



Subject : Quantitative
Aptitude, Reasoning,
Verbal

Standard : 13
Total Mark : 300

MCQ and Numerical

Paper Set : 1

Date : 26-07-2024

Time : 0H:20M

Quantitative Aptitude - Section A (MCQ)

- (1) A does half as much work as B in $\frac{3}{4}$ of the time. If together they take 18 days to complete a work, then how much time shall B take to complete it? (in days)
- (A) 30 (B) 35
(C) 40 (D) None of these
- (2) $\frac{250}{\sqrt{?}} = 10$
- (A) 25 (B) 250
(C) 625 (D) 2500
- (3) If a, b, c are in A.P., then $\frac{(a-c)^2}{(b^2-ac)} =$
- (A) 1 (B) 2
(C) 3 (D) 4
- (4) $2 \cos x - \cos 3x - \cos 5x =$
- (A) $16 \cos^3 x \sin^2 x$ (B) $16 \sin^3 x \cos^2 x$
(C) $4 \cos^3 x \sin^2 x$ (D) $4 \sin^3 x \cos^2 x$
- (5) In $\triangle ABC$ and $\triangle PQR$ $\angle B = \angle Q, \angle C = \angle R$. M is the mid-point of side QR . If $AB : PQ = 7 : 4$, then $\frac{\text{area}(\triangle ABC)}{\text{area}(\triangle PMR)}$ is
- (A) $\frac{1}{2}$ (B) 1
(C) $\frac{1}{3}$ (D) $\frac{1}{4}$
- (6) The maximum value of $(7 \cos \theta + 24 \sin \theta) \times (7 \sin \theta - 24 \cos \theta)$ for every $\theta \in R$.
- (A) 25 (B) 625
(C) $\frac{625}{2}$ (D) $\frac{625}{4}$
- (7) Two third of consignment was sold at a profit of 5% and the remainder at a loss of 2%. If the total profit was Rs. 400, the value of the consignment was in Rs.?
- (A) 12000 (B) 14000
(C) 15000 (D) Cannot be determined
- (8) If the first term of an A.P. be 10, last term is 50 and the sum of all the terms is 300, then the number of terms are
- (A) 5 (B) 8
(C) 10 (D) 15
- (9) The diameter of a sphere is 6 cm. It is melted and drawn into a wire of diameter 0.2 cm. Find out the length of the wire. (in m)
- (A) 24 (B) 28
(C) 36 (D) 32
- (10) The height of the right pyramid whose area of the base is $30 m^2$ and volume is $500 m^3$, is.....m
- (A) 50 (B) 60
(C) 40 (D) 20
- (11) There is a road beside a river. Two friends started from a place A, moved to a temple situated at another place B and then returned to A again. One of them moves on a cycle at a speed of 12 km/hr, while the other sails on a boat at a speed of 10 km/hr. If the river flows at the speed of 4 km/hr, which of the two friends will return to place A first?
- (A) cyclist (B) sailor
(C) both cyclist and sailor (D) data inadequate
- (12) A thief is stopped by a policeman from a distance of 400 meters. When the policeman starts the chase, the thief also starts running. Assuming the speed of the thief as 5 km/h and that of policeman as 9 km/h, how far the thief would have run, before he is over taken by the policeman? (in meter)
- (A) 400 (B) 600
(C) 500 (D) 300
- (13) In what time will a train 100 meter long cross an electric pole, if its speed be 144 km/hour? (in seconds)
- (A) 2.5 (B) 5
(C) 12.5 (D) 3
- (14) The compound interest on a certain sum for 2 years at 12% per annum, compounded annually is Rs.1272. The simple interest (In Rs.) for that sum at the same rate and for the same period will be?
- (A) 1296 (B) 1196
(C) 1220 (D) 1200
- (15) The simple interest on a sum for 8 years is ₹ 47500. The rate of 10% per annum and for the next 3 years is 15% p.a. What is the value (in ₹) of sum?
- (A) 50000 (B) 60000
(C) 45000 (D) 62500
- (16) 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 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? (in years)
- (A) 40 (B) 45
(C) 50 (D) 60
- (17) The ages of A and B are in the ratio 6 : 5 and sum of their ages is 44 years. The ratio of their ages after 8 years will be
- (A) 4 : 5 (B) 3 : 4
(C) 3 : 7 (D) 8 : 7
- (18) What mathematical operation should come at the place of ? in the equation $2?6 - 12 \div 4 + 2 = 11$
- (A) + (B) -
(C) × (D) ÷

- (19) The average age of Donald, his wife and their two children is 23 years. His wife is just 4 year younger than Donald himself and his wife was 24 years old when his daughter was born. He was 32 years old when his son was born. The average age of Donald and his daughter is ? (in year)
- (A) 25 (B) 22.5
(C) 26 (D) 23
- (20) In an examination, 30% of the total students failed in Hindi, 45% failed in English and 20% failed in both the subjects. Find the percentage of those who passed in both the subjects.
- (A) 35.7 (B) 35
(C) 40 (D) 45

Quantitative Aptitude - Section B (NUMERIC)

- (21) If the roots of the given equation $(2k + 1)x^2 - (7k + 3)x + k + 2 = 0$ are reciprocal to each other, then the value of k will be
- (22) In a class of 100 students, the mean marks obtained in a subject is 30 and in another class of 50 students the mean marks obtained in the same subject is 60. The mean marks obtained by the students of two classes taken together is
- (23) 3, 7, 15, ?, 63, 127
- (24) The average salary, per head, of all the workers of an institution is Rs. 60. The average salary of 12 officers is Rs. 400; the average salary, per head, of the rest is Rs. 56. The total number of workers in the institution is
- (25) A cube of edge 3 cm of iron weighs 12 gm. What is the weight of a similar cube of iron whose edge is 12 cm? (in gm)

Reasoning - Section A (MCQ)

