



SCIENCE APTITUDE TEST CLASS - 10 SOLUTIONS

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Physics

Q.1 Weight $W = mg$. At the centre of the Earth, the gravitational acceleration (g) is zero due to symmetry. Hence $W = 0$.

Correct Answer: B

Q.2 From Newton's law of gravitation, $F \propto 1/r^2$. If distance is doubled the new force

F' is

$$F' = F/2^2 = 10/4 = 2.5 \text{ N.}$$

$$\% \text{ decrease} = \left(\frac{\text{old value} - \text{new value}}{\text{old value}} \right) \times 100\%$$

$$\% \text{ Decrease} = (10 - 2.5)/10 \times 100 = 75\%.$$

Correct Answer: B

Q.3 Take the initial direction as positive. Initial momentum = $0.25 \times 10 = 2.5 \text{ kg m/s}$.

Since the ball rebounds, final velocity = -8 m/s ,

so final momentum = $0.25 \times (-8) = -2 \text{ kg m/s}$.

Impulse = change in momentum = $-2 - 2.5 = -4.5 \text{ N s}$.

Magnitude of impulse = 4.5 N s .

Correct Answer: C

Q.4 Power of the combination: $P = P_1 + P_2 = (+2 \text{ D}) + (-1 \text{ D}) = +1 \text{ D}$.

Positive power corresponds to a converging (convex) lens.

Correct Answer: A

Q.5 Thickness $t = 4 \text{ mm} = 4 \times 10^{-3} \text{ m}$ and refractive index $\mu = \frac{3}{2}$.

Speed of light in glass $v = \frac{c}{\mu}$

$$\text{Time } t = \frac{\text{distance}}{\text{speed}} = \frac{\mu d}{c} = \left(\frac{3}{2} \right) \left(\frac{4 \times 10^{-3}}{3 \times 10^8} \right) = 2 \times 10^{-11} \text{ s.}$$

Correct Answer: A

Q.6 $\Rightarrow$ Original beam would converge at $P = (12, 0)$

$\Rightarrow$ Convex lens is placed at $L = (2, 0)$

$\Rightarrow$ Focal length of lens:

$$f = 10 \text{ cm}$$

The point P acts as a virtual object for the lens because the incident rays are already converging toward P. For a converging incident beam, the virtual-object distance is taken as positive in the Cartesian sign convention.

Distance of P from the lens

$$u = 12 - 2 = 10 \text{ cm}$$

Apply lens formula

$$\frac{1}{f} = \frac{1}{v} - \frac{1}{u}$$

Substitute:

$$\frac{1}{10} = \frac{1}{v} - \frac{1}{10}$$

Therefore,

$$\frac{1}{v} = \frac{1}{10} + \frac{1}{10}$$

$$\frac{1}{v} = \frac{2}{10}$$

$$v = 5 \text{ cm}$$

So the beam will converge 5 cm to the right of the lens.

Since the lens is at $x = 2$:

$$x = 2 + 5 = 7$$

Correct Answer: C

Q.7 At junction A, current i_1 splits into the two branches, so $i_1 = i_2 + i_3$.

At junction C, i_3 enters C. i_2 current flows from A to B and then to C.

The currents i_2 and i_3 recombine at c and flow through the arm towards D.

Hence the current in CD is $i_2 + i_3$.

Correct Answer: B

Q.8 A lens of power +2 D is a converging lens. A person requiring a positive-power corrective lens has difficulty focusing on nearby objects, characteristic of hypermetropia (long-sightedness). If this problem developed due to aging (person is over 40 yrs), then it is a case of prebyopia since age of the person is not given it could be any one of the disease.

Correct Answer: D

Q.9 For bulbs in series, the current through both is the same.

$$\text{Power } P = I^2 R, \text{ so } P_1:P_2 = R_1:R_2.$$

$$\text{Given } R_1:R_2 = 1:2, \text{ therefore } P_1:P_2 = 1:2.$$

Correct Answer: A

Q.10 Let the three junctions form a triangle. The bottom junction is directly connected to B by an ideal wire, so it is at the same potential as B. Therefore the vertical R and horizontal R from the upper junction to B are in parallel, giving an equivalent resistance of $R/2$.

