FIITJEE INTERNAL TEST

MOCK TEST - 2

for

NTSE STAGE – I

(All Class X Batches)

Mental Ability Test (MAT)

QP CODE:

Time: 120 Minutes ***Maximum Marks: 100***

Please read the instructions carefully.

INSTRUCTIONS

A: General :

1. Immediately fill in the particulars on this page of the Test Booklet with Blue/Black Ball point pen.
2. Use ***Blue/Black Ball Point Pen only*** for writing particulars on ***Side-1*** and ***Side-2*** of the Answer Sheet. ***Use of pencil is strictly prohibited.***
3. Darken the appropriate bubbles with **HB Pencil** only.
4. Blank papers, clipboards, log tables, slide rules, calculators, cellular phones, pagers and electronic gadgets in any form are not allowed.
5. The answer sheet, a machine-gradable Objective Response Sheet (ORS) is provided separately.
6. Do not Tamper/mutilate the **ORS** or this booklet.
7. No additional sheets will be provided for rough work
8. On completion of this test, the candidate must hand over the Answer Sheet to the Invigilator on duty in the Room/Hall. ***However, the candidates are allowed to take away this Test Booklet with them.***

B: Questions paper format and **Marking Scheme :**

1. The question paper consists of 10*0 questions.*
2. For each question you will be **awarded 1 mark** if you darken the bubble corresponding to the correct answer and zero mark if no bubbles is darkened or your response is incorrect.

Enrollment No. : | | | | | | | | | | | | **Batch :** _____

Name : _____

Candidate's Signature _____ **Invigilator's Signature:** _____

1. If $x+y=12$ and $xy=32$, find the value of x^2+y^2.

(A) 64 (B) 80

(C) 84 (D) 96

Ans. B

Sol. We have, $(x+y)^2 = x^2+y^2+2xy$

$\Rightarrow \quad 12^2 = x^2+y^2+2\times 32$ (Putting $x+y=12$ and $xy=32$)

$\Rightarrow \quad 144 = x^2+y^2+64 \Rightarrow 144-64 = x^2+y^2 \Rightarrow x^2+y^2 = 80$

2. If $3a+\frac{1}{2a}=6$, find $4a^2+\frac{1}{9a^2}=?$

(A) 34 (B) 14

(C) $\frac{44}{3}$ (D) $\frac{46}{3}$

Ans. C

Sol. $\frac{2}{3}\left(3a+\frac{1}{2a}\right) = 6\times\frac{2}{3}$

$2a+\frac{1}{3a}=4$

$(2a)^2+\frac{1}{(3a)^2} = 16-2\times 2\times\frac{1}{3}$

$=16-\frac{4}{3}$

$=\frac{44}{3}$

3. Seats for Mathematics, Physics and Biology in a school are in the ratio 5 : 7 : 8. There is a proposal to increase these seats by 40%, 50% and 75% respectively. What will be the ratio of increased seats?

(A) 2:3:4 (B) 6:7:8

(C) 6:8:9 (D) None of these

Ans. A

Sol. Originally, let the number of seats for Mathematics, Physics and Biology be 5x, 7x and 8x respectively.

$\Rightarrow \left(\frac{140}{100}\times 5x\right), \left(\frac{150}{100}\times 7x\right)$ and $\left(\frac{175}{100}\times 8x\right)$

$\Rightarrow 7x, \frac{21x}{2}$ and $14x$

$\therefore$ The required ratio = $7x : \frac{21x}{2} : 14x$

$\Rightarrow 14x : 21x : 28x$

$\Rightarrow 2:3:4$

4. If $\frac{144}{0.144}=\frac{14.4}{x}$, then the value of x is:

(A) 0.0144 (B) 1.44

(C) 14.4 (D) 144

Ans. A

Sol. $\frac{144}{0.144}=\frac{14.4}{x} \Leftrightarrow \frac{144\times 1000}{144}=\frac{14.4}{x} \Leftrightarrow x=\frac{14.4}{1000}=0.0144$

5. It is being given that $\left(2^{32}+1\right)$ is completely divisible by a natural number. Then which of the following numbers is also completely divisible by that natural number?

(A) $\left(2^{16}+1\right)$ (B) $\left(2^{16}-1\right)$

(C) 7×2^{33} (D) $\left(2^{96}+1\right)$

Ans. D

Sol. Let $2^{32} = x$. Then, $(2^{32} + 1) = (x + 1)$

Let $(x + 1)$ be completely divisible by the natural number N. Then,

$\left(2^{96}+1\right)=\left[\left(2^{32}\right)^3+1\right]=\left(x^3+1\right)=(x+1)\left(x^2-x+1\right)$, which is completely divisible by N, since $(x + 1)$ is divisible by N.

6. A number when divided by 296 leaves 75 as remainder. When the same number is divided by 37, the remainder will be:

(A) 1 (B) 2

(C) 8 (D) 11

Ans. A

Sol. Let $x = 296\,q + 75 = (37 \times 8q + 37 \times 2) + 1$

$= 37 \times (8q + 2) + 1$

Thus, when the number is divided by 37, the remainder is 1

7. $8-8\times\dfrac{2\frac{1}{5}-1\frac{2}{7}}{2-\frac{1}{6-\frac{1}{6}}}$ is equal to:

(A) 2 (B) 4

(C) 6 (D) 8

Ans. B

Sol. Given exp. $= 8-8\times\dfrac{\frac{11}{5}-\frac{9}{7}}{2-\frac{1}{(35/6)}}=8-8\times\dfrac{\frac{32}{35}}{2-\frac{6}{35}}=8-8\times\dfrac{32}{35}\times\dfrac{35}{64}=8-4=4$

8. If $0.13\div p^2=13$, then p equals:

(A) 0.01 (B) 0.1

(C) 1.0 (D) 10

Ans. B

Sol. $\dfrac{0.13}{p^2}=13\Leftrightarrow p^2=\dfrac{0.13}{13}=\dfrac{1}{100}\Leftrightarrow p=\sqrt{\dfrac{1}{100}}=\dfrac{1}{10}=0.1$

9. If $\sqrt{.04\times.4\times a}=.004\times.4\times\sqrt{b}$, then $\dfrac{a}{b}$ is

(A) 16×10^{-3} (B) 16×10^{-4}

(C) 10×10^{-5} (D) None of these

Ans. C

Sol. $\dfrac{\sqrt{a}}{\sqrt{b}}=\dfrac{0.004\times0.4}{\sqrt{.04\times.4}}\Rightarrow\dfrac{a}{b}=\dfrac{.004\times.4\times.004\times.4}{.04\times.4}=\dfrac{.0000064}{.04}$

$\therefore\ \dfrac{a}{b}=\dfrac{.00064}{4}=.00016=\dfrac{16}{10^5}=16\times10^{-5}$

10. In a given fraction if 1 is subtracted from the numerator and 2 is added to the denominator, it becomes $\frac{1}{2}$. If 7 is subtracted from the numerator and 2 is subtracted from the denominator, it becomes $\frac{1}{3}$. The fraction is

(A) $\frac{13}{24}$ (B) $\frac{15}{26}$

(C) $\frac{16}{27}$ (D) $\frac{16}{21}$

Ans. B

Sol. Let the required fraction be $\frac{x}{y}$. Then,

$\frac{x-1}{y+2}=\frac{1}{2}$ and $\frac{x-7}{y-2}=\frac{1}{3}$

$\Rightarrow 2x-2=y+2$ and $3x-21=y-2$

$\Rightarrow 2x - y = 4$ …(i)

And $3x - y = 19$ …(ii)

On solving (i) and (ii), we get: x = 15 and y = 26

$\therefore$ the fraction is $\frac{15}{26}$

11. An equilateral triangle has its side of $3\sqrt{3}$ cm, then radius of its circum-circle is:

(A) 3 cm (B) 4 cm

(C) $2\sqrt{3}$ cm (D) 2 cm

Ans. A

Sol. $R=\frac{2}{3}\times$ altitude

$=\frac{2}{3}\times\frac{\sqrt{3}}{2}\times 3\sqrt{3}$

= 3 cm

12. The sum of three numbers is 98. If the ratio of the first to second is 2 :3 and that of the second to the third is 5 : 8, then the second number is:

(A) 20 (B) 30

(C) 48 (D) 58

Ans. B

Sol. Let the three parts be A, B, C. Then,

A : B = 2 : 3 and B : C = 5 : 8 = $\left(5\times\frac{3}{5}\right):\left(8\times\frac{3}{5}\right)=3:\frac{24}{5}$

$\Rightarrow$ A : B :C = 2 : 3 : $\frac{24}{5}=10:15:24$

$\Rightarrow$ B = $\left(98\times\frac{15}{49}\right)=30$.

