}{7} \times (5)^3$$

$$= 261.90 \text{ cm}^3$$

Amount of milk for Nitesh:

Volume of the cubic pot $= (5)^3 = 125 \text{ cm}^3$

Amount of milk for Saurabh:

Volume of the cuboid pot $= 5 \times 5 \times 6 = 150 \text{ cm}^3$

Since, volume of hemispherical pot is maximum, therefore Dilharan will get the maximum milk.

Hence, the correct option is (A).

46. (A)

From statement I, we can say that all three of them are odd. Hence, (z – x) is even. So, only statement I is sufficient to answer the question.
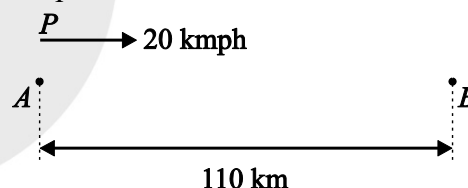
Hence, the correct option is (A).

47. (B)

Given : Two stations are 110 km apart.

Let, the two stations are A and B.

At 7 am :

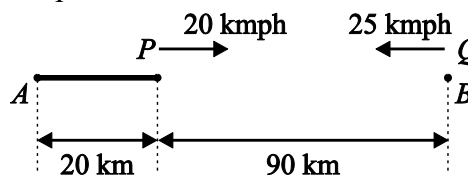The train P starts from A towards B at a speed of 20 kmph.

At 8 am : Train P has covered a distance of $20\left(\dfrac{\text{km}}{\text{hr}}\right) \times 1(\text{hr}) = 20 \text{ km}$ and continues towards B.

The train Q starts from B towards A at a speed of 25 kmph.

Remaining distance of 90 km is covered by both the trains.

So, relative speed $= 25 + 20 = 45$ kmph

They meet after $= \dfrac{90}{45} = 2$ hrs i.e. 2 hrs after 8 am

i.e. $\qquad 8 + 2 = 10$ am

Hence, the correct option is (B).

48. (A)

Let there be g girls and b boys.
Number of games between two girls,

$$^{g}C_2 = 45$$

$$\frac{g(g-1)}{2} = 45$$

$$g^2 - g - 90 = 0 \implies (g-10)(g+9) = 0$$

$$g = 10 \text{ and } g = -9 \implies g = 10$$

(number of girls cannot be negative)
Number of games between two boys,

$$^{b}C_2 = 190$$

$$\frac{b(b-1)}{2} = 190$$

$$b^2 - b - 380 = 0 \implies (b-20)(b+19) = 0$$

$$b = 20 \text{ and } b = -19 \implies b = 20$$

(number of boys cannot be negative)
The total number of games

$$= {}^{(g+b)}C_2 = {}^{30}C_2 = \frac{30 \times 29}{2 \times 1} = 435$$

Number of games in which one player is a boy and the other is a girl

$$= 435 - 45 - 190 = 200$$

Hence, the correct option is (A).

49. (A)
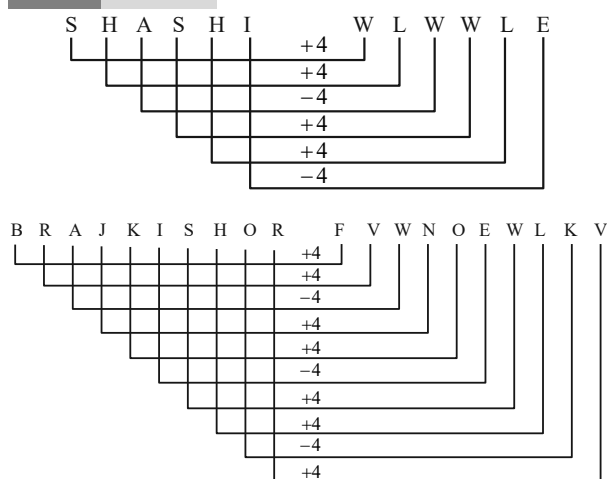
For consonant : + 4
For vowel : − 4
Hence, the correct option is (A).

50. (D)

Annual revenue for VCRs in Rs. lakhs	
1988	$0.1 \times 20000 = 2000$
1989	$0.1 \times 24000 = 2400$
1990	$0.15 \times 29600 = 4440$
1991	$0.1 \times 39500 = 3950$
1992	$0.2 \times 52500 = 10500$

From the above table, it is clear that the greatest increase in revenue is observed in 1992.
Hence, the correct option is (D).