This is in series with the upper-left R from A to the upper junction:

Therefore equivalent resistance is $R + R/2 = 3R/2$.

This branch is in parallel with the direct A-to-B branch of resistance R.

The net resistance of these two branches connected in parallel is

$$R_{\text{net}} = \frac{R \left(\frac{3R}{2} \right)}{\left(R + \frac{3R}{2} \right)} = \frac{3R}{5} \quad \left(\text{Using the formula } R_p = \frac{R_1 R_2}{R_1 + R_2} \right)$$

Correct Answer: D

Chemistry

Q.11 $[\text{OH}^-] = 0.002 \text{ M}$, $\text{pOH} = 2.69$, $\text{pH} = 11.30$

Correct Answer: C

Q.12 Mixture of $\text{Al}(\text{OH})_3$ and HCl , it is the mixture of W.B and S.A. $\rightarrow$ solution will become acidic. $\text{pH} < 7$.

Correct Answer: A

Q.13 Molecule of phosphorous is P_4 .

Correct Answer: D

Q.14 $(\text{C} / 40) / 12 = 3.33$ $\text{H} : 6.7$, $0.53.3 / 16 = 3.33$ ratio 1:2:1

Correct Answer: A

Q.15 Isotopes have same no of protons and same no of electrons.

Correct Answer: B

Q.16 The ions have electrons 18, charge -3, protons 15, Neutrons 16 and mass of atoms 31. It gain 3e form p^{3-} ion.

Correct Answer: A

Q.17 $\text{N}_2 + 3\text{H}_2 \rightarrow 2\text{NH}_3$, 2 mol NH_3 needs 3 mol of H_2 , So 20 mol NH_3 need 30 mol H_2 .

Correct Answer: C

Q.18 No of atoms $= 3 \times 0.1 \times 6.02 \times 10^{23} = 1.806 \times 10^{23}$

Correct Answer: B

Q.19 It is the mixture of 3 part of conc. HCl and 1 Part of conc HNO_3

Correct Answer: D

Q.20 Double displacement, no change in O.N. of any atoms is given reactions.

Correct Answer: B

Q.21 (D) 4

$$\frac{14587}{125 \times 10} = \frac{14587}{5^4 \times 2} \times \frac{2^3}{2^3} = \frac{14587 \times 8}{(5 \times 2)^4}$$
$$= \frac{116696}{10000} = 11.6696$$

Correct Answer: D

Q.22 (A) 2

Let α and β are two zeros

If one zero is reciprocal of other i.e $\beta = \frac{1}{\alpha}$ then product of zeros $(\alpha \times \beta) = \frac{c}{a}$

$$\alpha \times \frac{1}{\alpha} = \frac{4k}{(k^2 + 4)}$$

$$k^2 + 4 = 4k$$

$$k^2 - 4k + 4 = 0$$

After solving $k = 2$

Correct Answer: A

Q.23 (B) 4

Required number = (91-43), (183-43), (183-91) then HCF of (48, 140, 92) = 4

Correct Answer: B

Q.24 (A) 40

Let the number are $3x$, $4x$ and $5x$ then their LCM $(3x, 4x, 5x) = 60x$

According to question: $60x = 2400$

$$\Rightarrow x = 40$$

Then HCF $(3x, 4x, 5x) = x = 40$

Correct Answer: A

Q.25

Let $a = 56\text{cm}$, $b = 60\text{ cm}$, $c = 52\text{ cm}$ are three sides of triangle.

Semiperimeter (s):