13. A square is inscribed in a circle of radius ‘a’. Another circle is inscribed in that square and again a square is inscribed in this circle. The side of this inner square is:-

(A) 2a (B) $\frac{a}{2}$

(C) $\frac{a}{\sqrt{2}}$ (D) a

Ans. D

Sol. Diagonal of outer square = 2a

$\Rightarrow$ Side of outer square $= \sqrt{2}a$

Diameter of inner circle $= \sqrt{2}a =$ Diagonal of inner square

$\Rightarrow$ Side of inner square = a

14. If the height of right circular cylinder is increased by 10% while radius of base is decreased by 10% then curved surface area of cylinder

(A) Remains same (B) Decreases by 1%

(C) Increases by 1% (D) Increases by 0.1%

Ans. B

Sol. Let height = h radius = r

CSA = $2\pi rh$

Increased height $= \frac{11h}{10}$

Decreased radius $= \frac{9}{10}r$

New CSA $= 2\pi rh \times \frac{99}{100}$

Decrease in CSA $= \frac{2\pi rh}{100}$

Decrease % $= \frac{\frac{2\pi rh}{100}}{2\pi rh} \times 100 = 1\%$

15. If sum of LCM and HCF of two number is 50 and their LCM is 20 more than their HCF, then the product of two numbers will be

(A) 525 (B) 425

(C) 625 (D) 325

Ans. A

Sol. LCM + HCF = 50

LCM – HCF = 20

$\therefore$ LCM = 35 & HCF = 15

$\therefore$ product of number = LCM x HCF

= 35 x 15

= 525

16. Two numbers are in the ratio 3 : 5. If 9 is subtracted from each, the new numbers are in the ratio 12: 23. The smaller number is:

(A) 27 (B) 33

(C) 49 (D) 55

Ans. B

Sol. Let the numbers be 3x and 5x

Then, $\frac{3x-9}{5x-9} = \frac{12}{23}$

$\Rightarrow 23(3x-9) = 12(5x-9)$

$\Rightarrow$ 9x = 99

$\Rightarrow$ x = 11

$\therefore$ The smaller number = (3 x 11) = 33

17. If the mean of a data is 27 and its median is 33. Then, the mode is

(A) 30 (B) 43

(C) 45 (D) 47

Ans. C

Sol. Mode = 3Median - 2Mean

$\therefore$ Mode is 45.

18. Oranges are bought at the rate of 10 for Rs 25 and sold at the rate of 9 for Rs 25. The profit is

(A) $9\frac{1}{11}\%$ (B) 10%

(C) $11\frac{1}{9}\%$ (D) $12\frac{1}{2}\%$

Ans. C

Sol. Suppose the number of oranges bought = LCM of 10 and 9 = 90

C.P. of 90 oranges = $\frac{25}{10}\times 90 = \text{Rs. } 225$

S.P. of 90 oranges = $\frac{25}{9}\times 90 = \text{Rs. } 250$

Profit % = $\frac{25}{225}\times 100$

= $\frac{100}{9} = 11\frac{1}{9}\%$

19. The two parts into which 57 should be divided so that their product is 782, are

(A) 43 and 14 (B) 33 and 24

(C) 34 and 23 (D) 44 and 13

Ans. C

Sol. Let the required numbers be x and (57 - x). Then,

$x(57-x) = 782 \Rightarrow 57x - x^2 = 782$

$\Rightarrow x^2 - 57x + 782 = 0$

$\Rightarrow x^2 - 34x - 23x + 782 = 0$

$\Rightarrow x(x-34) - 23(x-34) = 0$

$\Rightarrow (x-34)(x-23) = 0$

$\Rightarrow$ x = 34 or x = 23

$\therefore$ The numbers are 34 and 23

20. What is the remainder when 2^{300} is divided by 7?

(A) 4 (B) 3

(C) 2 (D) 1

Ans. D

Sol. $\frac{2^{300}}{7} = \frac{2^{300}}{2^3 - 1} = \frac{x^{100}}{x-1}$

Now, x^{100} when divided by x – 1 then the remainder is 1.

21. The roots of the equation $2x - \frac{3}{x} = 1$ are

(A) $\frac{1}{2}, -1$ (B) $\frac{3}{2}, 1$

(C) $\frac{3}{2}, -1$ (D) $\frac{-1}{2}, \frac{3}{2}$

Ans. C

Sol. Given equation is $2x^2 - x - 3 = 0$

$\Rightarrow 2x^2 - 3x + 2x - 3 = 0 \Rightarrow x(2x-3) + (2x-3) = 0$

$\Rightarrow (2x-3)(x+1) = 0 \Rightarrow x = \frac{3}{2}$ or -1

22. The volume of a cube is numerically equal to sum of the length of its edges. The total surface area of cube in square units is

(A) 12 (B) 36

(C) 72 (D) 144

Ans. C

Sol. $a^3 = 12a$

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

$\therefore$ TSA = $6a^2 = 6 \times 12 = 72$

23. A can finish a work in 18 days and B can do the same work in half the time taken by A. Then working together what part of the same work they can finish in a day?

(A) $\frac{1}{6}$ (B) $\frac{2}{5}$

(C) $\frac{1}{9}$ (D) $\frac{2}{7}$

Ans. A

Sol. A's 1 day's work = 1/18

B's 1 day's work = 1/9

$\therefore$ (A + B)'s 1 day's work

= $\frac{1}{18} + \frac{1}{9} = \frac{1+2}{18} = \frac{3}{18} = \frac{1}{6}$

24. A number when divided by 36 leaves a remainder of 23. What is the remainder when the same number is divided by 18?

(A) 13 (B) 5

(C) 9 (D) cannot say

Ans. B

Sol. Given number = 36x + 23

So, $(36x + 23)$ when divided by 18, remainder will be 5

25. If the digits of the number 26839514 are arranged in descending order, the position of how many digits will remain unchanged?

(A) 1 (B) 2

(C) 3 (D) None of these

Ans. D

Sol. Given series – 26839514

Descending series – 98654321

Position of all the digits is changed

So, the answer is (D).

26. In what ratio should a grocer mix tea at Rs 3.10 P per 100 grams with tea at Rs 4.35 P per 100 grams to make a mixture worth Rs 3.25 P per 100 grams?

(A) 2:3 (B) 22:3

(C) 33:7 (D) 15: 22

Ans. B

Sol. $\frac{\text{cheaper quantity}}{\text{dearer quantity}} = \frac{4.35 - 3.25}{3.25 - 3.10}$

= $\frac{1.10}{0.15} = \frac{22}{3}$

$\Rightarrow$ 22:3

27. Select the odd word / number from the given responses.
(A) 94 – 7 (B) 42 – 6
(C) 35 – 5 (D) 56 – 8

Ans. A

Sol. Except in the number pair 94 – 7, in all others we get the second number by dividing the first number by 7.

28. Rajan is sixth from the left end and Vinay is tenth from the right end in a row of boys. If there are eight boys between Rajan and Vinay, how many boys are there in the row?
(A) 24 (B) 26
(C) 23 (D) 25

Ans. A

Sol. Number of boys in the row = (6 + 10 + 8) = 24

Directions (Question 29): These questions are based on the following information.
There is a cube in which one pair of opposite faces is painted red, the second pair of opposite faces is painted blue and the third pair of opposite faces is painted green. Then cube is now cut into 216 smaller but identical cubes.

29. How many small cubes are there with at least two different colours on their faces?
(A) 49 (B) 64
(C) 56 (D) 81

Ans. C

Sol. Cubes having at least two different colours are all those along the edges which is 4 x 6 + 8 x 4 = 56 (where 4 vertical edges each have 6 cubes and the other 8 edges have 4 cubes each).

30. Let $f = 0.841\overline{81}$. When F is written as a fraction in lowest terms, the denominator exceeds the numerator by how much?
(A) 13 (B) 14
(C) 29 (D) 87

Ans. D

Sol. $f = 0.841\overline{81} = \frac{463}{550}$

Hence, required answer = 87

Directions (Questions 31 – 35): Find the missing number in the series given below.

31. Find the missing number in the series given below.

3, 4, 7, 11, 18, 29, ?
(A) 31 (B) 39
(C) 43 (D) 47

Ans. D

Sol. Every third element is the sum of its previous two elements.
3 + 4 = 7
4 + 7 = 11
7 + 11 = 18
11 + 18 = 29
18 + 29 = 47
$\therefore$? = 47

32. Find the missing number in the series given below.

2, 8, 4, 64, 7, 343, 11, 1331, 16, ___

(A) 4286 (B) 3916

(C) 4096 (D) 4196

Ans. C

Sol. 2, 2^3, 4, 4^3, 7, 7^3, 11, 11^3, 16, $\underline{16^3}$

33. Find the missing number in the series given below.

90, 61, 52, 63, 94, ?, 18

(A) 72 (B) 46

(C) 54 (D) 81

Ans. B

Sol. When the digits of the numbers are reversed these are the perfect squares 09, 16, 25, 36, 49, 64, 81 consecutive.

$\therefore$? = Reversed of 64 = 46

34. Find the missing number in the series given below.

48, 24, 72, 36, 108, ?

(A) 115 (B) 216

(C) 121 (D) 54

Ans. D

Sol. Here, the pattern is as follows

Divide by 2, multiple by 3 and the same process is repeated.

