

**Navik  
GD**

**Memory Based Paper  
(Section I + II) 21 March  
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## 110 Questions

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**Que. 1** If 70% of p = 20% of q, then what percent of p is q?

1. 250%
2. 315%
3. 350%
4. 280%

Correct Option - 3

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**Que. 2** If  $a^3 + b^3 + c^3 = 3abc$ . Find the value of  $a + b + c$  ?

1. 4
2. 8
3. 2
4. 0

Correct Option - 4

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**Que. 3** The ages of Manoj and Mahendra are in the ratio of 4 : 3 and the difference of their ages is 11 years. What will be the ratio of their ages after 5 years?

1. 49 : 38
2. 39 : 28
3. 44 : 33
4. 38 : 49

Correct Option - 1

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**Que. 4** A car travelling at 40 km/hr completes a journey in 5 hours. At what speed will it have to cover the same distance in 8 hours?

1. 30 KM/hr
2. 40 km/hr
3. 35 km/hr
4. 25 km/hr

Correct Option - 4

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**Que. 5** Sum of Rs. 1750 is divided into two parts such that interest on first part at 8% per annum and second part at 6% per annum are equal. interest on each part is ?

1. 60
2. 55
3. 61
4. 63

Correct Option - 1

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**Que. 6** How much will Rs. 25,000 amount to in 2 years at compound interest, if the rate of interest for successive years be 4% and 5% per year ?

1. Rs. 25,300

2. Rs. 26,300
3. Rs. 27,300
4. Rs. 28,300

Correct Option - 3

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**Que. 7** Find the mean and median of the given data respectively: {21, 22, 24, 25, 25, 18, 26}

1. 23, 24
2. 24, 23
3. 22, 25
4. 25, 22

Correct Option - 1

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**Que. 8** If an article is sold at a loss of 20% for Rs. 450, then, what will be the price of the article if it is sold at 20% profit?

1. Rs. 475
2. Rs. 575
3. Rs. 675
4. Rs. 775

Correct Option - 3

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**Que. 9** The present ages of three persons in proportions 8 : 4 : 3. 5 years ago, the sum of their ages was 90. Find their present ages (in years)?

1. 20, 24, 16
2. 42, 20, 25
3. 38, 25, 30
4. 56, 28, 21

Correct Option - 4

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**Que. 10** In a family of 14 members, the average age of all the family members is 30 years. A new baby born in a family, Find the average age of all the family members after 4 years?

1. 23 years
2. 32 years
3. 30 years
4. 35 years

Correct Option - 2

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**Que. 11** If  $a + b = 8$  and  $a^2 + b^2 = 34$ , then value of  $ab$  is

1. 30
2. 64
3. 98
4. 15

Correct Option - 4

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**Que. 12** In an examination, Manish got 20% of total marks and failed by 20 marks. Mohit got 40 marks and failed by 10%.of total marks. What is the total marks in the examination?

1. 200 marks
2. 240 marks
3. 300 marks
4. 180 marks

Correct Option - 1

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**Que. 13** If  $A = 30^\circ$ , then value of  $2 \sin A \times \cos A$  is \_\_\_\_\_.

1.  $\sqrt{3}/2$
2.  $\sqrt{3}$
3.  $3/2$
4. 6

Correct Option - 1

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**Que. 14** If  $\sin(3x)^\circ = \cos(2x + 45)^\circ$ , then what is the value of  $x$ ?

1.  $4^\circ$
2.  $7^\circ$
3.  $9^\circ$
4.  $10^\circ$

Correct Option - 3

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**Que. 15** The vertical  $\angle L$  of an isosceles  $\triangle LMN$  is 4 times the  $\angle M$  of it. Find  $\angle N$  and  $\angle L$ .

1. 30 and 120
2. 25 and 100
3. 10 and 40
4. 20 and 80

Correct Option - 1

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**Que. 16** If the radius of a circle is increased by 10% then what is the percentage increase in its area?

1. 11%
2. 21%
3. 25%
4. 10%

Correct Option - 2

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**Que. 17** A boat goes 8 km upstream and 8 km downstream in 3 hours. If the speed of current is 2 kmph, find the speed of boat in still water in kmph.

1. 4
2. 3
3. 6
4. 8

Correct Option - 3

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**Que. 18** The cost price of the tablet is Rs. 20,100. The retailer gave 40% discount on the marked price. If the tablet is sold at 40% profit, find the marked price of the tablet.