- (26) If $A + B$ means A is the son of B ; $A - B$ means A is the husband of B ; $A \times B$ means A is the sister of B , then which of the following shows the relation Q is the maternal uncle of P ?
- (A) $P + B - R \times Q$ (B) $P - B + R \times Q$
(C) $P + B \times R - Q$ (D) $P \times B - R + Q$
- (27) choose the correct alternative for missing term.
 $AD, EH, IL, ?, QT$
- (A) LM (B) MN
(C) MP (D) OM
- (28) Choose the correct alternative for the given relation.
Implicate : Incriminate
- (A) Involvement : Malpractice (B) Exonerate : Acquit
(C) Embezzlement : Charge (D) Perjury : Fraud
- (29) Choose the correct alternative for the given relation.
Preamble : Constitution
- (A) Word : Dictionary (B) Contents : Magazine
(C) Explanation : Poetry (D) Preface : Book
- (30) Choose the odd one out from the given options.
- (A) Dogs (B) Cats
(C) Goats (D) Giraffes
- (31) Arrange the given words in proper sequence and choose the most appropriate sequence.
1. Key

2. Door
3. Lock
4. Room
5. Switch
- (A) 5, 1, 2, 4, 3 (B) 4, 2, 1, 5, 3
(C) 4, 2, 1, 5, 3 (D) 1, 3, 2, 4, 5
- (32) Choose the correct alternative for the given relation.
Identity : Anonymity
- (A) Flaw : Perfection (B) Careless : Mistake
(C) Truth : Lie (D) Fear : Joy
- (33) Choose the group of letters which is different from other groups.
- (A) $FCGDE$ (B) $TRQPS$
(C) $KJHMF$ (D) $KHGJI$
- (34) Choose the correct alternative for the given relation.
East : Orient
- (A) North : Polar (B) North : Tropic
(C) South : Capricorn (D) West : Occident
- (35) Find out the wrong term from given series.
121, 143, 165, 186, 209
- (A) 143 (B) 165
(C) 186 (D) 209
- (36) choose the correct alternative for missing term.
 $2A11, 4D13, 12G17, ?$
- (A) 36119 (B) 48J21
(C) 36J21 (D) 48J23
- (37) In a certain code *DESIGN* is written as *FCUGIL*, how is *REPORT* written in that code?
- (A) *TCRMPR* (B) *TCRMTR*
(C) *TCTMPR* (D) *TCTNTR*
- (38) To answer these questions study carefully the following arrangement of letters, digits and symbols.
6, =, #, C, E, 3, 8, G, L, M, 7, *, @, P, R, 4, \$, N, T, 5, S, V
If all the digits in the arrangement are removed, then which of the following will be the 8th to the right of the 15th element from the right end?
- (A) *M* (B) *P*
(C) *L* (D) *@*
- (39) Steel is to Bokaro as hosiery is to.....
- (A) Chennai (B) Patna
(C) Vishakhapatnam (D) Ludhiana
- (40) Find which one word cannot be made from the letters of the given word.
CREDENTIAL
- (A) *DENTAL* (B) *CREATE*
(C) *TRAIN* (D) *CREAM*
- (41) A group of letters is given which are numbered 1, 2, 3, 4, 5 and 6. Below are given four alternatives containing combinations of these numbers. Select that combination of numbers so that letters arranged accordingly form a meaningful word.
T L E M N A
- 1 2 3 4 5 6
- (A) 2, 6, 4, 5, 3, 1 (B) 3, 2, 4, 6, 5, 1
(C) 4, 3, 5, 1, 6, 2 (D) 5, 3, 2, 4, 6, 1

(42) (A) *P, Q, R, S* and *T* are sitting in a circle facing the centre.

(B) *R* is immediate left of *T*.

(C) *P* is between *S* and *T*.

Who is to the immediate left of *R*?

(A) *P*

(B) *Q*

(C) *S*

(D) *T*

(43) Choose the correct alternative for the given relation.

Magazine : Story : Article

(A) Tea : Milk : Sugar

(B) Television : Newspaper : Entertainment

(C) Bed : Quilt : Pillow

(D) Novel : Drama : Literature

(44) There are six persons *A, B, C, D, E* and *F* in a school. Each of the teachers teaches two subjects, one compulsory subject and the other optional subject. *D's* optional subject was History while three others have it as compulsory subject. *E* and *F* have Physics as one of their subjects. *F's* compulsory subject is Mathematics which is an optional subject of both *C* and *E*. History and English are *A's* subjects but in terms of compulsory and optional subjects, they are just reverse of those of *D's*. Chemistry is an optional subject of only one of them. The only female teacher in the school has English as her compulsory subject.

Which of the following has same compulsory and optional subjects as those of *P*?

(A) *D*

(B) *B*

(C) *A*

(D) None of these

(45) Hear is to deaf as speak is to.....

(A) quiet

(B) silent

(C) mumb

(D) dumb

Reasoning - Section B (NUMERIC)

(46) Fill in the black space for given series with correct alternative.

3, 15, 35, (...), 99, 143

(47) Arrange the given words in proper sequence and choose the most appropriate sequence.

1. Frog

2. Eagle

3. Grasshopper

4. Snake

5. Grass

(48) Fill in the black space for given series with correct alternative.

3, 10, 20, 33, 49, 68, (...)

(49) Arrange the given words in proper sequence and choose the most appropriate sequence.

1. Milky way

2. Sun

3. Moon

4. Earth

5. Stars

(50) Fill in the black space for given series with correct alternative.

1, 3, 4, 8, 15, 27, (...)

Verbal - Section A (MCQ)

(51) Read each sentence to find out whether there is any grammatical error in it and select correct answer for that.

(A) But for your

(B) kind help, this

(C) task could not have been completed.

(D) No error.

(52) Choose the word which best expresses the meaning of the given word.

SHALLOW

(A) Artificial

(B) Superficial

(C) Foolish

(D) Worthless

(53) Some idioms/phrase are given below together with their meanings. Choose the correct meaning of idiom/phrase. At loggerheads

(A) to be in extreme danger

(B) to be in love with someone

(C) to be in strong conflict or disagreement with someone

(D) to have a poor memory

(54) Read each sentence to find out whether there is any grammatical error in it and select correct answer for that.

