



SCIENCE APTITUDE TEST CLASS - 8 SOLUTIONS

EXAM DATE : 25.10.26

www.iitashram.com
Email : iitashram.2011@gmail.com

WhatsApp Channel



Result will be Declared on 02.Nov. 2026

Join IIT ASHRAM on WhatsApp!

Scan the QR code below for instant updates, exam alerts & important announcements.



IIT Ashram

IIT JEE | NEET | GUJCET | FOUNDATION (6 to10)

Alkapuri Office : UG-1&2 Concorde Complex, Above PNB Bank, R. C. Dutt Road, Alkapuri, Vadodara - 390 007. (Guj) India
Ph. : 90330 63029 / 98980 35772

Vasna Branch : AKSHAR PAVILION, 3rd Floor, Tower A, Vasna Bhayli Road, Gotri, Opp. Bhayli TP-1, Vadodara-21.
Ph.: 63588 91896 / 90330 34152

Manjalpur Branch : SF-1 TO 12, Kabir Plaza, Beside Kabir Complex, Above IDBI Bank, Infront of Army Camp Manjalpur, Bhavan's Makarpura Road, Manjalpur, Vadodara - 10. Ph. : 90330 63027 / 90330 63028

Anand Branch : 2nd Floor, HR Stone Building, Beside Croma Showroom, A.V. Road, Nr. Town Hall. Anand. Ph. : 92277 77098 / 84600 09041

Physics

Q.1 The international standard (SI) unit of plane angle is radian (rad).

Correct Answer: D

Q.2 In liquids and gases, the particles are free to move. Heat is primarily transferred by the actual movement of the heated particles, a process known as convection.

Correct Answer: B

Q.3 A basic electric circuit only requires a power source (battery), a path for the current to flow (wires), and usually a switch. An electromagnet is an application of current to generate magnetic field, not a requirement to build a circuit.

Correct Answer: C

Q.4 When an electric current flows through a solenoid, it generates a uniform magnetic field inside the coil, behaving exactly like a bar magnet. It acts like a magnet till the time current flows through it.

Correct Answer: B

Q.5 An electric iron contains a heating element (like a nichrome wire) that offers high resistance to current, converting electrical energy into heat energy.

Correct Answer: C

Q.6 A flexible medium like a rope, string, or cable can only pull an object; it can never push. Since statement C claims it can push, it is the incorrect statement. Statements A and B are completely factually correct.

Correct Answer: C

Q.7 A spring balance measures the tension in the spring, which equals the force applied at either end when the system is in equilibrium.

Correct Answer: C

Q.8 Think about the formula $p = h\rho g$.

Pressure at a specific depth in a stationary liquid depend upon depth, acceleration due to gravity and density of the liquid

Correct Answer: B

Q.9 According to Bernoulli's principle, an increase in the speed of a fluid (like air) occurs simultaneously with a decrease in pressure. Thus, high-speed winds lower the surrounding air pressure.

Correct Answer: A

Q.10 Plane mirrors and convex mirrors always produce virtual and erect images for all object positions. A concave mirror can also produce a virtual and erect image, but only when the object is placed very close to the mirror, specifically between its focus (F) and the pole (P).

Correct Answer: D

Chemistry

Q.11 Melting of ice: It is a physical change because only the state of matter changes (solid to liquid) and no new substance is formed. The others are chemical changes.

Correct Answer: B

Q.12 Warm water particles have more energy, so they move faster and spread the ink quickly. In cold water they move slowly, so mixing takes longer.

Correct Answer: C

Q.13 Phenolphthalein remains colorless in acidic and neutral solutions but turns pink in the presence of a base.

Correct Answer: B

Q.14 A neutralization reaction occurs when an acid and a base react. The result is always the formation of a salt and water, usually with the evolution of heat.

Correct Answer: A

Q.15 Sodium is a highly reactive metal that vigorously reacts with oxygen and water in the air, generating immense heat. It is stored in kerosene to block contact with air and moisture.

Correct Answer: C

Q.16 Petroleum is a mixture of various fractions like petrol, diesel, lubricating oil, etc. Separating these fractions based on their different boiling points is called fractional distillation.

Correct Answer: B

Q.17 Water particles have tiny gaps between them. Sugar particles go into these gaps, so the water does not overflow, but the glass becomes heavier.

Correct Answer: D

Q.18 J1 cannot be broken down, so it is an element. J2 splits into hydrogen and oxygen, so it is a compound. J3 (cloudy, leaves residue) and J4 (brass, any ratio) are both mixtures.

Correct Answer: A

Q.19 Gases dissolve less in hot liquids. In the hot sun, more CO_2 escapes from the soda and builds up inside, so it sprays out when you open the bottle.