1. Rs. 40,800

2. Rs. 27,500
3. Rs. 35,750
4. Rs. 46,900

Correct Option - 4

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**Que. 19** When Aman alone does a piece of work, he takes 16 days more than the time taken by Aman and Ajeet to complete the work, while Ajeet alone takes 9 days more than the time take by both to finish the work. What time, both will take to finish this work?

1. 12
2. 11
3. 15
4. 9

Correct Option - 1

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**Que. 20** A and B alone can complete the work in 15 days and 20 days respectively. They took work for Rs. 840. Find the difference between the wages of A and B.

1. Rs.110
2. Rs.135
3. Rs.120
4. Rs.100

Correct Option - 3

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**Que. 21** Choose the option that is the passive form of the given sentence.

Who has given permission to enter the garden?

1. By whom has permission been given to you to enter the garden?
2. By whom had been permission given to you to enter the garden?
3. By whom was permission given to you to enter the garden?
4. By whom is the permission being given to you to enter the garden?

Correct Option - 1

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**Que. 22** Choose the option that is the passive form of the given sentence.

Be kind to everyone but do not trust anyone.

1. You are advised to be kind to everyone and requested not to trust anyone.
2. You are advised to be kind to everyone but forbidden to trust anyone.
3. You are warned to be kind to everyone and advised to not trust anyone.
4. You are requested to be kind to everyone and to not trust anyone.

Correct Option - 2

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**Que. 23** Direction: Change the Narration-

The teacher said to her, "Do not waste your time."

1. The teacher advised her do not to waste her time.
2. The teacher advised her not to waste her time.
3. The teacher advised her not do not waste her time.
4. The teacher advised her not to wasted her time.

Correct Option - 2

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**Que. 24** Choose the option that is the indirect form of the sentence.

Nikita said to me, "Will you come to the party tonight?"

1. Nikita asked me whether I would come to the party that night.
2. Nikita asked me whether I will come to the party that night.
3. Nikita asked me whether I would come to the party tonight.
4. Nikita asked me whether you would come to the party that night.

Correct Option - 1

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**Que. 25** **Direction:** Spot the erroneous parts, if any, in the following sentences:

We visited (A) / the beach and the seawater (B) / felt warmly. (C) / No error (D)

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

Correct Option - 3

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**Que. 26** **Direction:** Find out which part has an error and mark it as your answer. If there is no error, mark 'No error' as your answer.

The ways of communication has (A) / changed dramatically (B) / since the last century. (C) / No error (D)

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

Correct Option - 1

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**Que. 27** **Direction:** Fill in the blank with the most appropriate option.

\_\_\_\_\_ in the first attempt, he did not try again.

1. Being failing
2. Having failed
3. Being failed
4. Having fail

Correct Option - 2

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**Que. 28** **Direction:** Choose the correct one-word substitute for the following:

The killing of a race of people

1. homicide
2. suicide
3. genocide
4. patricide

Correct Option - 3

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**Que. 29** **Direction:** Choose the correct meaning of the following phrase/idiom.

Veer away

1. To control

2. To run away
3. To distract
4. To avoid

Correct Option - 4

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**Que. 30** In the given question, four words are given out of which one word is correctly spelt. Choose the correctly spelt word.

1. Conscience
2. Concince
3. Concinse
4. Caunscience

Correct Option - 1

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**Que. 31** Direction: Select the most appropriate synonym of the given word.

MORALE

1. Appearance
2. Attitude
3. Self-confidence
4. Reputation

Correct Option - 3

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**Que. 32** Direction: Choose the words similar in meaning to the ones in capitals.

MISERY

1. Loss
2. Falsehood
3. Fraud
4. Sorrow

Correct Option - 4

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**Que. 33** Direction: Select the most appropriate ANTONYM of the given word.

AWKWARD

1. Problematic
2. Convenient
3. Difficult
4. Matchless

Correct Option - 2

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**Que. 34** In the following question, choose the word which is opposite in meaning to the given word.

Haughty

1. Attractive
2. Angry
3. Modest
4. Spatial

Correct Option - 3

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**Que. 35** **Direction:** In the following question, out of the four alternatives, choose the word which is opposite in meaning to the given word and click the button corresponding to it.

NULLIFY

1. Avoid
2. Authenticate
3. Acquire
4. Ascend

Correct Option - 2

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**Que. 36** Who is the first non-Indian to receive Bharat Ratna?