(A) Work hard

(B) lest

(C) you should not

(D) lose the game.

(55) Choose the alternative which best expresses the meaning of Highlighted idiom/phrase.

He was in high spirits when I met him in the restaurant.

(A) He was in a drunken state

(B) He was very cheerful

(C) He talked incoherently

(D) He was deeply engrossed in thoughts

(56) From the given word find out which one is either inappropriate in the context of the sentence or wrongly spelt.

(A) He was *polite*

(B) but *ferm* in his

(C) *dealings* with the

(D) *foreigners*

(57) Improve the Highlighted part of the sentence given below.
his powerful desire brought about his downfall.

(A) His intense desire

(B) His desire for power

(C) His fatal desire

(D) No improvement

(58) In the following questions choose the word which is the exact OPPOSITE of the given words.

ABLE

(A) Disable

(B) Inable

(C) Unable

(D) Misable

(59) Find the correctly spelt word from given Words.

(A) Acceleration

(B) Accelleration

(C) Acelleration

(D) Accelaration

(60) In the following questions choose the word which is the exact OPPOSITE of the given words.

ENCOURAGE

- (A) Dampen (B) Disapprove
(C) Warn (D) Discourage

- (61) Pick up the one which is most nearly the same in meaning as the word highlighted.
The small boy was able to give a *graphic* description of the thief.
(A) picture (B) vivid
(C) drawing (D) broad
- (62) Which of phrases given below each sentence should replace the phrase printed in bold type to make the grammatically correct?
She felt humiliated when she realized that she *had cheated*.
(A) were cheated (B) is cheated
(C) had been cheated (D) have been cheated
- (63) Choose one of the following options that means the opposite of the given word
Luminous
(A) Bright (B) Soft
(C) Dim (D) Clear
- (64) Read each sentence to find out whether there is any grammatical error in it and select correct answer for that.
(A) The president (B) and the prime minister
(C) was (D) present in the function.
- (65) Select the correct article to fill the blank in the given sentence.
The potatoes are 25 rupees kilo.
(A) an (B) a
(C) the (D) none of the above
- (66) 1. studying hard 2.first attempt 3.to clear the exam 4.in the 5.Jack is
(A) 53142 (B) 51342
(C) 51423 (D) 34251
- (67) From the given word find out which one is either inappropriate in the context of the sentence or wrongly spelt.
(A) Social *security*
(B) and poverty *alleviation*
(C) programmes are not *implimented*
(D) with required *seriousness*
- (68) Read each sentence to find out whether there is any grammatical error in it and select correct answer for that.
(A) Since it was his first election campaign, the candidate was confused;
(B) none could clearly understand
(C) either the principles he stood for or the benefits he promised.
(D) No error.
- (69) Choose the alternative which best expresses the meaning of Highlighted idiom/phrase.
I met him after a long time, but he gave me *the cold shoulder*.
(A) scolded me (B) insulted me
(C) abused me (D) ignored me
- (70) Select the word or phrase which is closes to the OPPOSITE in meaning of the highlighted word or phrase

History *abounds* in instances of courage.

- (A) shines (B) suffices
(C) fails (D) lacks



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MCQ and Numerical (Answer Key)

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Quantitative Aptitude - Section A (MCQ)

1 - A	2 - C	3 - D	4 - A	5 - C	6 - C	7 - C	8 - C	9 - C	10 - A
11 - A	12 - C	13 - A	14 - D	15 - A	16 - D	17 - D	18 - C	19 - A	20 - D

Quantitative Aptitude - Section B (NUMERIC)

21 - 1	22 - 40	23 - 31	24 - 1032	25 - 768
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Reasoning - Section A (MCQ)

26 - A	27 - C	28 - B	29 - D	30 - D	31 - D	32 - A	33 - C	34 - D	35 - C
36 - D	37 - B	38 - B	39 - D	40 - D	41 - C	42 - B	43 - A	44 - D	45 - D

Reasoning - Section B (NUMERIC)

46 - 63	47 - 5, 3, 1, 4, 2	48 - 90	49 - 3, 4, 2, 5, 1	50 - 50
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Verbal - Section A (MCQ)

51 - D	52 - B	53 - C	54 - C	55 - B	56 - B	57 - B	58 - C	59 - A	60 - D
61 - B	62 - C	63 - C	64 - C	65 - B	66 - B	67 - C	68 - D	69 - D	70 - D



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MCQ and Numerical

(Solutions)

Paper Set : 1

Date : 26-07-2024

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Quantitative Aptitude - Section A (MCQ)

- (1) A does half as much work as B in $\frac{3}{4}$ of the time. If together they take 18 days to complete a work, then how much time shall B take to complete it? (in days)

(A) 30 (B) 35
(C) 40 (D) None of these

Solution:(Correct Answer:A)

Suppose, B takes x days to do the work
 \therefore A takes $(2 \times \frac{3}{4}x)$, i.e., $\frac{3x}{2}$ days to do it.
Now, $(A+B)$'s 1 day's work = $\frac{1}{18}$
 $\therefore \frac{1}{x} + \frac{2}{3x} = \frac{1}{18}$, or, $x = 30$

- (2) $\frac{250}{\sqrt{x}} = 10$

(A) 25 (B) 250
(C) 625 (D) 2500

Solution:(Correct Answer:C)

Let, $\frac{250}{\sqrt{x}} = 10$. Then, $\sqrt{x} = \frac{250}{10} = 25$
 $\therefore x = (25)^2 = 625$

- (3) If a, b, c are in A.P., then $\frac{(a-c)^2}{(b^2-ac)} =$

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

Solution:(Correct Answer:D)

(d) If a, b, c are in A.P. $\Rightarrow 2b = a + c$

So, $\frac{(a-c)^2}{(b^2-ac)} = \frac{(a-c)^2}{\left\{\left(\frac{a+c}{2}\right)^2-ac\right\}}$

$= \frac{(a-c)^2 \cdot 4}{[a^2+c^2+2ac-4ac]} = \frac{4(a-c)^2}{(a-c)^2} = 4$.