$48 \div 2 = 24$; $24 \times 3 = 72$

$72 \div 2 = 36$; $36 \times 3 = 108$

$108 \div 2 = 54$

$\therefore$? = 54

35. Find the missing number in the series given below.

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

ZYX _ W_ YZZ _ XWWXY _

(A) WXYZ (B) WYXZ

(C) WXZY (D) XYZW

Ans. A

Sol. WXYZ

36. In an examination, a student scores 4 marks for every correct answer and loses 1 mark for every wrong answer. If he attempts all 75 questions and secures 125 marks, the number of questions he attempted correctly, is

(A) 35 (B) 40 (C) 42 (D) 46

Ans. B

Sol. Let, he attempts x question wrong.

So, $(75-x)4-x(1)=125$

$300 - 5x = 125$

$x = 35$

Required answer = 75 – 35 = 40

37. When the clock shows 20 minutes past 11 O'clock, what is the angle between the two hands of the clock?

(A) 110^o (B) 120^o

(C) 130^o (D) 140^o

Ans. D

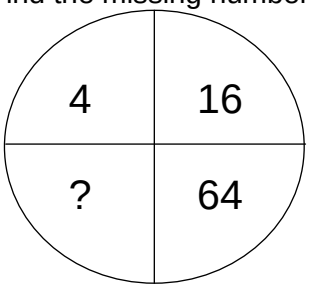
Sol. Angle between the two hands is given by

$\theta = \left|\frac{11}{2}m - 30h\right|$, here m = 20 and h = 11

$\Rightarrow \theta = \left|\frac{11}{2} \times 20 - 30 \times 11\right| = 220$

As angle is more than 180^o, the angle must be
$360^o - 220^o = 140^o$

38. Find the missing number.



(A) 16 (B) 52
(C) 112 (D) 256

Ans. D

Sol. 4 x 4 = 16
16 x 4 = 64
64 x 4 = 256

39. $7^{101} + 18^{101}$ is a multiple of?

(A) 15 (B) 25
(C) 35 (D) 45

Ans. B

Sol. $a^n + b^n$ is always divisible by (a + b) if n is odd
Hence, option B

40. Let x be a real number such that $\sec x - \tan x = 2$. Then $\sec x + \tan x =$

(A) 0.1 (B) 0.2
(C) 0.3 (D) 0.5

Ans. D

Sol. From the identity $1 + \tan^2 x = \sec^2 x$ it follows that
$1 = \sec^2 x - \tan^2 x = (\sec x - \tan x)(\sec x + \tan x) = 2(\sec x + \tan x)$, so $\sec x + \tan x = 0.5$

41. 5 years hence, the age of a man shall be 3 times the age of his son while 5 years earlier the age of the man was 7 times the age of his son. The present age of the man is:

(A) 45 years (B) 50 years
(C) 47 years (D) 40 years

Ans. D

Sol. Let the man's present age be x years and the son's age be y years.

$(x + 5) = 3(y + 5) \Rightarrow x - 3y = 10$ …(i)

$(x - 5) = 7(y - 5) \Rightarrow x - 7y = -30$ …(ii)

$\therefore$ 4y = 40 $\Rightarrow$ y = 10
Putting y = 10 in (i), we get: x = 40
$\therefore$ man's age = 40 years

42. Two pipes can fill an empty tank in 40 minutes and 60 minutes respectively. There is an outlet pipe C. If all the 3 pipes are opened simultaneously, the empty tank can be filled in 48 minutes. How much time will it take for C alone to empty the full tank?

(A) 72 minutes (B) 52 minutes

(C) 48 minutes (D) 60 minutes

Ans. C

Sol. Part of the tank emptied by C in one minute

$= \frac{1}{40} + \frac{1}{60} - \frac{1}{48} = \frac{1}{48}$

$\therefore$ C can empty the full tank in 48 minutes.

43. A person lent a certain sum of money at 4% simple interest and in 8 years the interest amounted to Rs 340 less than the sum lent. Find the sum lent.

(A) Rs 300 (B) Rs 250

(C) Rs 400 (D) Rs 500

Ans. D

Sol. Let the sum be Rs x.

$\therefore$ Interest = $\frac{x \times 8 \times 4}{100} = \frac{32x}{100}$

$x - \frac{32x}{100} = \frac{68x}{100}$

When interest is $\frac{68x}{100}$ less, the sum is Rs x

$\therefore$ When interest is Rs 340 less, the sum is $\frac{x}{68x} \times 100 \times 340 = \text{Rs } 500$

44. The difference of the roots of $x^2 - 7x - 9 = 0$ is:

(A) +7 (B) $+\frac{7}{2}$

(C) +9 (D) $\sqrt{85}$

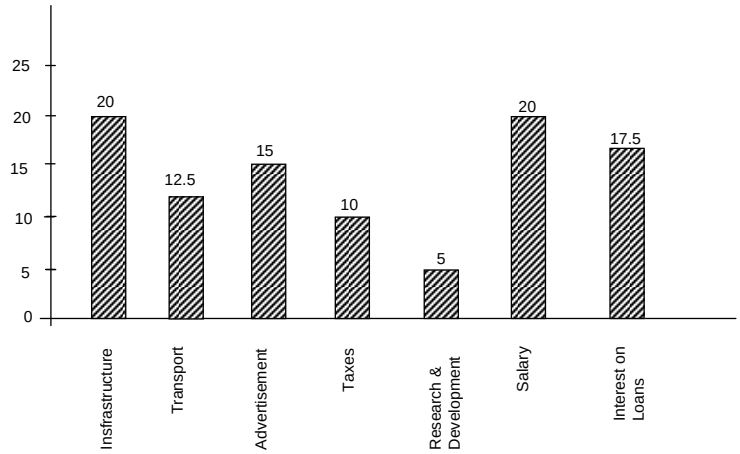
Ans. D

Sol. The roots are $\frac{\left(7 \pm \sqrt{49+36}\right)}{2}$ and their difference is $\frac{7+\sqrt{85}}{2} - \frac{7-\sqrt{85}}{2} = \sqrt{85}$

Of the given choices (D) is correct.

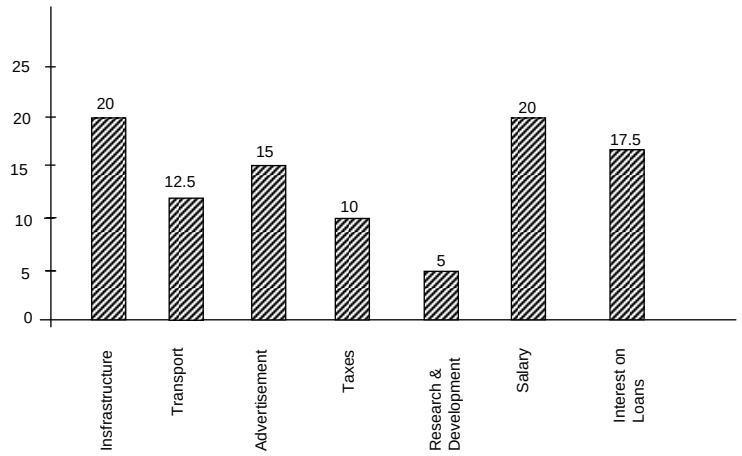
Directions (Question 45 – 49): The bar graph given below shows the percentage distribution of total expenditures of a Company under various expense heads during 2003. Study the graph and answer the questions that follow:

Percentage Distribution of Total Expenditure of a Company



45. The bar graph given below shows the percentage distribution of total expenditures of a Company under various expense heads during 2003. Study the graph and answer the questions that follow:

Percentage Distribution of Total Expenditure of a Company



The expenditure on the interest on loans is by what percent more than the expenditures on transport?

(A) 5% (B) 10%

(C) 20% (D) 40%

Ans. D

Sol. Let the total amount of expenditures be Rs x.

Then, the expenditure on interest on laons = Rs. (17.5% of x) = Rs. $\left(\frac{17.5}{100}x\right)$

and the expenditure on transport = Rs. (12.5% of x) = Rs. $\left(\frac{12.5}{100}x\right)$

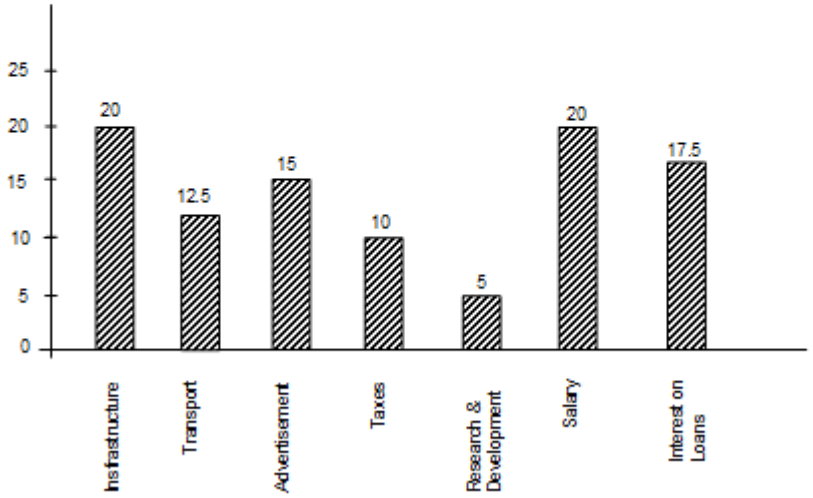
$\therefore$ Difference between the two expenditures = Rs. $\left(\frac{17.5}{100}x-\frac{12.5}{100}x\right)=\text{Rs.}\left(\frac{5x}{100}\right)$

And so, the required percentage = $\left[\frac{\left(\frac{5x}{100}\right)}{\left(\frac{12.5x}{100}\right)}\times 100\right]\% = 40\%$

46.