1. Dr. Martin Luther King, Jr.
2. Mother Teresa
3. Khan Abdul Ghaffar Khan
4. Zubin Mehta

Correct Option - 3

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**Que. 37** The Tropic of Cancer passes through how many states of India?

1. 6
2. 7
3. 8
4. 9

Correct Option - 3

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**Que. 38** Which of the following is capital of Cambodia?

1. Nicosia
2. Hanoi
3. Phnom Penh
4. Dili

Correct Option - 3

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**Que. 39** Who is the current Chief Minister of Tamil Nadu?

1. Edappadi K. Palaniswami
2. M.K. Stalin
3. O. Panneerselvam
4. K. Ponmudy

Correct Option - 2

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**Que. 40** Vinesh Phogat is related to which of the following sports?

1. Chess
2. Archery
3. Athletics
4. Wrestling

Correct Option - 4

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**Que. 41** The mirror used by a dentist to examine the teeth of patients is

1. Concave
2. Convex
3. Plane
4. Cylindrical

Correct Option - 1

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**Que. 42** Peeling of Onions causes tears as onion releases:

1. Sulphonic Acid
2. Sulfenic Acid
3. Amino Acid
4. Carboic Acid

Correct Option - 2

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**Que. 43** What is the chemical formula of Dry ice?

1. CO
2. CO<sub>2</sub>
3. H<sub>2</sub>O
4. H<sub>2</sub>O<sub>2</sub>

Correct Option - 2

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**Que. 44** The chemical formula of sodium carbonate is \_\_\_\_\_.

1. Na<sub>2</sub>CO<sub>3</sub>
2. NaCO<sub>3</sub>
3. Na<sub>3</sub>CO<sub>2</sub>
4. NaCO<sub>2</sub>

Correct Option - 1

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**Que. 45** The acid used in a car battery is:

1. Acetic acid
2. Hydrochloric acid
3. Nitric acid
4. Sulfuric acid

Correct Option - 4

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**Que. 46** Which of the following is a vector quantity?

1. Force
2. Pressure
3. Energy
4. Temperature

Correct Option - 1

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**Que. 47** 1 barrel of oil = \_\_\_\_\_ litre.

1. 159
2. 166
3. 110
4. 127

Correct Option - 1

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**Que. 48** If the current in the wire is doubled then the heat produce will become:

1. Half
2. One fourth
3. Double
4. Four times

Correct Option - 4

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**Que. 49** Becquerel is the unit of measurement of \_\_\_\_\_.

1. Radioactivity
2. Velocity
3. conductivity
4. Resistivity

Correct Option - 1

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**Que. 50** Calculate the relative molecular mass of  $\text{CO}_2$ .

1. 46 u
2. 44 u
3. 40 u
4. 45 u

Correct Option - 2

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**Que. 51** Select the option in which the words share the same relationship as that shared by the given pair of words.

Kangaroo : Joey

1. Deer : Fawn
2. Calf : Elephant
3. Cub : Tiger
4. Piglet : Pig

Correct Option - 1

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**Que. 52** Select the option that is related to the fifth letter- cluster in the same way as the second letter-cluster is related to the first letter-cluster and the fourth letter- cluster is related to the third letter-cluster.

ONLJ : WVTR :: PMGE : XUOM :: QLKI : ?

1. YTPR
2. YTSQ
3. WTSQ
4. QLKR

Correct Option - 2

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**Que. 53** Four number-pairs have been given, out of which three are alike in some manner and one is different. Select the number-pair that is different.

1. 19 : 324
2. 5 : 35
3. 7 : 63
4. 13 : 195

Correct Option - 1

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**Que. 54** Ram pointed to Sohan and said, "He is the only son of my mother's father." How is Sohan related to Ram's mother?

1. Husband
2. Nephew
3. Maternal uncle
4. Brother

Correct Option - 4

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**Que. 55** DIRECTIONS: Study the following figures and find out the number opposite to 2.



1. 4
2. 5
3. 1
4. 6

Correct Option - 2

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**Que. 56** Select the combination of letters that when sequentially placed in the blanks of the given series will complete the series.

T \_ X T U \_ \_ U X T \_ X

1. T X X U
2. U X T U
3. T U U X
4. X T U X

Correct Option - 2

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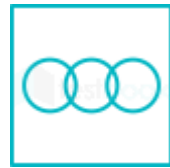


**Que. 57** Riya walks 20 m southward, then turns left and walks 60 m. She then turns right and walks 100 m. What is the total distance that Riya travelled?