$$\frac{a + b + c}{2} = \frac{56 + 60 + 52}{2} = \frac{168}{2} = 84$$

$$\text{Area } \Delta = \sqrt{s(s-a)(s-b)(s-c)}$$

$$= \sqrt{84 \times (84 - 56)(84 - 60)(84 - 52)}$$

$$= \sqrt{84 \times 28 \times 24 \times 32} = 1344\text{cm}^2$$

Correct Answer: B

Q.26

(A) 38500 cm^3

circumference of base of cylinder = 110 cm

$$2\pi r = 110$$

$$r = \frac{55}{\pi} \text{ cm} = \frac{35}{2} \text{ cm}$$

CSA of cylinder = 4400 cm^2

$$2\pi rh = 4400$$

$$2\pi \times \frac{55}{\pi} \times h = 4400$$

$$h = \frac{4400}{110} = 40 \text{ cm}$$

volume of the cylinder = $\pi r^2 h$

$$= \frac{22}{7} \times \frac{35}{2} \times \frac{35}{2} \times 40$$

$$= 38500 \text{ cm}^3$$

Correct Answer: A

Q.27

We know that

$$\alpha^2 + \beta^2 = (\alpha + \beta)^2 - 2\alpha\beta$$

From $p(x) = x^2 + px + q$

$$\alpha + \beta = -p \quad \text{and} \quad \alpha.\beta = q$$

$$\text{ther } \alpha^2 + \beta^2 = (-p)^2 - 2.q = p^2 - 2q$$

Correct Answer: A

Q.28(B) 2

$$\sin \theta + \cos \theta = \sqrt{2}$$

Let $\theta = 45^\circ$

$$\sin 45^\circ + \cos 45^\circ = \sqrt{2}$$

$$\sin 45^\circ + \cos 45^\circ = \frac{1}{\sqrt{2}} + \frac{1}{\sqrt{2}} = \frac{2}{\sqrt{2}} = \sqrt{2}$$

$$\tan 45^\circ + \cot 45^\circ = 1 + 1 = 2$$

Correct Answer: B

Q.29 (A) $\frac{5 \pm \sqrt{33}}{4}$

$$2x^2 - 5x + 1 = 0$$

$$a = 2, \quad b = -5, \quad c = 1$$

by quadratic formula

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$x = \frac{-(-5) \pm \sqrt{(-5)^2 - 4 \times 2 \times 1}}{2 \times 2}$$

$$= \frac{(5) \pm \sqrt{25 - 8}}{4} = \frac{5 \pm \sqrt{17}}{4}$$

Correct Answer: A

Q.30 (D) Square

Let A(1,7), B(4,2), C(-1,-1), D(-4,4)

then

$$\text{Side AB} = \sqrt{[(4-1)^2 + (2-7)^2]} = \sqrt{34} \text{ unit}$$

$$\text{Side BC} = \sqrt{[(-1-4)^2 + (-1-2)^2]} = \sqrt{34} \text{ unit}$$

$$\text{Side CD} = \sqrt{[(-4+1)^2 + (4+1)^2]} = \sqrt{34} \text{ unit}$$

$$\text{Side DA} = \sqrt{[(1+4)^2 + (7-4)^2]} = \sqrt{34} \text{ unit}$$

$$\text{Diagonal AC} = \sqrt{[(-1-1)^2 + (-1-7)^2]} = \sqrt{68}$$

$$\text{Diagonal BD} = \sqrt{[(-4-4)^2 + (4-2)^2]} = \sqrt{68}$$

So ABCD is a square.

Correct Answer: D

Q.31 (A) 2 : 1

let a and d are first term and common difference of an A.P.

$$a_4 = 0$$

$$a + 3d = 0$$

$$a = -3d$$

$$\text{ratio} = \frac{a_{14}}{a_9} = \frac{a + 13d}{a + 8d} = \frac{-3d + 13d}{-3d + 8d} = \frac{10}{5} = 2 : 1$$

Correct Answer: A

Q.32 (x - 2) is a factor of P(x) = x³ + 4x² - px + 8

So x = 2 is zero of p(x)

at x = 2,

$$P(2) \Rightarrow (2)^3 + 4(2)^2 - p(2) + 8 = 0$$

$$\Rightarrow 8 + 16 - 2p + 8 = 0.$$

$$\Rightarrow p = 16$$

Correct Answer: A

Q.33 (A) 6

For many solutions

$$\frac{a_1}{a_2} = \frac{b_1}{b_2} = \frac{c_1}{c_2}$$

$$\frac{2}{4} = \frac{3}{k} = \frac{4}{8}$$

$$K = 6$$

Correct Answer: A

Q.34

Distance of A from O is

$$= \sqrt{(12)^2 + (5)^2}$$

$$= \sqrt{169} = 13\text{cm}$$

Correct Answer: B

Q.35 Put $x = 0$

$$\frac{y}{b} = 1$$

$$y = b$$

and Put $y = 0$

$$\frac{x}{a} = 1$$

$$x = a$$

X and Y axis both are perpendicular to A, so.