Correct Answer: C

Q.20 A more reactive metal displaces a less reactive metal. Since P displaces Q, $P > Q$. R displaces P, so $R > P$. S displaces nothing, making it the least reactive. Putting it together gives $R > P > Q > S$.

Correct Answer: A

Mathematics

Q.21

$$\left(\frac{7}{12}\right)^{-4+3x} = \left(\frac{7}{12}\right)^0$$

$$-4 + 3x = 0$$

$$3x = 4$$

$$x = \frac{4}{3}$$

Correct Answer: D

Q.22 Let the number be x.

Let x be the common multiple of the ages of A and B. Then, the ages of A and B would be 5x and 7x, respectively.

$$\frac{5x+4}{7x+4} = \frac{3}{4}$$

$$\Rightarrow 4(5x+4) = 3(7x+4)$$

$$\Rightarrow 20x+16 = 21x+12$$

$$\Rightarrow 16-12 = 21x-20x$$

$$\Rightarrow 4 = x$$

$$\Rightarrow x = 4$$

$$\therefore \text{Age of B} = 7(x) = 7 \times 4$$

$$= 28 \text{ years}$$

Correct Answer: B

Q.23 $3600 = 2^4 \times 3^2 \times 5^2$.

$$\text{Divide by } 2 \times 3^2 \times 5^2 = 450.$$

$$\text{Then } 3600 \div 450 = 8 = 2^3.$$

Correct Answer: C

Q.24 $x + \frac{5}{6} = -3 \Rightarrow x = -3 - \frac{5}{6} = \frac{-18}{6} - \frac{5}{6} = \frac{-23}{6}$.

Correct Answer: B

Q.25 $a^3+b^3 = (a+b)^3-3ab(a+b)$

$$= 7^3-3 \times 12 \times 7$$

$$= 343-252 = 91.$$

Correct Answer: B

Q.26 $\Rightarrow 1 - 2ab - (a^2+b^2)$

$$\Rightarrow 1- (a^2 + b^2 + 2ab)$$

$$\Rightarrow 1 - (a+b)^2$$

$$\Rightarrow (1+a+b)(1-a-b)$$

Correct Answer: C

Q.27 Let the original number be 100.

Apply the 10% increase:

$$\text{New value}=110$$

Apply the 10% decrease to the new value:

$$\text{Final value}=110-(10\% \text{ of } 110)$$

$$=110-11=99$$

$$\text{New change}=99-100=-1$$

So percentage changes= 1 % decrease (-ve sign indicates a decrease)

Correct Answer: B

Q.28 The equation appears to be $x - \frac{1}{x} = 5$

Squaring:

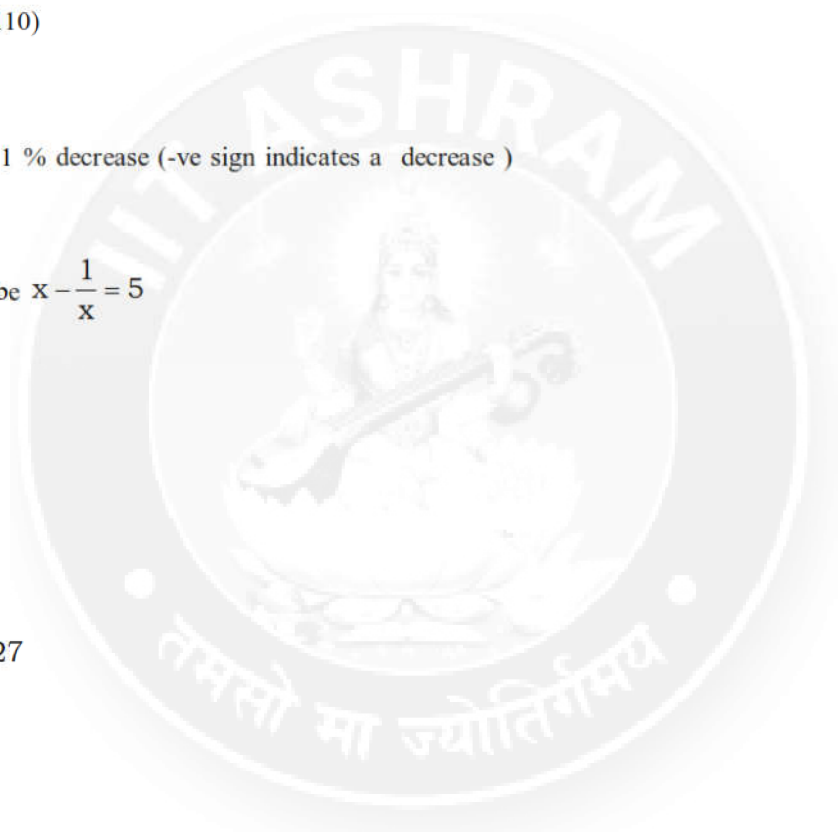
$$\left(x - \frac{1}{x}\right)^2 = 5^2$$