51. (B)

Total revenues = 3000 crore
Total profit = 600 crore

📖 **Key Point**

Cost + [Profit (+ve) or Loss (− ve)] = Revenue

Total cost = 3000 − 600 = 2400 crore
Now, share of textiles in the total revenues
= 10% i.e. $0.1 \times 3000 = 300$ crore
Similarly, share of textiles in the total cost
= 21% i.e. $0.21 \times 2400 = 504$ crore
Now, profit for the textiles division
= revenues − cost = 300 − 504
= − 204 crores (Loss of 204 crore)

Therefore, profit percentage $= \dfrac{\text{Profit}}{\text{Cost}} \times 100$

$$= -\frac{204}{504} \times 100 = -40.47\%$$

Hence, the correct option is (B).

52. (A)

Co-prime numbers have 1 as the common factor.
So middle number = H.C.F of 551 and 1073 = 29

First number $= \dfrac{551}{29} = 19$

Third number $= \dfrac{1073}{29} = 37$

Sum of three numbers = 19 + 29 + 37 = 85

Hence, the correct option is (A).

53.　(C)

Terms beyond 4! will have 5 as a factor and hence are divided by 5.

So, Remainder will be zero for numbers beyond 4!.

Hence, the remainder will be the same when, $(2!)^3 + (3!)^3 + (4!)^3$ is divided by 5.

The remainder when these numbers are divided by 5 are as follows :

$$\text{Rem}\frac{(2!)^3}{5} = 3$$

$$\text{Rem}\frac{(3!)^3}{5} = 1$$

$$\text{Rem}\frac{(4!)^3}{5} = \text{Rem}\frac{(24)^3}{5} = 4$$

So, the final remainder of $\frac{(3+1+4)}{5}$ is 3.

Hence, the correct option is (C).

54.　(B)

Husky : Muscular and heavily built.
Boring : Lacking in interest, tedious.
Alarming : Frightening, causing fear.
Deciduous : Being shed at the end of a period of growth.
Hence, the correct option is (B).

55.　(D)

'Complicit' means involved in a questionable act or a crime. The words in the other options do not support the reference to the context of the sentence.
Hence, the correct option is (D).

56.　(C)

"Keen" means being extremely sensitive or responsive. Since, Koushalya could hear across the walls, she must be having extremely sensitive hearing ability.
Hence, the correct option is (C).

57.　(C)

"Irreverent" means lacking respect or seriousness. Since, Reena was chastised by her co-workers, she must have made some disrespecting comments on her friend Richa.
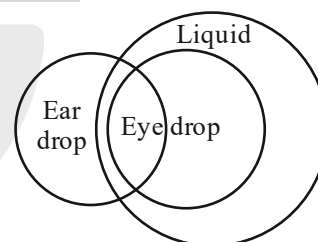Hence, the correct option is (C).

58.　(B)

'Ask' is one of the 9 verbs to which the subjunctive rule applies (if it is followed by 'that'). This means that the next verb after 'ask that' should be in base form. Therefore, 'present' will be used.
Hence, the correct option is (B).

59.　(D)

C1 : Liquid are drinkable. Does not follow as the variable drinkable is not present in statement.

C2 : Some eye drop are drinkable. Does not follow, as the variable drinkable is not present in statement.

C3 : All liquid are eye drops. Does not follow, as seen in the diagram.

C4 : Some ear drop are drinkable. Does not follow, as the variable drinkable is not present in the statement.

Hence, the correct option is (D).

60.　(D)

The passage states that myths are stories that often contain profound truths and they express a culture's belief. Therefore, the main idea of this passage is that myths illustrate the values that are considered important to a society.
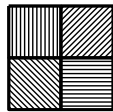Hence, the correct option is (D).

61. (B)

Assuming that places of worship and education are visited bare-foot does not mean that people do not use vehicles to reach them.

Thus, this is the assumption which cannot be logically made by the city police commissioner.
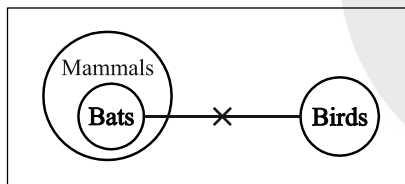
Hence, the correct option is (B).

62. (B)

Hence, the correct option is (B).

63. (B)

The Venn diagram according to the given premises is as follows :

Given conclusions :

(A) Birds are not mammals.

False, from Venn diagram we can't say that birds are not mammals.

(B) Bats are not birds.

True, from Venn diagram we can say that bats are not birds.

(C) All mammals are bats.