Trick : Put $a = 1, b = 2, c = 3$,

then the required value is $\frac{4}{1} = 4$.

- (4) $2 \cos x - \cos 3x - \cos 5x =$

(A) $16 \cos^3 x \sin^2 x$ (B) $16 \sin^3 x \cos^2 x$
(C) $4 \cos^3 x \sin^2 x$ (D) $4 \sin^3 x \cos^2 x$

Solution:(Correct Answer:A)

(a) $2 \cos x - \cos 3x - \cos 5x = 2 \cos x (1 - \cos 4x)$
 $= 2 \cos x \cdot 2 \sin^2 2x = 4 \cos x \sin^2 2x$
 $= 16 \sin^2 x \cos^3 x$.

- (5) In $\triangle ABC$ and $\triangle PQR$ $\angle B = \angle Q, \angle C = \angle R$. M is the mid-point of side QR . If $AB : PQ = 7 : 4$, then $\frac{\text{area}(\triangle ABC)}{\text{area}(\triangle PMR)}$ is

(A) $\frac{1}{2}$ (B) 1
(C) $\frac{1}{3}$ (D) $\frac{1}{4}$

Solution:(Correct Answer:C)

- (6) The maximum value of $(7 \cos \theta + 24 \sin \theta) \times (7 \sin \theta - 24 \cos \theta)$ for every $\theta \in R$.

(A) 25 (B) 625
(C) $\frac{625}{2}$ (D) $\frac{625}{4}$

Solution:(Correct Answer:C)

$y = (7 \cos \theta + 24 \sin \theta) \times (7 \sin \theta - 24 \cos \theta)$

$r \cos \phi = 7; r \sin \phi = 24$

$r^2 = 625; \tan \phi = \frac{24}{7}$

$y = r \cos(\theta - \phi) \cdot r \sin(\theta - \phi)$

$= \frac{r^2}{2} \cdot 2 \sin(\theta - \phi) \cos(\theta - \phi) = \frac{r^2}{2} \cdot (\sin 2(\theta - \phi))$

$Y_{\max} = \frac{25^2}{2} = \frac{625}{2}$

- (7) Two third of consignment was sold at a profit of 5% and the remainder at a loss of 2%. If the total profit was Rs. 400, the value of the consignment was in Rs.?

(A) 12000 (B) 14000
(C) 15000 (D) Cannot be determined

Solution:(Correct Answer:C)

Let the total value be Rs x

then value of $\frac{2}{3}rd = Rs. \frac{2x}{3}$

value of $\frac{1}{3}rd = Rs. \frac{x}{3}$

According to question

$\frac{2}{3}x \left(\frac{5}{100}\right) - \frac{1}{3}x \left(\frac{2}{100}\right) = 400$

$\frac{x}{30} - \frac{x}{150} = 400 \Rightarrow \frac{5x-x}{150} = 400$

$\Rightarrow x = Rs. 15000$

- (8) If the first term of an A.P. be 10, last term is 50 and the sum of all the terms is 300, then the number of terms are

(A) 5 (B) 8
(C) 10 (D) 15

Solution:(Correct Answer:C)

(c) Given that first term $a = 10$,

last term $l = 50$ and sum $S = 300$

$\therefore S = \frac{n}{2}(a + l)$

$\Rightarrow 300 = \frac{n}{2}(10 + 50)$

$\Rightarrow n = 10$.

- (9) The diameter of a sphere is 6 cm. It is melted and drawn into a wire of diameter 0.2 cm. Find out the length of the wire. (in m)

(A) 24 (B) 28
(C) 36 (D) 32

Solution:(Correct Answer:C)

Radius of the sphere = 3 cm

Volume of the sphere = $\frac{4}{3} \pi r^3$

$= \frac{4}{3} \times \pi \times 3 \times 3 \times 3$

$= 36\pi \text{ cm}^3 \dots(1)$

Radius of the wire = 0.1m

Volume of the wire with its length 1cm and radius 1.0m

$$= \pi^2 1 = \pi \times 0.1 \times 0.1 \times 1 \dots\dots(2)$$

$$\text{Now, } 36\pi = \pi \times 0.1 \times 0.1 \times 1$$

$$\Rightarrow 1 = \frac{36\pi}{\pi \times 0.1 \times 0.1} = 3600\text{cm} = 36\text{m}$$

- (10) The height of the right pyramid whose area of the base is 30m^2 and volume is 500m^3 , is.....m

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

Solution:(Correct Answer:A)

Volume of pyramid = $\frac{1}{3} \times \text{Area of base} \times \text{Height}$

$$\Rightarrow 500 = \frac{1}{3} \times 30 \times h$$

$$\Rightarrow 10h = 500$$

$$\Rightarrow h = \frac{500}{10} = 50\text{m}$$

- (11) There is a road beside a river. Two friends started from a place A , moved to a temple situated at another place B and then returned to A again. One of them moves on a cycle at a speed of 12km/hr , while the other sails on a boat at a speed of 10km/hr . If the river flows at the speed of 4km/hr , which of the two friends will return to place A first?