So Ar. of $\Delta = \frac{1}{2} \times \text{base} \times \text{height}$

$$= \frac{1}{2} \times a \times b = \frac{ab}{2}$$

Correct Answer: D

Q.36(A) 20°

In ΔABC

AD is angle bisector of $\angle A$.

$$\angle A = 180^\circ - (\angle B + \angle C)$$

$$\angle A = 180^\circ - (30^\circ + 70^\circ)$$

$$\angle A = 80^\circ$$

$$\frac{1}{2} \angle A = \angle CAD = \angle BAD = 40^\circ$$

In ΔAEC , $\angle AEC = 90^\circ$

$$\angle CAE = 180^\circ - (\angle ACE + \angle AEC)$$

$$= 180^\circ - (70^\circ + 90^\circ)$$

$$\angle CAE = 20^\circ$$

$$\angle DAC = \angle CAE + \angle DAE = 40^\circ$$

$$20^\circ + \angle DAE = 40^\circ$$

$$\angle DAE = 20^\circ$$

Correct Answer: A

Q.37

In parallelogram, the ratio of adjacent angles

$$\angle A : \angle B = 5 : 4$$

Let $\angle A = 5x$, $\angle B = 4x$

We know that

$$\angle A + \angle B = 180^\circ$$

$$\therefore 5x + 4x = 180^\circ$$

$$x = 20^\circ$$

$$\angle D = \angle B = 4 \times 20^\circ = 80^\circ$$

Correct Answer: B

Q.38 $OA = OB = 13$ cm

$OD = 5$ cm, $OD \perp BD$

BD extend upto point E on circle and join A to E.

AOB is a diameter so, $\angle AED = 90^\circ$ (angle in a semicircle)

In $\triangle BOD$, $\angle D = 90^\circ$

By Pythagoras theorem,

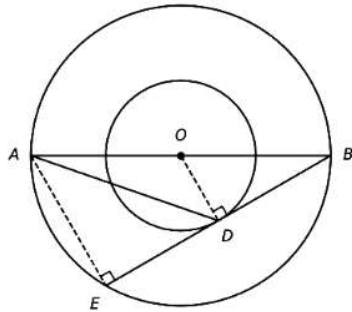
$$BD^2 = OB^2 - OD^2$$

$$BD^2 = (13)^2 - (5)^2$$

$$BD^2 = 144$$

$$BD = 12\text{cm}$$

$OD \perp BE$ and $AE \perp BE$ (By extending BD to E)



so $OD \parallel AE$ and O is the mid point of AB

By Mid point theorem,

$$AE = 2 \times OD = 2 \times 5 = 10\text{cm}$$

$$ED = BD = 12\text{cm}$$

In $\triangle AED$, $\angle E = 90^\circ$

By Pythagoras theorem,

$$AD^2 = AE^2 + ED^2$$

$$= (10)^2 + (12)^2$$

$$= 100 + 144 = 244$$

$$D = \sqrt{244} = 2\sqrt{61} \text{ cm}$$

Correct Answer: C

Q.39 The sides of a triangle are: $a = 13x$, $b = 14x$, $c = 15x$

Perimeter of triangle = 84

$$13x + 14x + 15x = 84$$

$$42x = 84$$

$$x = 2$$

Then sides:

$$a = 26, b = 28, c = 30$$

$$\text{Semi perimeter (s)} = \frac{84}{2} = 42$$

$$\text{Area of } \Delta = \sqrt{42(42 - 26)(42 - 28)(42 - 30)}$$

$$= \sqrt{42 \times 16 \times 14 \times 12} = 336\text{cm}^2$$

Correct Answer: A

Q.40 Radius (r) = 7 cm

Total height (h_{tot}) = 14 cm

$$\text{Height of cone } (h_c) = \frac{14-7}{2} = 7\text{cm}$$

Total volume of Solid = vol. of Cone + vol. of Hemisphere

$$= \frac{1}{3} \pi r^2 h + \frac{2}{3} \pi r^3$$

$$= \frac{1}{3} \pi r^2 (h + 2r)$$

$$= \frac{1}{3} \times \frac{22}{7} \times 7 \times 7 (7 + 14) = 1078 \text{ cm}^3$$