The bar graph given below shows the percentage distribution of total expenditures of a Company under various expense heads during 2003. Study the graph and answer the questions that follow:

Percentage Distribution of Total Expenditure of a Company



What is the ratio of the total expenditure on infrastructure and transport to the total expenditure on taxes and interest on loans?

(A) 5:4 (B) 8:7

(C) 9:7 (D) 13:11

Ans. D

Sol. Let the total amount of expenditure be Rs x.

Then, the total expenditure on infrastructure and transport

= Rs. [(20 + 12.5)% of x] = Rs. (32.5% of x) = Rs. $\left(\frac{32.5x}{100}\right)$

And total expenditure on taxes and interest on loans

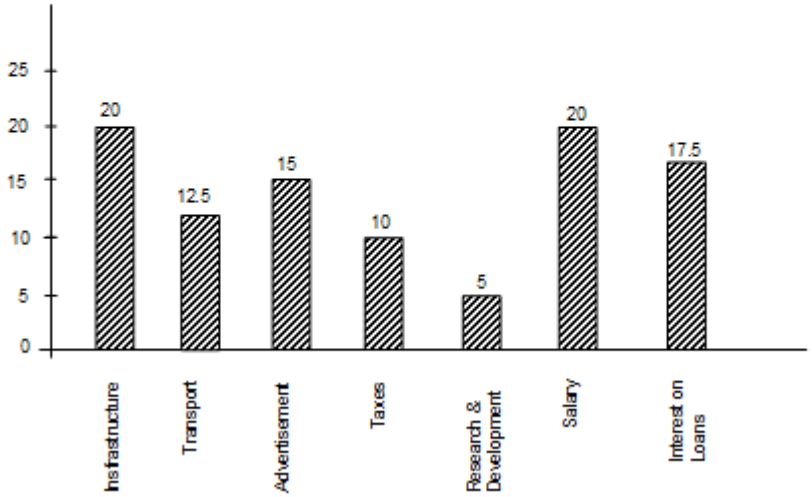
= Rs. [(10 + 17.5)% of x] = Rs. (27.5% of x) = Rs. $\left(\frac{27.5x}{100}\right)$

$\therefore$ Required ratio = $\frac{\left(\frac{32.5x}{100}\right)}{\left(\frac{27.5x}{100}\right)} = 13:11$

47.

The bar graph given below shows the percentage distribution of total expenditures of a Company under various expense heads during 2003. Study the graph and answer the questions that follow:

Percentage Distribution of Total Expenditure of a Company



If the expenditure on advertisement is Rs 2.10 crores then the difference between the expenditures on transport and taxes is:

(A) Rs 1.25 lakh (B) Rs 95 lakhs

(C) Rs 65 lakh (D) Rs. 35 lakhs

Ans. D

Sol. Let the total expenditure be Rs x crores.

Then, 15% of x = 2.10 $\Rightarrow$ x = $\left(\frac{2.10\times100}{15}\right)=14$

$\therefore$ Total expenditure = Rs 14 crores

And so, the difference between the expenditure on transport and taxes

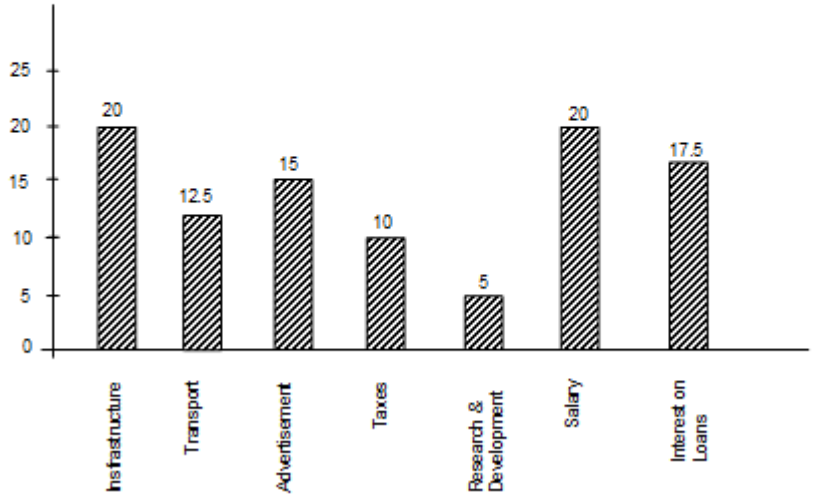
= Rs. [(12.5 – 10)% of 14] crores = Rs (2.5% of 14) crores

= Rs. 0.35 crores = Rs. 35 lakhs

48.

The bar graph given below shows the percentage distribution of total expenditures of a Company under various expense heads during 2003. Study the graph and answer the questions that follow:

Percentage Distribution of Total Expenditure of a Company



The total amount of expenditures of the Company is how many times the expenditure on research and development?

(A) 27 (B) 20

(C) 18 (D) 8

Ans. B

Sol. Let the total expenditure be Rs x.

Then, the expenditure on Research and Development = Rs. (5% of x) = Rs. $\frac{x}{20}$

$\therefore$ Ratio of the total expenditure to the expenditure on Research and Development

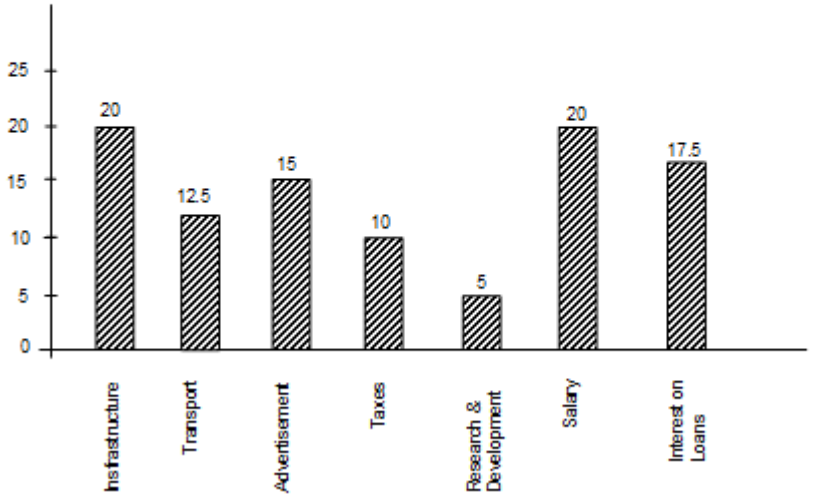
$= \frac{x}{\left(\frac{x}{20}\right)} = \frac{20}{1}$

Thus, the total expenditure is 20 times of expenditure on Research and Development.

49.

The bar graph given below shows the percentage distribution of total expenditures of a Company under various expense heads during 2003. Study the graph and answer the questions that follow:

Percentage Distribution of Total Expenditure of a Company



If the interest on loans amounted to Rs 2.45 crores then the total amount of expenditure on advertisement, taxes and research and development is:

(A) Rs 7 crores (B) Rs. 5.4 crores
(C) Rs 4.2 crores (D) Rs 3 crores

Ans. C

Sol. Let the total expenditure be Rs x crores. Then, 17.5% of x = 2.45 $\Rightarrow$ x = 14.
$\therefore$ Total expenditure = Rs 14 crores
And so, the total expenditure on advertisement, taxes and research and development
= Rs. [(15 + 10 + 5)% of 14] crores
= Rs. (30% of 14) crores = Rs 4.2 crores

50. The value of $\log_5\left[\frac{(125)(625)}{25}\right]$ is equal to:

(A) 7 (B) 6
(C) 3125 (D) 5

Ans. D

Sol. $\log_5\left(\frac{5^3.5^4}{5^2}\right) = \log_5 5^5 = 5\log_5 5 = 5$

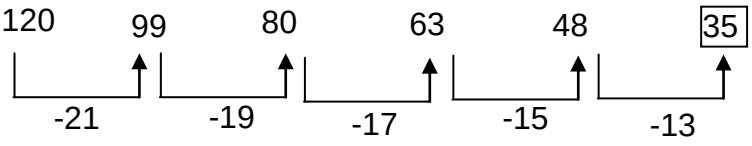
51. Find the next term

120, 99, 80, 63, 48, ?

(A) 35 (B) 38
(C) 39 (D) 40

Ans. A

Sol.