- (A) cyclist (B) sailor
(C) both cyclist and sailor (D) data inadequate

Solution:(Correct Answer:A)

$$\frac{x}{10+4} + \frac{x}{10-4} = \frac{x}{14} + \frac{x}{6}$$

$$= \frac{3x+7x}{42} = \frac{10x}{42}$$

$$= \frac{5x}{21} \text{ hour (Time taken by sailor)}$$

$$\frac{2x}{12} = \frac{x}{6} \text{ hours (Time taken by cyclist)}$$

$$\frac{5x}{21} > \frac{x}{6}, \text{ Cyclist will return first.}$$

- (12) A thief is stopped by a policeman from a distance of 400meters . When the policeman starts the chase, the thief also starts running. Assuming the speed of the thief as 5km/h and that of policeman as 9km/h , how far the thief would have run, before he is over taken by the policeman? (in meter)

- (A) 400 (B) 600
(C) 500 (D) 300

Solution:(Correct Answer:C)

Distance between policeman and thief = 400meters .

$$\text{Relative Speed} = 9 - 5 = 4\text{kmph} \times \frac{5}{18} = \frac{10}{9}\text{m/s}$$

$$\text{Time taken to over take} = \frac{400}{\frac{10}{9}} \Rightarrow 360\text{Secs.}$$

$$\text{Speed of thief in m/s} \Rightarrow 5 \times \frac{5}{18} = \frac{25}{18}\text{m/s}$$

$$\therefore \text{Distance travelled} = \frac{25}{18} \times 360 = 500\text{meter}$$

- (13) In what time will a train 100meter long cross an electric pole, if its speed be 144km/hour ? (in seconds)

- (A) 2.5 (B) 5
(C) 12.5 (D) 3

Solution:(Correct Answer:A)

Let Required time = t

$$144 \times \frac{5}{18} = \frac{100}{t} \Rightarrow t = 2.5\text{seconds}$$

- (14) The compound interest on a certain sum for 2 years at 12% per annum, compounded annually is $\text{Rs.}1272$. The simple interest (In Rs.) for that sum at the same rate and for the same period will be?

- (A) 1296 (B) 1196
(C) 1220 (D) 1200

Solution:(Correct Answer:D)

Here, $CI = \text{Rs.}1272$, $t = 2\text{years}$, $r = 12\%$

By the Formula

$$\Rightarrow CI = P \left[\left(1 + \frac{r}{100} \right)^t - 1 \right] \Rightarrow 1272 = P \left[\left(1 + \frac{12}{100} \right)^2 - 1 \right]$$

$$\Rightarrow 1272 = P \left[\left(\frac{112}{100} \right)^2 - 1 \right] \Rightarrow 1272 = P \times 0.2544$$

$$\Rightarrow P = \frac{\text{Rs.}5000}{\frac{5000 \times 12 \times 2}{100}} \Rightarrow \text{Now, } SI = \frac{P \times r \times t}{100}$$

$$\Rightarrow SI = \frac{5000 \times 12 \times 2}{100}$$

$$\therefore SI = \text{Rs.}1200$$

- (15) The simple interest on a sum for 8 years is ₹ 47500. The rate of 10% per annum and for the next 3 years is 15% p.a. What is the value (in ₹) of sum?

- (A) 50000 (B) 60000
(C) 45000 (D) 62500

Solution:(Correct Answer:A)

(a) Total interest = 47500

$$\frac{P \times 5 \times 10}{100} + \frac{P \times 3 \times 15}{100} = 47500$$

$$\frac{P}{2} + \frac{9P}{20} = 47500$$

$$19P = ₹950000$$

$$P = ₹50,000$$

- (16) 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 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? (in years)

- (A) 40 (B) 45
(C) 50 (D) 60

Solution:(Correct Answer:D)

Let the age of mother be $x\text{years}$.

$$\text{Age of son} = \frac{x}{2}$$

$$\text{Age of daughter} = \frac{x}{2} - 7$$

$$\therefore \text{Age of father} = 3 \left(\frac{x}{2} - 7 \right)$$

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

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

$$\text{or } \frac{x}{2} = 9 + 21 = 30$$

$$\text{or } x = 60\text{years}$$

- (17) The ages of A and B are in the ratio $6 : 5$ and sum of their ages is 44years . The ratio of their ages after 8 years will be

- (A) 4 : 5 (B) 3 : 4
(C) 3 : 7 (D) 8 : 7

Solution:(Correct Answer:D)

Let, present ages (in years) of A and B respectively, are $6x$ and $5x$.

$$\text{Given: } 6x + 5x = 44 \Rightarrow x = 4$$

Ratio of ages after 8 years will be

$$6x + 8 : 5x + 8 \text{ or } , 32 : 28 \text{ or } , 8 : 7$$

- (18) What mathematical operation should come at the place of ? in the equation

$$2?6 - 12 \div 4 + 2 = 11$$

- (A) + (B) -
(C) \times (D) \div

Solution:(Correct Answer:C)

Operator X in place of question mark satisfies the given equation according to order of precedence of operators. i.e.

$$2 \times 6 - 12 \div 4 + 2 = 2 \times 6 - 3 + 2 = 11$$

- (19) The average age of Donald, his wife and their two children is 23 years. His wife is just 4 year younger than Donald himself and his wife was 24 years old when his daughter was born. He was 32 years old when his son was born. The average age of Donald and his daughter is ? (in year)

(A) 25 (B) 22.5
(C) 26 (D) 23

Solution:(Correct Answer:A)

Let Donald be denoted by H (Husband)

His wife be denoted by W , His daughter be denoted by D ,

His son be denoted by S

The average age of 4 persons

$$= \frac{H+W+D+S}{4} = 23$$

$$H + W + D + S = 92 \Rightarrow H = W + 4$$

	H		W	D	S
At the time when daughter is born \rightarrow	28	$\xleftarrow{(+4)}$	24	0	X
	\downarrow				
At the time when Son is born \rightarrow	32	$\xleftarrow{(-4)}$	28	4	0

So at the time of birth of his Son, total age of his family = 64 years. ($32 + 28 + 4 + 0 = 64$) and presently the total age of his family = 92 years. It means total increase in age of the whole family = 28 years.

Thus average increase in age = $\frac{28}{4} = 7$ years.

It means the age of Donald = 39 years and age of his daughter = 11 years Therefore the average age of Donald and his Daughter is 25 years.

- (20) In an examination, 30% of the total students failed in Hindi, 45% failed in English and 20% failed in both the subjects. Find the percentage of those who passed in both the subjects.