$$\Rightarrow x^2 - 2 + \frac{1}{x^2} = 25$$

$$\Rightarrow x^2 + \frac{1}{x^2} = 25 + 2 = 27$$

$$\Rightarrow x^2 + \frac{1}{x^2} = 27$$

Correct Answer: C



Q.29 SP of the first chair = Rs. 500

Gain percentage = 20%

$$\text{CP of the first chair} = \left\{ \frac{100}{100 + \text{gain}\%} \times \text{SP} \right\}$$

$$= \text{Rs.} \left\{ \frac{100}{(100 + 20)} \times 500 \right\}$$

$$= \text{Rs.} \left(\frac{100}{120} \times 500 \right) = \text{Rs. } 416.67$$

SP of the second chair = Rs. 500

Loss percentage = 12%

$$\therefore \text{CP of the second chair} = \frac{100}{(100 - \text{loss}\%)} \times \text{SP}\%$$

$$= \text{Rs.} \left\{ \frac{100}{(100 - 12)} \times 500 \right\}$$

$$= \text{Rs.} \left\{ \frac{100}{88} \times 500 \right\} = \text{Rs. } 568.18$$

Total CP of the two chairs = Rs. (416.67 + 568.18) = Rs. 984.8

Total SP of the two chairs = Rs. (500 × 2) = Rs. 1000

Since SP > CP, there is a gain in the whole transaction.

Now, gain = Rs. (1000 - 984.85) = Rs. 15.15

$$\text{Gain percentage} = \left(\frac{\text{gain}}{\text{CP}} \times 100 \right) \%$$

$$= \left(\frac{15.15}{984.85} \times 100 \right) \% = 1.538\% \approx 1.5\% (\text{approx})$$

Correct Answer: A

Q.30 A = 4913

n = 3 years

$$R = 6\frac{1}{4}\% = \frac{25}{4}\%$$

$$A = P \left(1 + \frac{R}{100} \right)^n$$

$$4913 = P \left(1 + \frac{25}{4 \times 100} \right)^3$$

$$P = 4096 \text{ Rs}$$

Correct Answer: D

Q.31 Let CP = 100. MP = 140.

$$\Rightarrow \text{After 25\% discount, SP} = 140 - 35 = 105$$

$$\Rightarrow \text{Gain\%} = \frac{5}{100} \times 100\% = 5\%$$

$$\Rightarrow \text{Gain\%} = 5\%$$

Correct Answer: A

Q.32 Area of trapezium = $\frac{1}{2} \times (\text{sum of parallel sides}) \times \text{height}$

$$= \frac{1}{2} \times (24 + 18) \times 15 = 21 \times 15 = 315 \text{ cm}^2.$$

Correct Answer: C

Q.33 CSA of cylinder = $2\pi rh$.

$$\Rightarrow 4400 = 2 \times \frac{22}{7} \times r \times 14 = 88r.$$

$$\Rightarrow r = \frac{4400}{88} = 50 \text{ cm.}$$

Correct Answer: D

Q.34 Let B=x and A=3x.

$$\text{Five years ago: } 3x - 5 = 5(x - 5).$$

$$\Rightarrow 3x - 5 = 5x - 25 \rightarrow 2x = 20 \rightarrow x = 10.$$

$$\Rightarrow A = 3 \times 10 = 30 \text{ years.}$$

Correct Answer: C

Q.35 a:b=2:3 and b:c=4:5.

$$\text{Make b common: } 2:3 = 8:12 \text{ and } 4:5 = 12:15.$$

Correct Answer: A

Q.36 Let A=3x and B=4x.

$$\text{After 5 years: } \frac{(3x+5)}{(4x+5)} = \frac{4}{5}$$

$$\Rightarrow 15x + 25 = 16x + 20$$

$$\Rightarrow x = 5.$$

$$\Rightarrow A = 3 \times 5 = 15 \text{ years.}$$

Correct Answer: B

Q.37 Use $(a+b)^2 - (a-b)^2 = 4ab$.