1. 100 m
2. 120 m
3. 240 m
4. 180 m

Correct Option - 4

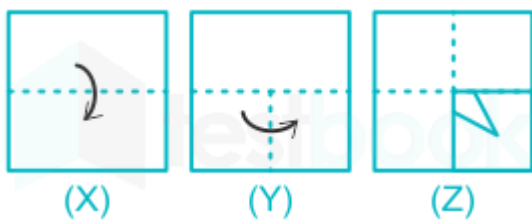
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**Que. 58** Select the Venn diagram that best represents the relationship between the following classes.  
Doctors, Fathers, Mothers

1. 
2. 
3. 
4. 

Correct Option - 2

**Que. 59** If a square sheet of paper is folded as shown in the question figure(x) and (y) and cuts are made as shown in the question figure(z) how will it appear when it is opened?



1. 
2. 
3. 
4. 

Correct Option - 4

**Que. 60** If P means "Addition", Q means "Multiply", R means "Divide", S means "Subtraction", then what will be the value of the following expression?

18 R 9 P 2 Q 8 S 4

1. 18
2. 16
3. 14
4. 20

Correct Option - 3

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**Que. 61** The resistivity of material depends on

1. Length of conductor
2. Area of cross section
3. Type of material
4. All the above

Correct Option - 3

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**Que. 62** The process of superimposing signal frequency ( i.e. audio wave) on the carrier wave is known as

1. Transmission
2. Reception
3. Modulation
4. Detection

Correct Option - 3

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**Que. 63** Unidirectional property of p-n junction diode is utilized in

1. transistor
2. rectifier
3. amplifier
4. oscillator

Correct Option - 2

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**Que. 64** Quantization of electric charge is demonstrated by:

1. Millikan's oil drop experiment
2. Thompson's experiment
3. Rutherford's  $\alpha$ -ray scattering experiment
4. Stern-Gerlach experiment

Correct Option - 1

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**Que. 65** Most of the energy produced by the sun is due to

1. nuclear fission
2. nuclear fusion
3. chemical reaction
4. gravitational collapse

Correct Option - 2

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**Que. 66** In Huygens principle, the relation between wavefront and the ray of light is-

1. Ray of light is perpendicular to the wavefront

2. Ray of light is parallel to the wavefront
3. Ray of light is tangential to the wavefront
4. Ray of light coincides exactly with the wavefront

Correct Option - 1

**Que. 67** The focal length of the convex mirror is 50 cm. If the image formed is half of the size of the object, the distance of the object from the mirror is:

1. 50 cm
2. 25 cm
3. 100 cm
4. 20 cm

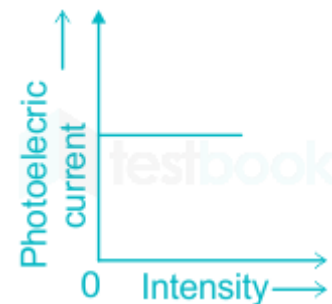
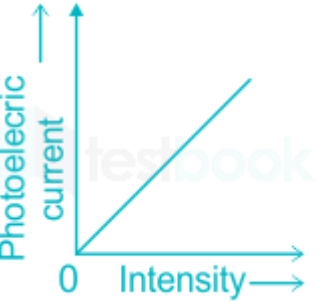
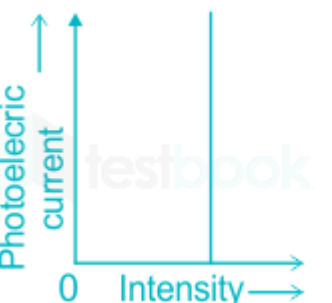
Correct Option - 1

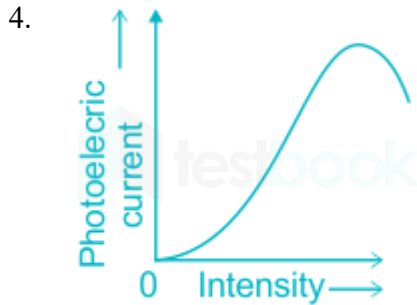
**Que. 68** Two infinite plane parallel sheets having surface charge density  $+\sigma$  and  $-\sigma$  are kept parallel to each other at a small separation distance  $d$ . The electric field at any point in the region between the plates is

1. zero
2.  $\frac{\sigma}{\epsilon_0}$
3.  $\frac{\sigma}{2\epsilon_0}$
4.  $\frac{\sigma}{3\epsilon_0}$

Correct Option - 2

**Que. 69** Which of the following represent the relation between photoelectric current and intensity of light?

1. 
2. 
3. 