Correct Answer: D

Q.41 $n(S)=36$

Favorable outcomes = $\{(1, 1), (1, 2), (1, 3), (1, 4), (2, 1), (2, 2), (2, 3), (3, 1), (3, 2), (4, 1)\}$

Number of favorable outcomes = 10

$$\text{Probability} = \frac{10}{36} = \frac{5}{18}$$

Correct Answer: A

Q.42 Given equation:

$$a = 1+m^2$$

$$\Rightarrow b = 2mc \quad c = (c^2 - a^2)$$

For equal roots,

$$D=0$$

$$\Rightarrow b^2 - 4ac = 0$$

$$\Rightarrow (2mc)^2 - 4(1+m^2)(c^2 - a^2) = 0$$

$$\Rightarrow 4m^2c^2 - 4(1+m^2)(c^2 - a^2) = 0$$

$$\Rightarrow m^2c^2 = (1+m^2)(c^2 - a^2)$$

$$\Rightarrow m^2c^2 = c^2 - a^2 + m^2c^2 - m^2a^2$$

$$\Rightarrow c^2 = a^2 + m^2a^2$$

$$c^2 = a^2(1+m^2)$$

Correct Answer: A

Q.43 The empirical relationship between the three measures of central tendency is:

$$\text{Mode} = 3\text{Median} - 2\text{Mean}$$

Correct Answer: B

Q.44 By using midpoint formula for AB:

Let C is the midpoint of

$$AB = \left(\frac{-2+2}{2}, \frac{2+8}{2} \right) = (0, 5)$$

Let D is the midpoint of AC =

$$AC = \left(\frac{-2+0}{2}, \frac{2+5}{2} \right) = (-1, 3.5)$$

Let E is the midpoint of BC =

$$BC = \left(\frac{0+2}{2}, \frac{5+8}{2} \right) = (1, 6.5)$$

Correct Answer: A

Q.45 $S_{20} = 400$

$$\Rightarrow \frac{20}{2} [2a + 19d] = 400$$

$$\Rightarrow 10 [2a + 19d] = 400$$

$$\Rightarrow 2a + 19d = 40 \dots (I)$$

$$S_{40} = 1600$$

$$\Rightarrow \frac{40}{2} [2a + 39d] = 1600$$

$$\Rightarrow 20 [2a + 39d] = 1600$$

$$2a + 39d = 80 \dots (II)$$

From eq. (I) & (II):

$$a = 1, d = 2$$

$$S_{10} = \frac{10}{2} [2(1) + 9 \times 2]$$

$$S_{10} = 5[2 + 18]$$

$$S_{10} = 100$$

Correct Answer: B

Q.46 Let the speed of train be = x km/hr

Speed of the car be = y km/hr

Case 1: Distance by train = 400 km

Distance by car = 600 - 400 = 200 km

$$\frac{400}{x} + \frac{200}{y} = \frac{13}{2} \dots \dots \dots (I)$$

Case 2: Distance by train = 200 km

Distance by car = 600 - 200 = 400 km

$$\frac{200}{x} + \frac{400}{y} = 7 \dots \dots \dots (II)$$

From eq. (I) & (II):

$$x = 100 \text{ km/hr and } y = 80 \text{ km/hr}$$

Correct Answer: A

Q.47 For PA and PB are two tangents,

$$\angle OAP = \angle OBP = 90^\circ$$

The sum of all angles of quadrilateral APBO = 360°

$$\angle AOB + \angle OAP + \angle OBP + \angle APB = 360^\circ$$

$$\angle AOB + 90^\circ + 90^\circ + 80^\circ = 360^\circ$$

$$\angle AOB + 260^\circ = 360^\circ$$

$$\angle AOB = 100^\circ$$

Correct Answer: B

Q.48 Radius of larger sphere (r_1) = 3 cm
 Radius of smaller sphere (r_2) = 0.3 cm
 Number of small balls =

$$\frac{\text{Volume of larger sphere}}{\text{Volume of smaller sphere}}$$

$$= \frac{\frac{4}{3}\pi(r_1)^3}{\frac{4}{3}\pi(r_2)^3} = \left(\frac{r_1}{r_2}\right)^3$$

$$= \left(\frac{3}{0.3}\right)^3 = (10)^3 = 1000 \text{ balls}$$

Correct Answer: C

Q.49 $n(S)=13$
 Number of vowels = {A, A, I, A, J, O}
 $n(E)=6$
 Probability = $\frac{6}{13}$