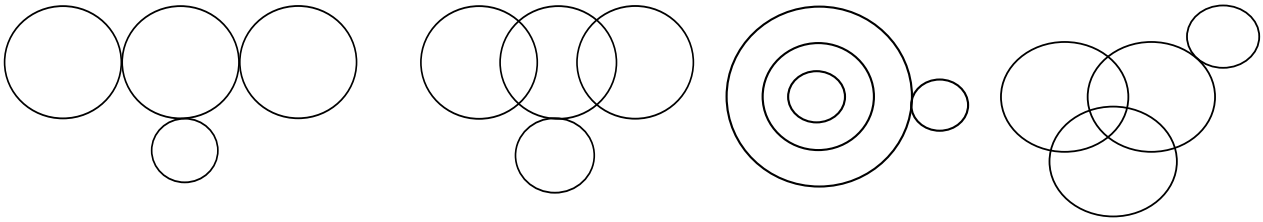
52. In a row of 40 girls, when Komal was shifted to her left by 4 places, her place from the left end of the row became 10. What is the position of Swati from the right end of the row, if Swati was three places to the right of Komal's original position?

(A) 22 (B) 23
(C) 25 (D) 24

Ans. D

Sol. On shifting 4 places to the left, Komal is 10^{th} from the left end of the row. Thus, Komal's original position was 14^{th} from the left end.
Swati is 3 places to the right of Komal's original position. Clearly, Swati is 17^{th} from the left end.
Now, Swati's position from right = (Total number of girls – Swati's position from left) + 1
= 40 – 17 + 1 = 23 + 1 = 24
So, Swati is 24^{th} from the right end of the row.

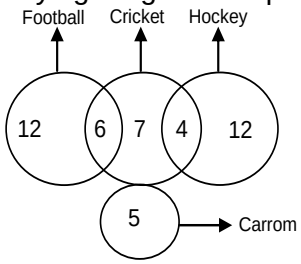
53. In a class of 46 students, 18 played football, 17 played cricket including 6 who played football. 16 students played hockey including 4 who played cricket but not football. Five students played carom but no out door games. Which of the following diagrams represents these facts?



(A) (B) (C) (D)

Ans. B

Sol. Only figure given in option B represents the given facts.



Directions (Questions 54 – 55):

Study the following digit-letter-symbol sequence carefully and answer the questions given below:

R ✯ T J L 2 $ D = M # 8 C % B < K 1 & A W ? P E + Q @ 7 F 6

54.

Study the following digit-letter-symbol sequence carefully and answer the questions given below:

R ✯ T J L 2 $ D = M # 8 C % B < K 1 & A W ? P E + Q @ 7 F 6

How many such numbers are there in the above sequence, each of which is immediately preceded by a consonant and immediately followed by a symbol?

(A) Nil (B) One
(C) Three (D) None of these

54. D

Sol. R ✯ T J L 2 $ D = M # 8 C % B < K 1 & A W ? P E + Q @ 7 F 6

55.

Study the following digit-letter-symbol sequence carefully and answer the questions given below:

R ★ T J L 2 $ D = M # 8 C % B < K 1 & A W ? P E + Q @ 7 F 6

Which of the following is sixth to the left of eighteenth element from the left?

(A) % (B) C

(C) 1 (D) 8

55. D

Sol. The 18th element from the left is 1. The 6th element to the left of 1 is 8.

Directions (Questions 56 – 60):

This question are based on the following information.

Seven places Hyderabad, Bangalore, Delhi, Kerala, Chennai, West Bengal and Gujarat as well as the seven prominent players from these places are known. Each player is from a different place.
– Sachin is not from Delhi and Sehwag is not from Kerala.
– Raina is neither from Hyderabad nor from Bangalore.
– Munaf is either from Chennai or Gujarat
– Dhoni and Yuvraj are neither from Bangalore nor from Kerala
– Kohli is either from Chennai or West Bengal.

56.

This question are based on the following information.

Seven places Hyderabad, Bangalore, Delhi, Kerala, Chennai, West Bengal and Gujarat as well as the seven prominent players from these places are known. Each player is from a different place.
– Sachin is not from Delhi and Sehwag is not from Kerala.
– Raina is neither from Hyderabad nor from Bangalore.
– Munaf is either from Chennai or Gujarat
– Dhoni and Yuvraj are neither from Bangalore nor from Kerala
– Kohli is either from Chennai or West Bengal.

If Raina is from Delhi then Sachin is from which of the following states?

(A) Hyderabad (B) Kerala

(C) Bangalore (D) Chennai

Ans. B

Sol. Given seven players and they are from seven different places.
As Sachin and Sehwag are not from Delhi and Kerala respectively, Raina is neither from Hyderabad nor Bangalore. He can be from any of the other cities except those mentioned above.
In the same manner we proceed for the other players.
Let us write the places and the people who can be from that place.
Hyderabad : Sachin, Sehwag, Dhoni, Yuvraj
Bangalore : Sachin, Sehwag
Delhi : Sehwag, Raina, Dhoni, Yuvraj
Kerala : Sachin, Raina
Chennai : All players
West Bengal : All players except Munaf
Gujarat : All players except Kohli
From the above analysis if Raina is from Delhi then Sachin would be from Kerala.

57.

This question are based on the following information.

Seven places Hyderabad, Bangalore, Delhi, Kerala, Chennai, West Bengal and Gujarat as well as the seven prominent players from these places are known. Each player is from a different place.
– Sachin is not from Delhi and Sehwag is not from Kerala.
– Raina is neither from Hyderabad nor from Bangalore.
– Munaf is either from Chennai or Gujarat
– Dhoni and Yuvraj are neither from Bangalore nor from Kerala
– Kohli is either from Chennai or West Bengal.

If Sachin is from Hyderabad then from which place does Raina come?
(A) Delhi (B) Kerala
(C) West Bengal (D) Gujarat

Ans. B
Sol. If Sachin is from Hyderabad then Sehwag is from Bangalore, Raina is from Kerala.

58.

This question are based on the following information.

Seven places Hyderabad, Bangalore, Delhi, Kerala, Chennai, West Bengal and Gujarat as well as the seven prominent players from these places are known. Each player is from a different place.
– Sachin is not from Delhi and Sehwag is not from Kerala.
– Raina is neither from Hyderabad nor from Bangalore.
– Munaf is either from Chennai or Gujarat
– Dhoni and Yuvraj are neither from Bangalore nor from Kerala
– Kohli is either from Chennai or West Bengal.

If Raina is from West Bengal then who is from Bangalore?
(A) Munaf (B) Sachin
(C) Sehwag (D) Kohli

Ans. C
Sol. Raina is from West Bengal $\Rightarrow$ Sachin is from Kerala and hence Sehwag is from Bangalore.

59.

This question are based on the following information.

Seven places Hyderabad, Bangalore, Delhi, Kerala, Chennai, West Bengal and Gujarat as well as the seven prominent players from these places are known. Each player is from a different place.
– Sachin is not from Delhi and Sehwag is not from Kerala.
– Raina is neither from Hyderabad nor from Bangalore.
– Munaf is either from Chennai or Gujarat
– Dhoni and Yuvraj are neither from Bangalore nor from Kerala
– Kohli is either from Chennai or West Bengal.

If Kohli is not from West Bengal then Munaf is from which place?
(A) Bangalore (B) West Bengal
(C) Delhi (D) Gujarat

Ans. D
Sol. Now if Kohli is not from West Bengal then Munaf is from Gujarat.

60.

This question are based on the following information.

Seven places Hyderabad, Bangalore, Delhi, Kerala, Chennai, West Bengal and Gujarat as well as the seven prominent players from these places are known. Each player is from a different place.
– Sachin is not from Delhi and Sehwag is not from Kerala.
– Raina is neither from Hyderabad nor from Bangalore.
– Munaf is either from Chennai or Gujarat
– Dhoni and Yuvraj are neither from Bangalore nor from Kerala
– Kohli is either from Chennai or West Bengal.

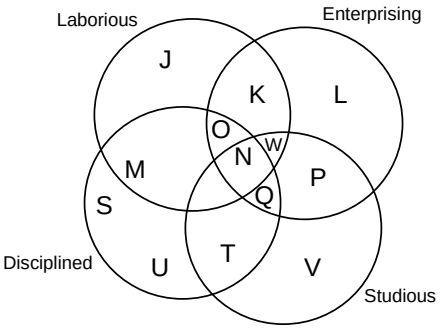
If Sachin is from West Bengal then how many combination are possible?
(A) One (B) Two
(C) Three (D) Four

Ans. B

Sol. If Sachin is from West Bengal ⇒ Kohli is from Chennai and Munaf is from Gujarat, then Raina is from Kerala and Sehwag is from Bangalore.
We need to adjust Dhoni and Yuvraj only.
Hence 2 combination.

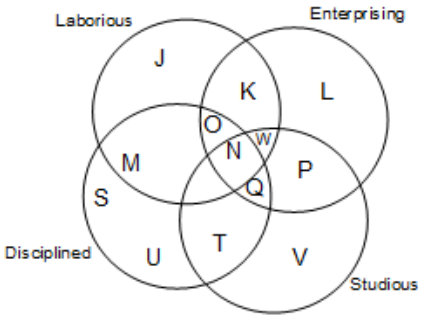
Directions (Questions 61 – 63):

Below is given a figure with four intersecting circles, each representing a group of persons having the quality written against it. Study the figure carefully and answer the questions that follows.