Correct Option - 2

**Que. 70** Three-Point charges enclosed by a surface 'S' are 10C, -5C, -5C. Find the total flux passing through 'S'

1.  $\frac{20}{\epsilon_0}$
2.  $\frac{10}{\epsilon_0}$
3.  $\frac{5}{\epsilon_0}$
4. 0

Correct Option - 4

**Que. 71** A simple pendulum has a period of 2 sec. Find its length if  $g = 9.8 \text{ m/s}^2$ .

1. 0.79 m
2. 0.98 m
3. 0.89 m
4. None of the above

Correct Option - 2

**Que. 72** If the increase in internal energy of the system is 100 J, when 200 J heat is given to the system, then the work done will be:

1. 200 J
2. 300 J
3. 100 J
4. 0 J

Correct Option - 3

**Que. 73** Which of the following statement is correct regarding the principle of conservation of energy.

1. There is no proof for this principle.
2. This principle has no violations or exceptions.
3. Both 1 and 2
4. Neither 1 nor 2

Correct Option - 3

**Que. 74** If the kinetic energy of a body is increased by 125%, then its momentum will increase by:

1. 25%
2. 50%
3. 75%
4. 125%

Correct Option - 2

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**Que. 75** A boxer moves his head backward while he receive a punch to the head. This is done to

1. increase the contact time and avoid getting hurt
2. decrease the contact time and avoid getting hurt
3. create confusion to the opponent
4. to increase the momentum

Correct Option - 1

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**Que. 76** During projectile motion, the acceleration of the particle in the horizontal direction is:

1. Equal to  $g$
2. Zero
3. Less than  $g$
4. More than  $g$

Correct Option - 2

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**Que. 77** Two forces of magnitudes  $2F$  and  $\sqrt{2}F$  act such that the resultant force is  $\sqrt{10}F$ . Then find the angle between the two forces.

1.  $45^\circ$
2.  $90^\circ$
3.  $120^\circ$
4.  $30^\circ$

Correct Option - 1

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**Que. 78** A racing car accelerates on a straight road from rest to the speed of  $160\text{ m/s}$  in  $10\text{ s}$ . Assuming uniform acceleration of the car throughout, the distance covered in this time will be

1.  $8\text{ m}$
2.  $800\text{ m}$
3.  $8000\text{ m}$
4.  $1.6 \times 10^2\text{ m}$

Correct Option - 2

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**Que. 79** We can remove the end error of meter bridge experiment by

1. changing the wire used in the meter bridge
2. repeating the experiment by changing known and unknown resistances
3. taking average value of resistances determined using 2)
4. both 2) and 3)

Correct Option - 4

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**Que. 80** Which of the following statement is correct regarding AC generators?

1. It converts mechanical energy into electrical energy.
2. It works on the principle of Faraday's Law.
3. Generated energy can be in the form of sinusoidal waveform
4. All of the above statements are correct regarding AC generators.



Correct Option - 4

**Que. 81** A body is falling freely in a viscous liquid. If the radius of the body is doubled, its terminal velocity will become:

1. Doubled
2. Four times
3. One fourth
4. Half

Correct Option - 2

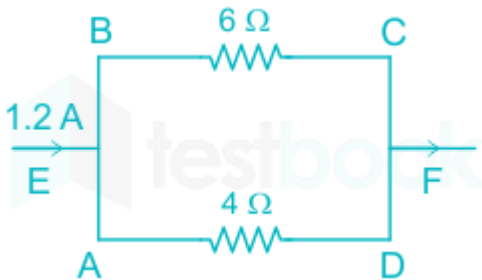
**Que. 82** If  $\Delta U$  is the increase in internal energy and  $W$  is the work done by a system, then which of the following statements is true?

1.  $\Delta U = W$  in an adiabatic process
2.  $\Delta U = -W$  in an isothermal process
3.  $\Delta U = -W$  in an adiabatic process
4.  $\Delta U = W$  in an isothermal process

Correct Option - 3

**Que. 83** Observe the figure given below.

Find the current passing through the  $6\ \Omega$  resistor.