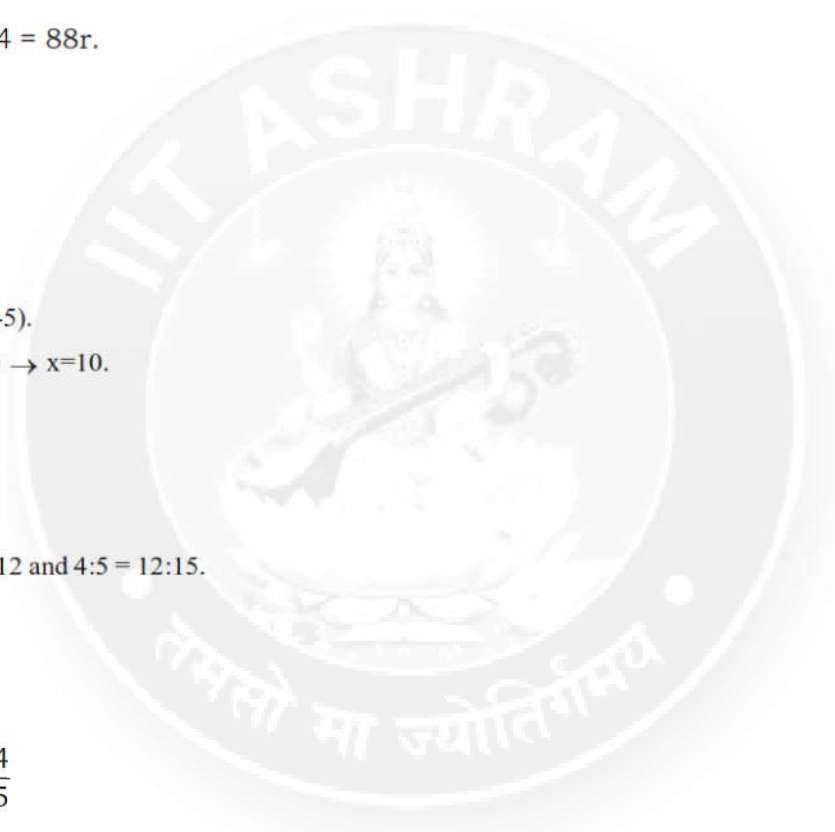
$$\Rightarrow 4 \times 2x \times 3y = 24xy.$$

Correct Answer: B

Q.38 $3x^2 - 5x + 7 - 2x^2 + 3x - 4 + x^2 + 2x - 3$.

$$\text{Combining: } (3-2+1)x^2 + (-5+3+2)x + (7-4-3) = 2x^2.$$

Correct Answer: A



Q.39 $3x-6+2x+2=16$

$$\Rightarrow 5x-4=16$$

$$\Rightarrow 5x=20 \Rightarrow x=4.$$

Correct Answer: B

Q.40 Let integers be $x-1$, x , $x+1$. Then $3x=72$

$$\Rightarrow x=24. \text{ Largest} = 25.$$

Correct Answer: C

Q.41 1. Set up the equation: Let the unknown number be x .

$$\text{"A number decreased by 7"} \Rightarrow x - 7$$

$$\text{"Twice the number decreased by 20"} \Rightarrow 2x - 20$$

$$\Rightarrow x-7 = 2x-20$$

2. Solve for x : Move all x terms to one side and constants to the other.

$$20-7=2x-x \Rightarrow 13=x$$

Correct Answer: C

Q.42 Let breadth = b cm.

$$\text{Length} = b+5 \text{ cm.}$$

$$\text{Perimeter:}$$

$$2(l+b)=46$$

$$\Rightarrow l+b=23$$

$$\Rightarrow l=b+5, \text{ so } 2b+5=23$$

$$\Rightarrow b=9 \text{ cm}$$

$$\Rightarrow \text{Breadth} = 9 \text{ cm}$$

Correct Answer: C

Q.43 Adjacent angles are supplementary: $180^\circ - 60^\circ = 120^\circ$

Correct Answer: C

Q.44 Diagonals bisect at right angles. Half diagonals are 8 cm and 6 cm.

$$\Rightarrow \text{Side} = \sqrt{(8^2+6^2)} = \sqrt{100} = 10 \text{ cm.}$$

Correct Answer: C

Q.45 Number of diagonals : $\frac{n(n-3)}{2} = \frac{10(10-3)}{2}$

$$\frac{10 \times 7}{2} = 7 \times 5 = 35$$

Correct Answer: D

Q.46 Sum of angles = 360° .

$$\Rightarrow D = 360^\circ - (100 + 80 + 100)^\circ = 80^\circ.$$

Correct Answer: B

Q.47 Total work = $12 \times 18 = 216$ man-days.

$$\Rightarrow \text{For 9 men: } 216 \div 9 = 24 \text{ days.}$$

Correct Answer: C

Q.48 Speed = $180 \div 3 = 60$ km/h.