61.

Below is given a figure with four intersecting circles, each representing a group of persons having the quality written against it. Study the figure carefully and answer the questions that follows.



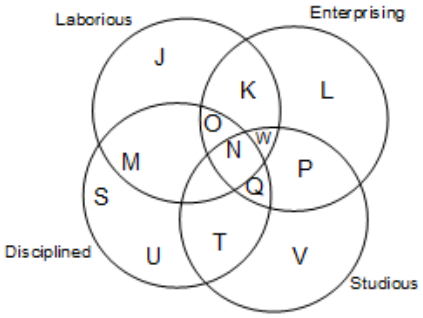
People who are neither laborious, nor enterprising and nor disciplined are represented by
(A) Q (B) T
(C) U (D) V

Ans. D

Sol. People who are only studious are represented by V.

62.

Below is given a figure with four intersecting circles, each representing a group of persons having the quality written against it. Study the figure carefully and answer the questions that follows.



The region which represents the people who are enterprising, studious and disciplined but not laborious, is denoted by

(A) Q (B) P

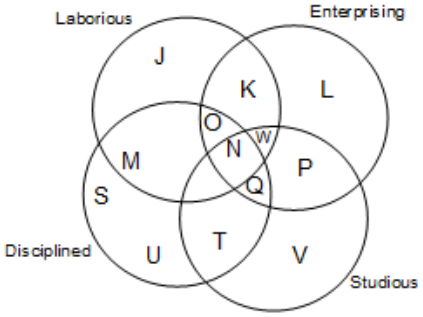
(C) S (D) T

Ans. A

Sol. Q represents the region of enterprising, studious and disciplined people.

63.

Below is given a figure with four intersecting circles, each representing a group of persons having the quality written against it. Study the figure carefully and answer the questions that follows.



People who are neither studious nor disciplined but are laborious and enterprising both, are represented by

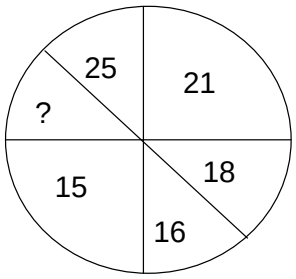
(A) M (B) N

(C) P (D) K

Ans. D

Sol. Required region is represented by K.

64. Find the missing character.



(A) 28 (B) 30
(C) 35 (D) 27

Ans. B

Sol. Moving anti clock wise, the pattern is as follows.
15 + 1 = 16
16 + 2 = 18
18 + 3 = 21
And 21 + 4 = 25
So, missing term 25 + 5 = 30

Directions (Questions 65 – 67):

Words in capital letters column I are written is small letters in a code language in column II. Decode the language and find out the correct alternative for the given word / letter in each question.

Column – I	Column – II
FISH	zmkj
TEA	fir
GAIN	kpgf
DOG	peh
ROSE	cmre
NUT	igq
TRAM	cvif

65.

Words in capital letters column I are written is small letters in a code language in column II. Decode the language and find out the correct alternative for the given word / letter in each question.

Column – I	Column – II
FISH	zmkj
TEA	fir
GAIN	kpgf
DOG	peh
ROSE	cmre
NUT	igq
TRAM	cvif

Code for U is:
(A) i (B) g
(C) q (D) h

Ans. C

Sol. If we decode the words we get as follows:
I – k M – v
E – r
T – i
N – g

R – c
A – f
U – q
Hence option ‘C’ is answer.

66.

Words in capital letters column I are written is small letters in a code language in column II. Decode the language and find out the correct alternative for the given word / letter in each question.

Column – I	Column – II
FISH	zmkj
TEA	fir
GAIN	kpgf
DOG	peh
ROSE	cmre
NUT	igq
TRAM	cvif

Code for M is:
(A) v (B) c
(C) i (D) m

Ans. A
Sol. Clearly from solution of above question. It is option ‘A’.

67.

Words in capital letters column I are written is small letters in a code language in column II. Decode the language and find out the correct alternative for the given word / letter in each question.

Column – I	Column – II
FISH	zmkj
TEA	fir
GAIN	kpgf
DOG	peh
ROSE	cmre
NUT	igq
TRAM	cvif

Code for I is:
(A) m (B) p
(C) f (D) k

Ans. D
Sol. Clearly from solution of above question. It is option ‘D’.

Directions (Questions 68 – 70):

Read the following information and answer the questions given below.

I. A, B, C, D, E, F, G and H are sitting in a row facing north.
II. A is fourth to the right of E.
III. H is fourth to the left of D.
IV. C and F, who are not at the ends, but they are neighbours of B and E, respectively.
V. H is next to the left of A and A is the neighbour of B.

68.

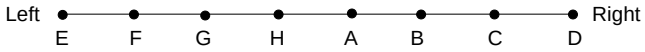
Read the following information and answer the questions given below.

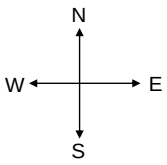
I. A, B, C, D, E, F, G and H are sitting in a row facing north.
II. A is fourth to the right of E.
III. H is fourth to the left of D.
IV. C and F, who are not at the ends, but they are neighbours of B and E, respectively.
V. H is next to the left of A and A is the neighbour of B.

What is the position of F?
(A) Next to the right of E
(B) Next to the right of G
(C) Sixth to the right of D
(D) Between G and H

Ans. A

Sol.





F is next to the right of E.

69.

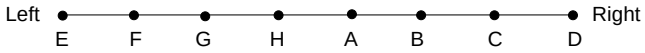
Read the following information and answer the questions given below.

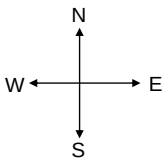
I. A, B, C, D, E, F, G and H are sitting in a row facing north.
II. A is fourth to the right of E.
III. H is fourth to the left of D.
IV. C and F, who are not at the ends, but they are neighbours of B and E, respectively.
V. H is next to the left of A and A is the neighbour of B.

Which of the following statements is not true?
(A) G is the neighbour of H and F
(B) B is next to the right of A
(C) E is at left end
(D) D is next to the right of B

Ans. D

Sol.





D is 2nd to the right of B. Hence, statement 'D' is not true.

70.

Read the following information and answer the questions given below.

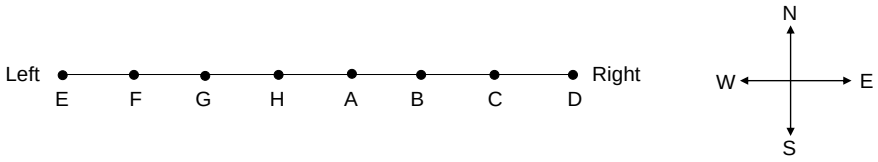
I. A, B, C, D, E, F, G and H are sitting in a row facing north.
II. A is fourth to the right of E.
III. H is fourth to the left of D.
IV. C and F, who are not at the ends, but they are neighbours of B and E, respectively.
V. H is next to the left of A and A is the neighbour of B.

Who is / are the neighbour / (s) of D?
(A) F alone
(B) C alone

(C) B and C (D) Cannot be determined

Ans. B

Sol.



C alone is the neighbour of D.

71. Which one of the following responses is correct?
8 * 5 * 27 * 3 * 16
(A) x, =, –, + (B) –, = x, +
(C) x, =, +, – (D) +, –, =, x

Ans. A

Sol. 8 x 5 = 27 – 3 + 16
$\Rightarrow$ 40 = 24 + 16
$\Rightarrow$ 40 = 40

72. How many such letters are there in the word CATEGORY each of which is as far away from the beginning of the word as when they are arranged in alphabetical order?
(A) None (B) One
(C) Two (D) Three

Ans. B

Sol.

The given word is:	C	A	T	E	G	O	R	Y
Alphabetically:	A	C	E	G	O	R	T	Y

We find that, only Y maintains its position when the word is arranged in alphabetical order.

73. Seema's younger brother Sohan is older than Seeta. Sweta is younger than Deepti but elder than Seema. Who is the eldest?
(A) Seema (B) Sweta
(C) Seeta (D) Deepti

Ans. D

Sol. According to the question, sequence is as follows.
Deepti > Sweta > Seema > Sohan > Seeta
So, Deepti is the eldest.