(A) 35.7 (B) 35
(C) 40 (D) 45

Solution:(Correct Answer:D)

Let the number of students be 100. Number of students who failed in Hindi is 30%.

$$n(H) = 30$$

Number of students who failed in English is 45%

$$\therefore n(E) = 45$$

Number of students who failed in both the subjects is 20%.

$$n(H \cup E) = 20$$

Applying the rule,

$$n(H \cup E) = n(H) + n(E) - n(H \cap E)$$

$$= 30 + 45 - 20 = 55$$

Percentage of students who failed in Hindi or English or both the subjects = 55%

Number of students who passed in both the subjects = $100 - 55 = 45\%$

Quantitative Aptitude - Section B (NUMERIC)

- (21) If the roots of the given equation $(2k+1)x^2 - (7k+3)x + k+2 = 0$ are reciprocal to each other, then the value of k will be

Solution:

(b) Let roots be α and $\frac{1}{\alpha}$, then

$$\alpha \cdot \frac{1}{\alpha} = \frac{k+2}{2k+1} \Rightarrow 1 = \frac{k+2}{2k+1} \Rightarrow k = 1$$

- (22) In a class of 100 students, the mean marks obtained in a subject is 30 and in another class of 50 students the mean marks obtained in the same subject is 60. The mean marks obtained by the students of two classes taken together is

Solution:

total marks obtained by 150 students.

$$= 100 \times 30 + 50 \times 60 = 6000$$

$$\text{mean marks} = \frac{6000}{150} = 40$$

- (23) 3, 7, 15, ?, 63, 127

Solution:

$$3 \times 2 + 1 = 7, 7 \times 2 + 1 = 15, 15 \times 2 + 1 = 31$$

$$31 \times 2 + 1 = 63, 63 \times 2 + 1 = 127$$

Missing term = 31

- (24) The average salary, per head, of all the workers of an institution is Rs. 60. The average salary of 12 officers is Rs. 400; the average salary, per head, of the rest is Rs. 56. The total number of workers in the institution is

Solution:

Let the total number of members in the institute be Z .

$$\text{Average} = \frac{\text{sum}}{\text{number of elements}}$$

Average salary of institution = Rs. 60.

Total salary of institution = Rs. 60Z Out of Z persons, there are 12 officers and then average salary is = Rs. 400

and so total salary of 12 officers = $12 \times 400 = \text{Rs. } 4800$. So, total salary of other $(z - 12)$ members = $\text{Rs. } (16z - 4800)$ (1)

Given that average salary of $(z - 12)$ persons = Rs. 56 Here the total salary of $(z - 12)$ people = Rs. 56 $(z - 12)$ (2)

Equation (1) and (2) are equal $60 = -4800 = 60z - 672$

$$4z = 4128$$

$$z = 1032$$

- (25) A cube of edge 3 cm of iron weighs 12 gm. What is the weight of a similar cube of iron whose edge is 12 cm? (in gm)

Solution:

Ratio of the edge of cubes

$$= 3 : 12 = 1 : 4$$

$$\text{Ratio of their volumes} = 1^3 : 4^3 = 1 : 64$$

Because volume of the new cube is 64 times the volume of the first cube, the weight of the new cube is also 64 times the weight of the first cube.

Weight of the new cube

$$= 64 \times 12 \text{ gm} = 768 \text{ gm}$$

Reasoning - Section A (MCQ)

- (26) If $A + B$ means A is the son of B ; $A - B$ means A is the husband of B ; $A \times B$ means A is the sister of B , then which of the following shows the relation Q is the maternal uncle of P ?

(A) $P + B - R \times Q$ (B) $P - B + R \times Q$

(C) $P + B \times R - Q$ (D) $P \times B - R + Q$

Solution:(Correct Answer:A)

Q is the maternal uncle of P means P is the son the sister of Q Le. P is the son of the husband (say B) of the sister (say R) of Q . ($P + B - R \times Q$).

(27) choose the correct alternative for missing term.

AD, EH, IL, ?, QT

(A) *LM* (B) *MN*

(C) *MP* (D) *OM*

Solution:(Correct Answer:C)

The first and second letters of each term are moved four steps forward to obtain the corresponding letters of the next term.

(28) Choose the correct alternative for the given relation.

Implicate : Incriminate

(A) Involvement : Malpractice (B) Exonerate : Acquit

(C) Embezzlement : Charge (D) Peijury : Fraud

Solution:(Correct Answer:B)

The words in each pair are synonyms.

(29) Choose the correct alternative for the given relation.

Preamble : Constitution

(A) Word : Dictionary (B) Contents : Magazine

(C) Explanation : Poetry (D) Preface : Book

Solution:(Correct Answer:D)

Preamble is the introduction to the Constitution. Similarly, preface is the introduction to a book.

(30) Choose the odd on out from the given options.

(A) Dogs (B) Cats

(C) Goats (D) Giraffes

Solution:(Correct Answer:D)

All others are pet animals

(31) Arrange the given words in proper sequence and choose the most appropriate sequence.

1. Key

2. Door

3. Lock

4. Room

5. Switch

(A) 5, 1, 2, 4, 3 (B) 4, 2, 1, 5, 3

(C) 4, 2, 1, 5, 3 (D) 1, 3, 2, 4, 5

Solution:(Correct Answer:D)

null

(32) Choose the correct alternative for the given relation.

Identity : Anonymity

(A) Flaw : Perfection (B) Careless : Mistake

(C) Truth : Lie (D) Fear : Joy

Solution:(Correct Answer:A)

A lack of identity is anonymity. Similarly, a lack of flaw is perfection.

(33) Choose the group of letters which is different from other groups.

(A) *FCGDE* (B) *TRQPS*

(C) *KJHMF* (D) *KHGJI*

Solution:(Correct Answer:C)

All other groups consist of consecutive letters though not in order.

(34) Choose the correct alternative for the given relation.

East : Orient

(A) North : Polar (B) North : Tropic

(C) South : Capricorn (D) West : Occident

Solution:(Correct Answer:D)

Second is another name for the first.