1. 0.72 A
2. 0.80 A
3. 0.48 A
4. Cannot be said

Correct Option - 3

**Que. 84** A symmetrical biconvex lens of focal length ' $f$ ' is cut into four identical pieces along and perpendicular to its principal axis. The focal length of each of four pieces is

1.  $4f$
2.  $f/4$
3.  $2f$
4.  $f/2$

Correct Option - 3

**Que. 85** If the length of the conductor wire is increased, the slope of the V-I curve:

1. Increases
2. Decreases
3. Remains same
4. Can't say

Correct Option - 1

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**Que. 86** If  $\begin{vmatrix} 5x & -6 \\ 2 & 4 \end{vmatrix} = 12$ , what is the value of  $x$  ?

1. 1
2. 0
3. 12
4. 2

Correct Option - 2

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**Que. 87** If  $y = \sin(\log \cos x)$  then what is the value of  $\frac{dy}{dx}$

1.  $\cos(\log(\cos x)) \cdot \tan x$
2.  $\sin(\log(\cos x)) \cdot \tan x$
3.  $-\cos(\log(\cos x)) \cdot \tan x$
4.  $-\cos(\log(\sin x)) \cdot \tan x$

Correct Option - 3

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**Que. 88** If  $f(x) = x^3 + 3x^2 + 3x - 7$  then find the value of  $\frac{d f(x)}{dx}$  at  $x = 2$  ?

1. 23
2. 24
3. 27
4. 30

Correct Option - 3

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**Que. 89** What is the value of  $\frac{1}{\cos 330^\circ} - \frac{1}{\sqrt{3} \sin 240^\circ} = ?$

1.  $\frac{2}{3}(1 - \sqrt{3})$
2.  $\frac{2}{3}(1 + \sqrt{3})$
3.  $\frac{1}{3}(1 + \sqrt{3})$
4.  $\frac{1}{3}(1 - \sqrt{3})$

Correct Option - 2

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**Que. 90** Find  $\frac{d}{dx} \sin(e^{\sin 3\sqrt{x}}) = ?$

1.  $\frac{3 \cos(e^{\sin 3\sqrt{x}}) e^{\cos 3\sqrt{x}} (\cos 3\sqrt{x})}{2\sqrt{x}}$
2.  $\frac{3 \sin(e^{\sin 3\sqrt{x}}) e^{\sin 3\sqrt{x}} (\cos 3\sqrt{x})}{2\sqrt{x}}$
3.  $\frac{3 \cos(e^{\sin 3\sqrt{x}}) e^{\sin 3\sqrt{x}} (\cos 3\sqrt{x})}{2\sqrt{x}}$
4.  $\frac{3 \cos(e^{\sin 3\sqrt{x}}) e^{\sin 3\sqrt{x}} (\sin 3\sqrt{x})}{2\sqrt{x}}$

Correct Option - 3

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**Que. 91** If  $\int_0^a \frac{1}{1+x^2} dx = \frac{\pi}{4}$  then, find the value of  $a$  ?

1. 1
2. 2
3. 3
4. 4

Correct Option - 1

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**Que. 92** If  $\tan a \cdot \tan\left(\frac{\pi}{3} + a\right) \cdot \tan\left(\frac{-\pi}{3} + a\right) = K \tan(3a)$  then, find the value of K ?

1. 1
2. 2
3. 3
4. 4

Correct Option - 1

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**Que. 93** If  $|\vec{a} \cdot \vec{b}| = |\vec{a} \times \vec{b}|$  then, find the angle between  $\vec{a}$  and  $\vec{b}$

1.  $\pi$
2.  $\frac{\pi}{2}$
3.  $\frac{\pi}{4}$
4.  $\frac{\pi}{3}$

Correct Option - 3

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**Que. 94** Find the value of  $\int \frac{1-x^2}{1+x} dx$

1. x
2.  $x - \frac{x^2}{2}$
3.  $1 - \frac{x^2}{2}$
4.  $x - 2x^2$

Correct Option - 2

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**Que. 95** The integrating factor of the differential equation  $\frac{dy}{dx} + xy = x$  is

1.  $e^{-\frac{x^2}{2}}$
2.  $e^{\frac{x^2}{2}}$
3.  $e^x$
4. None of these

Correct Option - 2

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**Que. 96** If  $\alpha, \beta$  are the roots of the equation  $3x^2 + 57x - 5 = 0$ , then what is  $\frac{\alpha^3 + \beta^3}{\alpha^{-3} + \beta^{-3}}$  equal to ?