False, all bats are mammals, but we can't say all mammals are bats.
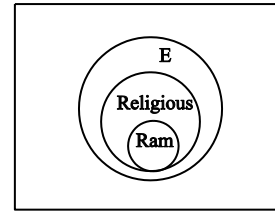
(D) Some mammals are not bats.

False, from Venn diagram we can't say that some mammals are not bats.

So, conclusion statements 'B' is true.

Hence, the correct option is (B).

64. (C)

The Venn diagram according to the given premises is as follows :

Conclusion :

(a) Ram is emotional.

True, from Venn diagram we can say that ram is emotional.

(b) All emotional persons are religious.

False, from Venn diagram we can say that all religious persons are emotional but not all emotional persons are religious.

(c) Ram is not a non-religious person.

True, from Venn diagram we can say that ram is a religious person.

(d) Some religious persons are not emotional.

False, from Venn diagram we can say that all religious person are emotional but we can't say that all emotional person are religious.

So, conclusion statements (a) and (c) are correct.

Hence, the correct option is (C).

65. (D)
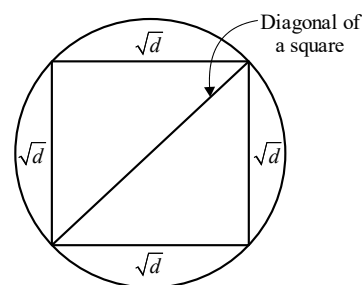
Given : Area of a square $= d$

As we know

Area of a square $A = a^2$ (where a is side)

So, from the question,

$\because$ Area of a square $= d$

$\therefore$ The side of a square $= \sqrt{d}$

&   Diagonal of a square = Diameter of circle

From Pythagoras theorem,

Diagonal of a square $= \sqrt{(\sqrt{d})^2 + (\sqrt{d})^2} = \sqrt{2d}$

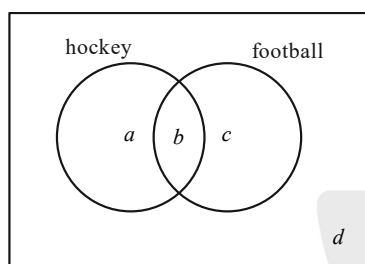Radius of a circle $= \dfrac{\sqrt{2d}}{2} = \sqrt{\dfrac{d}{2}}$

Area of a circle $= \pi r^2 = \pi \times \sqrt{\dfrac{d}{2}} \times \sqrt{\dfrac{d}{2}} = \dfrac{\pi d}{2}$

Hence, the correct option is (D).

66. (A)

From given conditions we can draw a diagram as follows :

and let total number of persons

$$= a + b + c = 28 \rightarrow (1)$$

So, number of persons who play hockey

$$= a + b = 15 \rightarrow (2)$$

& Number of persons who play football

$$= b + c = 17 \rightarrow (3)$$

& Number of persons who play hockey and football $= b = 10 \rightarrow (4)$

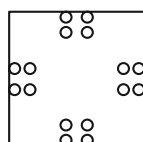From (2) $\Rightarrow a = 5$

From (3) $\Rightarrow c = 7$

From (1) $\Rightarrow d = 6$

Number of persons who play neither hockey nor football $= d = 6$
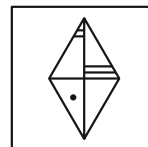
Hence, the correct option is (A).

67. (C)

The unfolded form of paper will be represented as,

Hence, the correct option is (C).

68. (B)

The correct mirror image of the figure given will be,

Hence, the correct option is (B).

69. (D)

Given : There are two rows.

In row-1 A, B, C, D and E are sitting facing north. In row-2 P, Q, R, S and T are sitting facing south. The person in row-1 exactly faces the person in row-2.

R does not sit opposite to C.

A sits second from extreme end.

Only one person sits between one who faces A and Q.

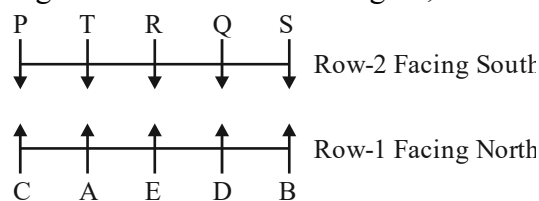B is not an immediate neighbor of A and does not sits apposite to Q.

E sits second to the left of B.

T does not faces E and never sits at extreme end.

S is not an immediate neighbor of T.

C does not sit opposite to Q.

From given condition we can draw a sitting arrangement as shown below figure,

The persons sitting corners are PSCB.

Hence, the correct option is (D).