(35) Find out the wrong term from given series.

121, 143, 165, 186, 209

(A) 143 (B) 165

(C) 186 (D) 209

Solution:(Correct Answer:C)

Each term of the series is increased by 22 to obtain the next term.

So, 186 is wrong and must be replaced by $(165 + 22)$ i.e. 187.

(36) choose the correct alternative for missing term.

2A11, 4D13, 12G17, ?

(A) 36119 (B) 48J21

(C) 36J21 (D) 48J23

Solution:(Correct Answer:D)

The first numbers in the terms follow the sequence $\times 2, \times 3, \times 4$. The middle letter of each term is moved three steps forward to obtain the corresponding letter of the next term. The last numbers follow the sequence $+2, +4, +6$

(37) In a certain code *DESIGN* is written as *FCUGIL*, how is *REPORT* written in that code?

(A) *TCRMPR* (B) *TCRMTR*

(C) *TCTMPR* (D) *TCTNTR*

Solution:(Correct Answer:B)

null

(38) To answer these questions study carefully the following arrangement of letters, digits and symbols.

6, =, #, C, E, 3, 8, G, L, M, 7, *, @, P, R, 4, \$, N, T, 5, S, V

If all the digits in the arrangement are removed, then which of the following will be the 8th to the right of the 15th element from the right end?

(A) *M* (B) *P*

(C) *L* (D) *@*

Solution:(Correct Answer:B)

New arrangement would be as follows:

=, #, C, F, G, L, M, *, @, P, R, \$, N, T, S, V

15th element from right is # and 8th element to the right of # is P.

(39) Steel is to Bokaro as hosiery is to.....

(A) Chennai (B) Patna

(C) Vishakhapatnam (D) Ludhiana

Solution:(Correct Answer:D)

Bokaro is famous for steel industry and Ludhiana is famous for hosiery works

- (40) Find which one word cannot be made from the letters of the given word.

CREDENTIAL

(A) DENTAL (B) CREATE

(C) TRAIN (D) CREAM

Solution:(Correct Answer:D)

null

- (41) A group of letters is given which are numbered 1, 2, 3, 4, 5 and 6. Below are given four alternatives containing combinations of these numbers. Select that combination of numbers so that letters arranged accordingly form a meaningful word.

T L E M N A

1 2 3 4 5 6

(A) 2, 6, 4, 5, 3, 1 (B) 3, 2, 4, 6, 5, 1

(C) 4, 3, 5, 1, 6, 2 (D) 5, 3, 2, 4, 6, 1

Solution:(Correct Answer:C)

MENTAL

- (42) (A) P, Q, R, S and T are sitting in a circle facing the centre.

(B) R is immediate left of T.

(C) P is between S and T.

Who is to the immediate left of R?

(A) P (B) Q

(C) S (D) T

Solution:(Correct Answer:B)

Clearly, in the circle the arrangement is as shown

Q is to the immediate left of R.

- (43) Choose the correct alternative for the given relation.
Magazine : Story : Article

(A) Tea : Milk : Sugar

(B) Television : Newspaper : Entertainment

(C) Bed : Quilt : Pillow

(D) Novel : Drama : Literature

Solution:(Correct Answer:A)

First contains both the .second and third.

- (44) There are six persons A, B, C, D, E and F in a school. Each of the teachers teaches two subjects, one compulsory subject and the other optional subject. D's optional subject was History while three others have it as compulsory subject. E and F have Physics as one of their subjects. F's compulsory subject is Mathematics which is an optional subject of both C and E. History and English are A's subjects but in terms of compulsory and optional subjects, they are just reverse of those of D's. Chemistry is an optional subject of only one of them. The only female teacher in the school has English as her compulsory subject. Which of the foliowintrvhas same compulsory and optional subjects as those of P's?

(A) D (B) B

(C) A (D) None of these

Solution:(Correct Answer:D)

The given information can be analysed as follows

Let 'O' denote optional and denote compulsory.

	A	B	C	D	E	F
History	C	C	C	O	—	—
Physics	—	—	—	—	C	O
Mathematics	—	—	O	—	O	C
English	O	—	—	C	—	—
Chemistry	—	O	—	—	—	—

One compulsory subject of F is Mathematics. F has Physics as one of the subjects.

So, Physics is optional of F. F has Mathematics as optional and Physigp as one subject.

So, Physics is the compulsory subject of E. A and D have the same subjects — History and English. D has History as optional subject and so English is the compulsory subject of, D. Subjects of A and D are reverse in regard of optional and compulsory.

So, A has History as compulsory subject and English as optional. Chemistry is the optional subject of only one teacher. So, it is the optional of B, which only remains.

We know that History is the compulsory subject of three teachers. So, it is compulsory for A, B and C.

D is the teacher having English as her compulsory subject.

So, D is the only female teacher.

E has same subjects as those of F but the compulsory and optional subjects of E are reverse of those of F. So, the answer is 'none of these'.

- (45) Hear is to deaf as speak is to.....

(A) quiet (B) silent

(C) numb (D) dumb

Solution:(Correct Answer:D)

One who cannot hear is deaf. Similarly, one who cannot speak is dumb.

Reasoning - Section B (NUMERIC)

- (46) Fill in the black space for given series with correct alternative.

3, 15, 35, (. .), 99, 143

Solution:

The terms of the series are

$2^2 - 1, 4^2 - 1, 6^2 - 1, \dots, 10^2 - 1, 12^2 - 1$

So, the missing number = $8^2 - 1 = 64 - 1 = 63$.

- (47) Arrange the given words in proper sequence and choose the most appropriate sequence.

1. Frog
2. Eagle
3. Grasshopper
4. Snake
5. Grass

Solution:

null

- (48) Fill in the black space for given series with correct alternative.

3, 10, 20, 33, 49, 68, (. .)

Solution:

The sequence is $+7 + 10, +13, +16, +19, \dots$

So, the missing number $= 68 + 22 = 90$.

- (49) Arrange the given words in proper sequence and choose the most appropriate sequence.