1. -27/125
2. 81/125
3. 27/125
4. -125/27

Correct Option - 4

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**Que. 97** What is the value of  $\lim_{x \rightarrow 0} \frac{(1 - \cos 2x)^2}{x^4}$

1. 1
2. 8
3. 4
4. 0

Correct Option - 3

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**Que. 98** If  $y = x^x$ , what is  $\frac{dy}{dx}$  at  $x = 1$  equal to?

1. 0
2. 1
3. -1
4. 2

Correct Option - 2

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**Que. 99** If  $AB^T$  is defined as a square matrix then what is the order of the matrix B, where matrix A has order  $2 \times 3$ .

1.  $3 \times 3$
2.  $2 \times 3$
3.  $4 \times 2$
4.  $3 \times 2$

Correct Option - 2

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**Que. 100** The value of 'a' such that the vector  $2\hat{i} - \hat{j} + \hat{k}$ ,  $\hat{i} + 2\hat{j} - 3\hat{k}$  and  $3\hat{i} + a\hat{j} + 5\hat{k}$  are coplanar, is

1. 1
2. -2
3. 4
4. -4

Correct Option - 4

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**Que. 101** What is the domain of the function  $f(x) = \cos^{-1}(x - 2)$  ?

1.  $[-1, 1]$
2.  $[1, 3]$
3.  $[0, 5]$
4.  $[-2, 1]$

Correct Option - 2

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**Que. 102** In a  $\Delta ABC$ , if  $a = 18$ ,  $b = 24$  and  $c = 30$  then find the value of  $\sin(A/2)$  ?

1.  $\frac{1}{\sqrt{10}}$
2.  $\frac{1}{\sqrt{5}}$
3.  $\frac{1}{\sqrt{15}}$
4. None of these

Correct Option - 1

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**Que. 103** Given that  $\sin x + \cos x = 1$  determine the value of  $\tan x$ .

1.  $\frac{1}{2}$
2. 0
3. 1
4.  $\frac{1}{4}$

Correct Option - 2

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**Que. 104** What is  $\omega^{100} + \omega^{200} + \omega^{300}$  equal to, where  $\omega$  is the cube root of unity?

1. 1
2.  $3\omega$
3.  $3\omega^2$
4. 0

Correct Option - 4

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**Que. 105** The coefficient of  $x^2$  in the expansion of  $(4 - 5x^2)^{-1/2}$  is

1.  $\frac{5}{16}$
2.  $\frac{-5}{16}$
3.  $\frac{5}{12}$
4.  $\frac{-5}{12}$

Correct Option - 1

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**Que. 106** The solution of differential equation  $\frac{dy}{dx} = \frac{1+x}{2y}$  is

1.  $y^2 = x + \frac{x^2}{2} + c$
2.  $y^2 = x^2 + \frac{x^2}{2} + c$
3.  $y = x + \frac{x^2}{2} + c$
4.  $y^2 = x^2 + \frac{x}{2} + c$

Correct Option - 1

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**Que. 107** If  $4\sin^2x - 2\cos^2x = 2$ , then find the value of  $\tan x$ ?

1.  $\sqrt{3}$
2.  $\sqrt{2}$
3. 1
4. None of these

Correct Option - 2

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**Que. 108** What is  $\int_{-2}^{-1} \frac{x}{|x|} dx$  equal to?

1. -2
2. -1
3. 1

4. 2

Correct Option - 2

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**Que. 109** Evaluate  $\int \frac{dx}{x^2-9}$

1.  $\frac{1}{3} \ln \left| \frac{x-3}{x+3} \right| + C$

2.  $\frac{1}{6} \ln \left| \frac{x+3}{x-3} \right| + C$

3.  $\frac{1}{6} \ln \left| \frac{x-3}{x+3} \right| + C$

4.  $\frac{1}{3} \ln \left| \frac{x+3}{x-3} \right| + C$

Correct Option - 3

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**Que. 110** What is the value of  $\log_{10}x$  if  $\log_{10}2 = 0.301$  and  $\log_{(x-3)}(2x-7) = 2$ ?

1. 0.903

2. 0.4515

3. 0.602

4. 0.3612

Correct Option - 3