74. In a certain code, 'MOUSE', is written as 'PRUQC'. How is 'SHIFT' written in that same code?
(A) VKIRD (B) VKIDR
(C) VJIDR (D) VIKRD

Ans. B

Sol. $M \xrightarrow{+3} P$ Similarly $S \xrightarrow{+3} V$

$O \xrightarrow{+3} R$ $H \xrightarrow{+3} K$

$U \xrightarrow{+0} U$ $I \xrightarrow{+0} I$

$S \xrightarrow{-2} Q$ $F \xrightarrow{-2} D$

$E \xrightarrow{-2} C$ $T \xrightarrow{-2} R$

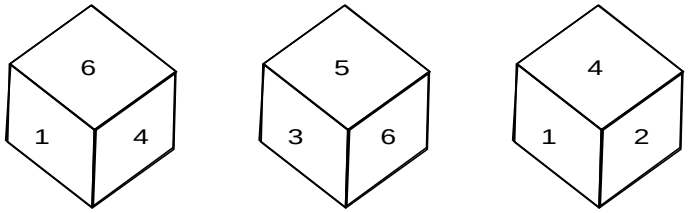
$\therefore$ SHIFT $\Rightarrow$ VKIDR

75. In a certain code language, if 2 x 3 = 65 and 3 x 4 = 127, find the value of 5 x 6 in that language.
(A) 1130 (B) 3101
(C) 1013 (D) 3011

Ans. D

Sol. 2 x 3 = 6, 2 + 3 = 5 $\Rightarrow$ 2 x 3 = 65
$\therefore$, 5 x 6 = 30, 5 + 6 = 11 $\Rightarrow$ 5 x 6 = 3011

76. Three positions of a cube are given. Based on them find out which number is found opposite of number 2 in given cube?

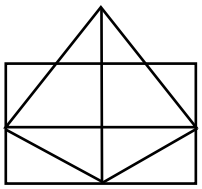


(A) 2 (B) 5
(C) 1 (D) 6

Ans. D

Sol. The numbers 1, 3, 4 and 5 are on adjacent faces of number 6. Hence 2 is opposite to 6.

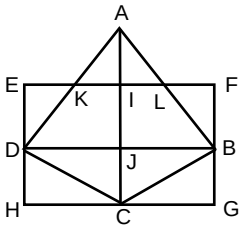
77. Find the number of triangles in the given figure.



(A) 11 (B) 13
(C) 15 (D) 17

Ans. C

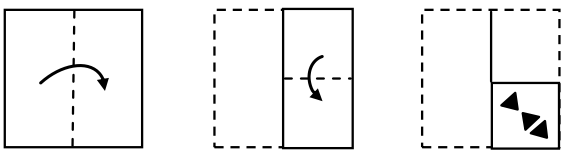
Sol.



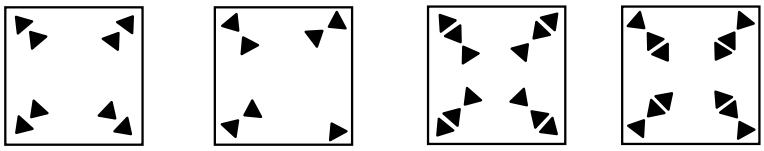
The figure may be labelled as shown.
The simplest triangles are AKI, AIL,.EKD, LFB, DJC, BJC, DHC and BCG, *i.e.,* 8 in number.
The triangles composed of two components each are AKL, ADJ, AJB and DBC *i.e.* 4 in number.
The triangles composed of the three components each are ADC and ABC *i.e.* 2 in number.
There is only one triangle *i.e.* ADB composed of four components.
Thus, there are 8 + 4 + 2 + 1 = 15 triangles in the figure.

Directions (Question 78): In the following question, a set of three figures X, Y and Z showing a sequence in which a paper is folded and finally cut from a particular section. Below these figures a set of answer figures marked (A, B, C & D) showing the design which the paper actually acquires when it is unfolded. You have to select the answer figure which most closely resembles the unfolded piece of paper.

78.



(X) (Y) (Z)



(A) (B) (C) (D)

Ans. C

Sol. As per observation.

Directions (Question 79): In this question, four alternatives are given. You have to select one alternative which exactly matches with the mirror image of the word in the question.

79. test5auto

(A) (B) (C) (D)

Ans. A

Sol. As per observation.

80. In a box there are 120 balls. $\frac{1}{6}$th of the balls are white and $\frac{1}{4}$th are green. The numbers of blue balls are $\frac{9}{2}$ times of the difference between green and white balls & rest of the balls are black. Find what parts of the balls are black.

(A) 3/24 (B) 5/24

(C) 4/25 (D) 6/24

Ans. B

Sol. Number of black balls = 25

Required answer = $\frac{25}{120} = \frac{5}{24}$

81. The age of a father is twice that of the elder son. Ten years hence the age of the father will be three times that of the younger son. If the difference of ages of the two sons is 15 years, the age of the father is

(A) 50 years (B) 55 years (C) 60 years (D) 70 years

Ans. A

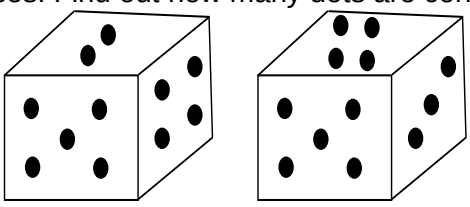
Sol. F = 2 (E.S.)

(F + 10) = 3 (Y.S + 10)

E.S. – Y. S = 15

On solving we get F = 50

82. Study the two different positions of a cube given below with dots from 1 to 6 marked on its faces. Find out how many dots are contained on the face opposite to that containing 3 dots?



(A) 1 (B) 2

(C) 6 (D) 4

Ans. B

Sol. 2 dots are contained on the opposite face to the 3 dots.

83. What is 'X' in the following table.

7	2	19	3	5
6	4	X	3	5
8	5	24	7	4

(A) 16 (B) 17
(C) 18 (D) 21

83. C

Sol. $\left[(7)^2+(2)^2\right]-\left[(3)^2+(5)^2\right]=49+4-9-25=19$

$\left[(8)^2+(5)^2\right]-\left[(7)^2+(4)^2\right]=64+25-49-16=24$

$\therefore\left[(6)^2+(4)^2\right]-\left[(3)^2+(5)^2\right]=36+16-9-25=18$

Directions (Questions 84 – 85): These questions are based on the following information.
A large cube is painted on all six faces and then cut into a certain number of smaller but identical cubes. It was found that among the smaller cubes, there were eight cubes which had no face painted at all.

84. A large cube is painted on all six faces and then cut into a certain number of smaller but identical cubes. It was found that among the smaller cubes, there were eight cubes which had no face painted at all.

How many smaller cubes was the original large cube cut into?
(A) 27 (B) 48
(C) 64 (D) 125

Ans. C

Sol. When a cube is painted and cut into n number of smaller pieces along each edge, the total number of smaller cubes that we get will be n x n x n. From these, if we remove the complete outer layer of the cubes on all faces, we will have all smaller cubes with paint on them removed and we will be left with (n – 2) x (n – 2) x (n – 2) cubes. In this case, if the number of cubes that do not have any face painted is 8, it is a 2 x 2 x 2 cube; so before painting, it must have been a 4 x 4 x 4 cube so the original cube was cut into 64 smaller cubes.

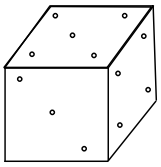
85. A large cube is painted on all six faces and then cut into a certain number of smaller but identical cubes. It was found that among the smaller cubes, there were eight cubes which had no face painted at all.

How many small cubes have exactly one face painted?
(A) 12 (B) 24
(C) 16 (D) 32

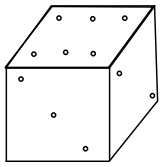
Ans. B

Sol. On each face of the original large cube, if we remove the outer row of the cube along all the four edges, the remaining 2 x 2 (= 4) cubes will have exactly one face painted. On all six faces together, there will be 24 cubes that will have exactly one face painted.

86. Two positions of a dice are shown below. If 1 is at the bottom, which number will be on the top?



(i)



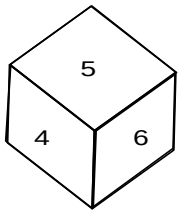
(ii)

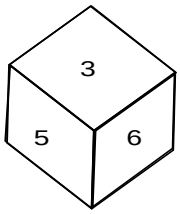
(A) 2
(B) 3
(C) 4
(D) 5

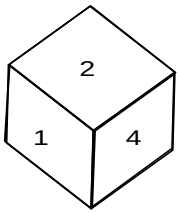
Ans. B

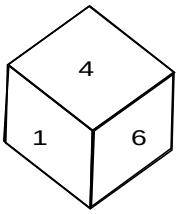
Sol. 1 opposite 3
2 opposite 4
5 opposite 6
Hence, option (B).

87. Study the four different positions of a cube given below with numbers from 1 to 6 marked on its faces. Find out which number is contained on the face opposite to the face containing 3?









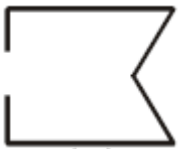
(A) 5
(B) 4
(C) 2
(D) 6

Ans. B

Sol. 1 opposite to 5
2 opposite to 6
4 opposite to 3

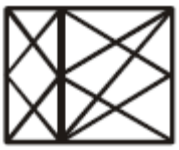
Directions (Questions 88 – 89): In the given questions find from the answer figures in which the question figure is embedded.

88.



(X)

(A)



(B)

(C)

(D)

Ans. C

Sol.

The given figure is embedded in the option (C).

In the given questions find from the answer figures in which the question figure is embedded.

89.

(X)

(A)

(B)

(C)

(D)

Ans. B

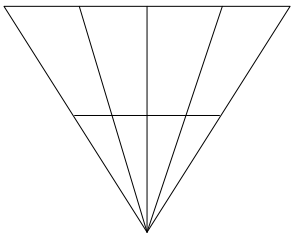
Sol.