1. Milky way
2. Sun
3. Moon
4. Earth
5. Stars

Solution:

null

- (50) Fill in the black space for given series with correct alternative.

1, 3, 4, 8, 15, 27, (...)

Solution:

The sum of any three consecutive terms of the series gives the next term.

So, $1 + 3 + 4 = 8$; $3 + 4 + 8 = 15$; $4 + 8 + 15 = 27$ and so on.

\therefore The missing number $= 8 + 15 + 27 = 50$

Verbal - Section A (MCQ)

- (51) Read each sentence to find out whether there is any grammatical error in it and select correct answer for that.

- (A) But for your
(B) kind help, this
(C) task could not have been completed.
(D) No error.

Solution:(Correct Answer:D)

No answer description available for this question. Let us discuss.

- (52) Choose the word which best expresses the meaning of the given word.

SHALLOW

- (A) Artificial (B) Superficial
(C) Foolish (D) Worthless

Solution:(Correct Answer:B)

null

- (53) Some idioms/phrase are given below together with their meanings. Choose the correct meaning of idiom/phrase. At loggerheads

- (A) to be in extreme danger
(B) to be in love with someone
(C) to be in strong conflict or disagreement with someone
(D) to have a poor memory

Solution:(Correct Answer:C)

Rocky is at loggerheads with his brothers because of the property dispute.

- (54) Read each sentence to find out whether there is any grammatical error in it and select correct answer for that.

- (A) Work hard (B) lest
(C) you should not (D) lose the game.

Solution:(Correct Answer:C)

'Lest.....should' is used to give a warning and to suggest the consequences of not paying attention to that warning. This conjunction conveys a negative sense, so 'no' or 'not' should not be used in a sentence with this conjunction. So, remove 'not' from the third part of the sentence, e.g., work hard lest you should lose the game.

- (55) Choose the alternative which best expresses the meaning of Highlighted idiom/phrase.

He was in high spirits when I met him in the restaurant.

- (A) He was in a drunken state
(B) He was very cheerful
(C) He talked incoherently
(D) He was deeply engrossed in thoughts

Solution:(Correct Answer:B)

- (56) From the given word find out which one is either inappropriate in the context of the sentence or wrongly spelt.

- (A) He was *polite* (B) but *ferm* in his
(C) *dealings* with the (D) *foreigners*

Solution:(Correct Answer:B)

firm

- (57) Improve the Highlighted part of the sentence given below.
his power ful desire brought about his downfall.

- (A) His intense desire (B) His desire for power
(C) His fatal desire (D) No improvement

Solution:(Correct Answer:B)

- (58) In the following questions choose the word which is the exact OPPOSITE of the given words.

ABLE

- (A) Disable (B) Inable
(C) Unable (D) Misable

Solution:(Correct Answer:C)

null

- (59) Find the correctly spelt word from given Words.

- (A) Acceleration (B) Accelleration
(C) Acelleration (D) Accelaration

Solution:(Correct Answer:A)

Acceleration

- (60) In the following questions choose the word which is the exact OPPOSITE of the given words.

ENCOURAGE

- (A) Dampen (B) Disapprove
(C) Warn (D) Discourage

Solution:(Correct Answer:D)

null

- (61) Pick up the one which is most nearly the same in meaning as the word highlighted.

The small boy was able to give a *graphic* description of the thief.

- (A) picture (B) vivid
(C) drawing (D) broad

Solution:(Correct Answer:B)

null

- (62) Which of phrases given below each sentence should replace the phrase printed in bold type to make the grammatically correct?

She felt humiliated when she realized that she *had cheated*.

- (A) were cheated (B) is cheated
(C) had been cheated (D) have been cheated

Solution:(Correct Answer:C)

She felt humiliated when she realized that she had been cheated.

- (63) Choose one of the following options that means the opposite of the given word

Luminous

- (A) Bright (B) Soft
(C) Dim (D) Clear

Solution:(Correct Answer:C)

Luminous means glowing, shining, etc. So, its antonym is Dim as it means dark or dull.

- (64) Read each sentence to find out whether there is any grammatical error in it and select correct answer for that.

- (A) The president (B) and the prime minister
(C) was (D) present in the function.

Solution:(Correct Answer:C)

When an article is used with both the nouns in a sentence then the reference will be to two persons or objects, so the verb in the third part of this sentence must be plural, so replace 'was' with 'were'.

- (65) Select the correct article to fill the blank in the given sentence.

The potatoes are 25 rupees kilo.

- (A) an (B) a
(C) the (D) none of the above

Solution:(Correct Answer:B)

Indefinite article 'a' is used with numerical expression.

- (66) 1. studying hard 2.first attempt 3.to clear the exam 4.in the 5.Jack is

- (A) 53142 (B) 51342
(C) 51423 (D) 34251

Solution:(Correct Answer:B)

Jack is studying hard to clear the exam in the first attempt.

- (67) From the given word find out which one is either inappropriate in the context of the sentence or wrongly spelt.

- (A) Social *security*
(B) and poverty *alleviation*
(C) programmes are not *implimented*
(D) with required *seriousness*

Solution:(Correct Answer:C)

Implemented

- (68) Read each sentence to find out whether there is any grammatical error in it and select correct answer for that.

- (A) Since it was his first election campaign, the candidate was confused;
(B) none could clearly understand
(C) either the principles he stood for or the benefits he promised.

(D) No error.

Solution:(Correct Answer:D)

No answer description available for this question.

- (69) Choose the alternative which best expresses the meaning of Highlighted idiom/phrase.

I met him after a long time, but he gave me *the cold shoulder*.

- (A) scolded me (B) insulted me
(C) abused me (D) ignored me

Solution:(Correct Answer:D)

- (70) Select the word or phrase which is closes to the OPPOSITE in meaning of the highlighted word or phrase

History *abounds* in instances of courage.

- (A) shines (B) suffices
(C) fails (D) lacks

Solution:(Correct Answer:D)

null