70. (B)

Untroubled synonyms are calm, peaceful and serene.

Resentful, Desolate and Sad are same category.

Hence, the correct option is (B).

71. **6**

We can get the unit digit in the expression by looking at the pattern followed by 78, 56 and 97 when they are raised to high powers.

In fact, for the last digit we just need to consider the unit digit of each part of the product. A number (Like 78) having 8 as the digit will yield unit digits as :

$$78^1 \rightarrow 8$$
$$78^2 \rightarrow 4$$
$$78^3 \rightarrow 2$$
$$78^4 \rightarrow 6$$
$$78^5 \rightarrow 8$$
$$78^6 \rightarrow 4$$
$$78^7 \rightarrow 2$$
$$78^8 \rightarrow 6$$

Hence, from the above pattern we can say that

$$8^{4n+1} \rightarrow 8$$
$$8^{4n+2} \rightarrow 4$$

Hence, 78^{5562} will yield 4 as unit digit.
Similarly,

$$56^1 \rightarrow 6$$
$$56^2 \rightarrow 6$$
$$56^3 \rightarrow 6$$
$$56^4 \rightarrow 6$$

$\therefore$ 56^{256} will yield 6 as the unit digit.
Similarly,

$$97^1 \rightarrow 7$$
$$97^2 \rightarrow 9$$
$$97^3 \rightarrow 3$$
$$97^4 \rightarrow 1$$
$$7^{4n+1} \rightarrow 7$$

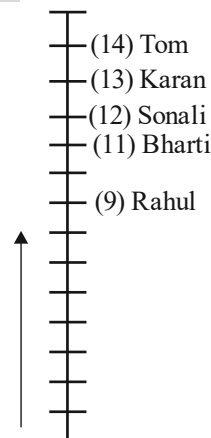$\therefore$ $7^{4n+2} \rightarrow 9$

Hence, 97^{1250} will yield unit digit of 9.

Hence, the required unit digit is given by
$$4 \times 6 \times 9 \rightarrow '6' \text{ Answers.}$$
Hence, the correct answers are 6.

72. **(C)**

- (14) Tom
- (13) Karan
- (12) Sonali
- (11) Bharti

- (9) Rahul

$$\text{Total people} = M + N - 1$$
$$15 = 12 + N - 1$$
$$N = 4$$

Hence, the correct option is (C).

73. **(C)**

From the question, each side = 6 cm
We know that,

Area of equilateral $\Delta = \dfrac{\sqrt{3}}{4}(\text{side})^2$

So, area of the equilateral triangle

$$= \dfrac{\sqrt{3}}{4} \times 6^2 = 9\sqrt{3} \ \text{cm}^2$$
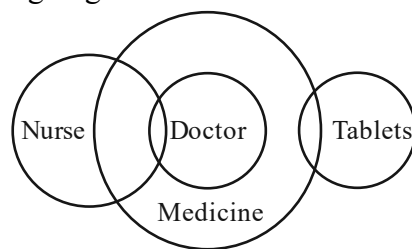
The area of shaded region
$$= 8 \times [\text{Area of equilateral triangles}]$$
$$= 8 \times 9\sqrt{3} = 72\sqrt{3} \ \text{cm}^2$$

Hence, the correct option is (C).

74. **(D)**

According to given information

Nurse   Doctor   Tablets

Medicine

From the above Venn-diagram, only conclusion (III) follows :

1. Atleast some tablets are doctor. Does not follow, as we can see in the diagram.
2. Some medicine are doctor is a possibility. Does not follows, as we can see in the diagram some medicine are doctor is a real case and we cannot make possibility of real case.
3. Some medicine are definitely nurse. Follows, as we can see in the diagram some part of medicine is intersected with nurse.

Hence, the correct option is (D).

75. **(A)**

Since $P(A \cup B \cup C) \geq 0.75$ therefore

$0.75 \leq P(A \cup B \cup C) \leq 1$

$0.75 \leq P(A) + P(B) + P(C)$

$\qquad - P(A \cap B) - P(B \cap C) - P(A \cap C)$

$\qquad\qquad + P(A \cap B \cap C) \leq 1$

$0.75 \leq 0.3 + 0.4 + 0.8 - 0.08 - P(B \cap C)$

$-0.28 + 0.09 \leq 1$

$0.75 \leq 1.23 - P(B \cap C) \leq 1$

$-0.48 \leq -P(B \cap C) \leq -0.23$

$-0.23 \leq P(B \cap C) \leq 0.48$

Hence, the correct option is (A).

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