The given figure is embedded in the option (B).

90. How many triangles are there in the following figure?

(A) 20 (B) 18

(C) 22 (D) 17

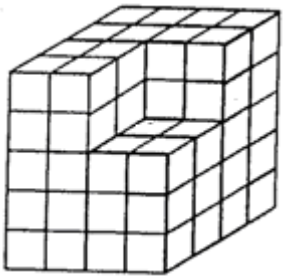


Ans. A

Sol. Triangle cosists of 1 figure=4

Triangle cosists of 2 figure=7
Triangle cosists of 3 figure=2
Triangle cosists of 4 figure=4
Triangle cosists of 6 figure=2
Triangle cosists of 8 figure=1
Total number of triangles is 20

91. Find the number of cubes.

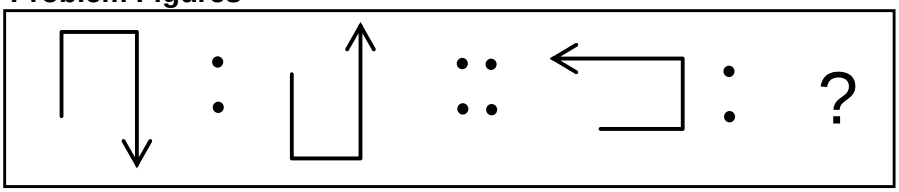


(A) 48 (B) 64
(C) 72 (D) 76

Ans. C
Sol. As per observation.

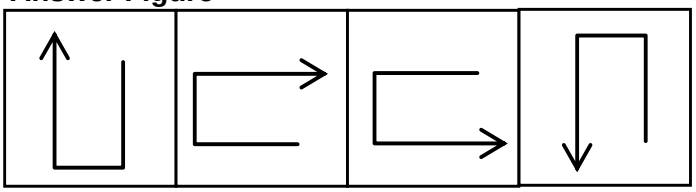
Directions (Question 92): In this question, select the related figure from the given alternatives.

92. **Problem Figures**



1 2 3 4

Answer Figure

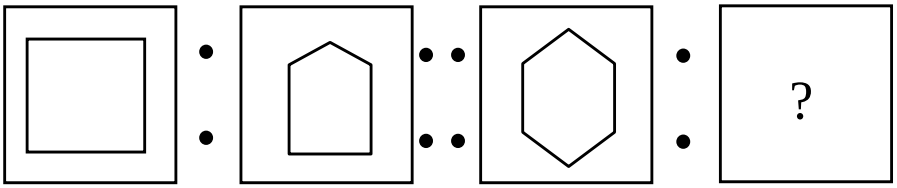


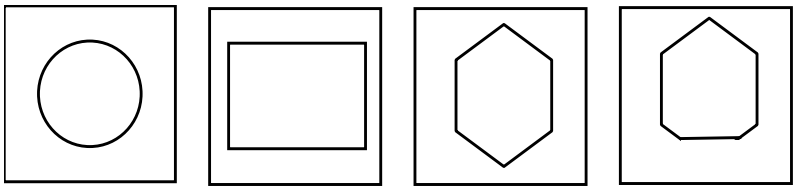
(A) (B) (C) (D)

Ans. B
Sol. As per observation.

Directions (Question 93): In the following questions, select the related figure from the given options.

93.





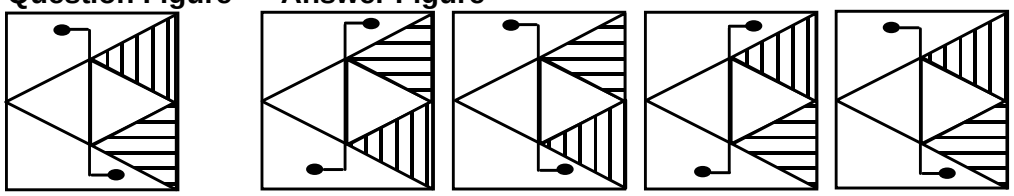
(A) (B) (C) (D)

Ans. D
Sol. From the first figure to second figure, one side is increased.
So, the answer is (D).

Directions (Questions 94 - 95):

Find the water image of the objects given in the question figures denoted by (X) out of the figures given in the answer figures (A), (B), (C) & (D).

94. **Question Figure** **Answer Figure**

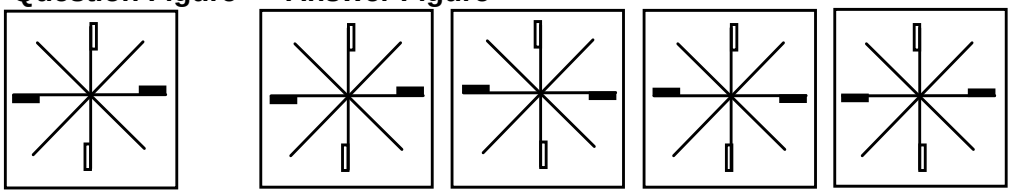


(X) (A) (B) (C) (D)

94. A
Sol. As per observation.

Find the water image of the objects given in the question figures denoted by (X) out of the figures given in the answer figures (A), (B), (C) & (D).

95. **Question Figure** **Answer Figure**

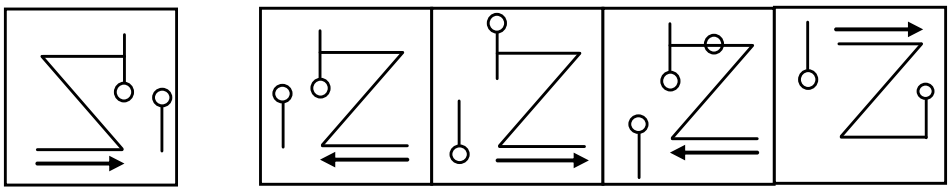


(X) (A) (B) (C) (D)

Ans. B
Sol. As per observation.

Directions (Question 96): In this question, select the correct mirror image from the given four choices

96.



(X) (A) (B) (C) (D)

Ans. A
Sol. If we observe clearly option A is the answer.

97. A + B means A is the daughter of B, A x B means A is the son of B and A – B means A is the wife of B. If T – S x B – M, which of the following is NOT true?
(A) M is the husband of B (B) B is the mother of S
(C) S is the daughter of B (D) T is the wife of S

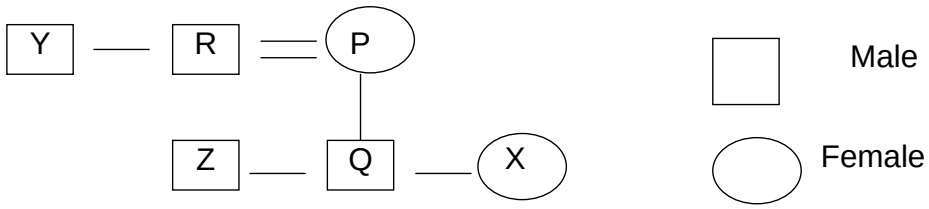
97. C
Sol. We have,
T is the wife of S
S is the son of B
B is the wife of M
Hence, option '3' is the answer.

98. A family consist of six members P, Q, R, X, Y, Z.
Q is the son of R but R is not mother of Q.
P and R are a married couple.
Y is the brother of R. X is the daughter of P. Z is the brother of Q.
Which symbol represents all the children of P?

(A) QXYZ
(B) QXZ
(C) XZR
(D) QZ

98. B

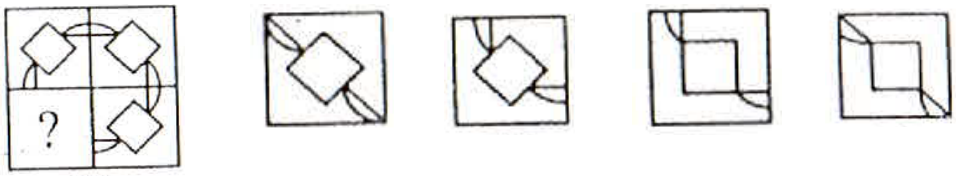
Sol.



Clearly, Q, X and Z are children of P

Directions (Questions 99 – 100): In the following questions, select the figure from amongst the four alternatives, which when placed in the blank space of figure (X) would complete the pattern.

99.



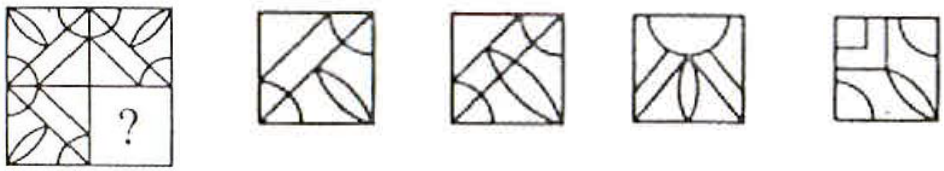
(X) (A) (B) (C) (D)

Ans. B

Sol. As per observation.

In the following questions, select the figure from amongst the four alternatives, which when placed in the blank space of figure (X) would complete the pattern.

100.



(X) (A) (B) (C) (D)

Ans. A

Sol. As per observation.