$\Rightarrow$ In 5 hours: $60 \times 5 = 300$ km.

Correct Answer: C

Q.49 Work = $15 \times 12 = 180$ worker-days.

$\Rightarrow$ Workers for 9 days = $180 \div 9 = 20$ days.

Correct Answer: B

Q.50
Probability = $\frac{\text{No. of favorable outcomes}}{\text{Total outcomes}}$

$$= \frac{4}{52} = \frac{1}{13}$$

Correct Answer: C

Biology

Q.51 Does not provide any humus to the soil.

Correct Answer: C

Q.52 Plough

Correct Answer: A

Q.53 Louis Pasteur

Correct Answer: D

Q.54 Typhoid

Correct Answer: B

Q.55 Zoo

Correct Answer: A

Q.56 Frogs

Correct Answer: B

Q.57 Testosterone stimulates the development of mammary gland

Correct Answer: C

Q.58 Budding

Correct Answer: A

Q.59 Air forced out

Correct Answer: D

Q.60 Ball and socket

Correct Answer: B

Mental Ability

Q.61 Pattern: $2^3-1=7$, $3^3-1=26$, $4^3-1=63$, $5^3-1=124$, $6^3-1=215$.

Next = $7^3-1 = 343-1 = 342$.

Correct Answer: B

Q.62 Each letter moves forward by 2.

First letters: C, E, G, I, K.

Other letters: M, O, Q, S, U.

Correct Answer: A

Q.63 The series is babc/babc/babc. Thus, the pattern 'babc' is repeated

Correct Answer: B

Q.64 Total students = 40; rank from top = 15.

Rank from bottom = $40 - 15 + 1 = 26^{\text{th}}$.

Correct Answer: C

Q.65 Order: $D > C > A > B > E$.

Therefore, second tallest is C.

Correct Answer: C

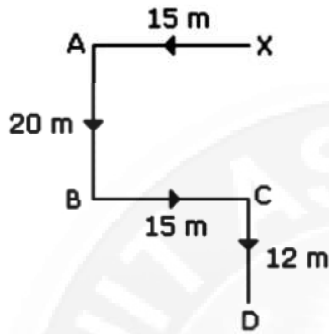
Q.66 Raj is 4th from left.

Two children are between Raj and Sam, so Sam is 7th from left.

Sam is 3rd from right. Total = $7 + 3 - 1 = 9$.

Correct Answer: C

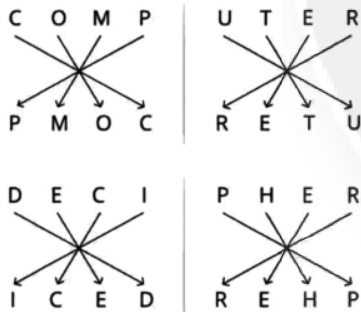
Q.67



Required distance = $20 + 12 = 32$ m in south direction

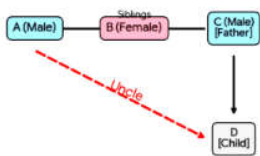
Correct Answer: A

Q.68 Acc. to question:



Correct Answer: B

Q.69



A is brother of B; B is sister of C; C is father of D.

A is the brother of D's father, so A is D's uncle.

Correct Answer: B

Q.70 27 cubes = $3 \times 3 \times 3$.

Cubes with exactly two painted faces lie at the middle of the 12 edges.

Correct Answer: B

Q.71 Opposite faces total 7. If 1 is on top, bottom = $7 - 1 = 6$.

Correct Answer: C

Q.72 Logic: The number in the center of each grid is equal to the sum of the four surrounding numbers.

- Grid 1: $13 + 27 + 10 + 37 = 87$
- Grid 2: $23 + 12 + 19 + 28 = 82$
- Grid 3: $43 + 15 + 28 + 21 = 107$

Correct Answer: C

Q.73 • Divide 30 by 7 to find the remainder: $30 = (4 \times 7) + 2$.

- There are 2 odd days.
- Since we are going back in time, count 2 days backward from Sunday: Saturday, Friday.

Correct Answer: B

Q.74 The logic behind this puzzle is to square each number and then add the squares together ($a^2 + b^2$)

$$2^2 + 3^2 = 4 + 9 = 13$$

$$3^2 + 4^2 = 9 + 16 = 25$$

$$4^2 + 5^2 = 16 + 25 = 41$$

Solving for 5 +6

Following the same rule:

$$5^2 + 6^2 = 25 + 36 = 61$$

Correct Answer: A

Q.75 NA

Correct Answer: D