Correct Answer: A

Q.50 $\tan\theta + \sec\theta = m \dots (I)$
 We know that,
 $\sec^2\theta - \tan^2\theta = 1$
 $(\sec\theta - \tan\theta)(\sec\theta + \tan\theta) = 1$
 $(\sec\theta - \tan\theta) \times m = 1$
 $\sec\theta - \tan\theta = \frac{1}{m} \dots (II)$
 Adding eq. (I) and (II):
 $\sec\theta = \frac{m^2 + 1}{2m}$

Correct Answer: A

Biology

Q.51 Statements I, III and IV are correct and II is incorrect and can be corrected as Ribosomes are present in mitochondria and chloroplast (plastids). Both of these organelles contain 70S ribosomes.

Correct Answer: D

Q.52 Assertion is true, but Reason is false and its correct explanation is as follows Mitochondria and chloroplasts are semiautonomous cell organelles, which contain their own DNA and protein synthesising machinery. These arise from pre-existing organelles and their functions are partially controlled by nucleus of the cells and partially by themselves (semiautonomous).

Correct Answer: C

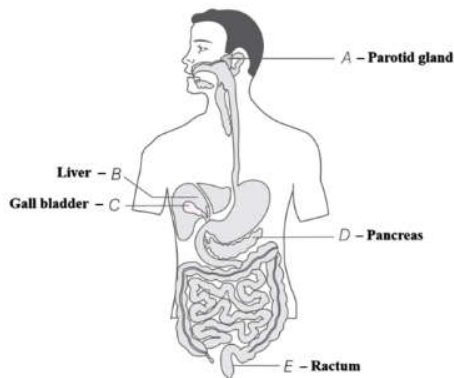
Q.53 Permanent tissues are specialised to perform specific functions. These can be simple or complex. Xylem and phloem are made up of more than one type of cells and work in a coordinated manner, as a unit, to perform specific functions. Thus, xylem and phloem are called complex permanent tissues.

Correct Answer: C

Q.54 Statement in option (b) is incorrect. It can be corrected as the cells secrete fibres of structural proteins called collagen or elastin in all connective tissues except blood. The fibres provide strength, elasticity and flexibility to the tissue. Rest of the statements are correct.

Correct Answer: B

Q.55



Correct Answer: C

Q.56 Air from the atmosphere moves through the parts of respiratory system as follow – Nose, nasopharynx, larynx, trachea, bronchi, bronchioles, alveoli.

Correct Answer: A

- Q.57**
- | | |
|--------------------|---|
| A. Tricuspid valve | 3. Between right atrium and right ventricle |
| B. Bicuspid valve | 1. Between left atrium and left ventricle |
| C. Semilunar valve | 2. Between right ventricle and pulmonary artery |

Correct Answer: C

Q.58 A typical nephron can be divided into two main parts 1. Renal corpuscle (Malpighian body) and 2. Renal tubules

Correct Answer: B

Q.59 NA

Correct Answer: D

Q.60 In sexual reproduction genetic variation is observed. In this mode of reproduction, gametes of two parents (opposite sex) having qualitatively different genetic composition participate in the reproductive process, (i.e. fusion of male and female gametes). This gives rise to a new individual having an entirely new genetic makeup.

Correct Answer: B

Mental Ability

Q.61 (C)

a _ b c _ a _ b c d a _ c c d _ b c d _

a a b c d

a b b c d

a b c c d

a b c d d

So, a d b b a d is correct option.

Correct Answer: C

Q.62 (B)

256 = red colour chalk

589 = green colour flower

245 = white colour chalk

5 - Colour

2 - Chalk

4 - White

Correct Answer: B

Q.63 (D)

$\Rightarrow 8 + 2^2 = 12$ (Add square of primes)

$\Rightarrow 12 + 3^2 = 21$

$\Rightarrow 21 + 5^2 = 46$

$\Rightarrow 46 + 7^2 = 95$

$\Rightarrow 95 + 11^2 = 216$

Correct Answer: D

Q.64 (A)

$\Rightarrow 1^3 + 2 = 3$

$\Rightarrow 2^3 + 2 = 10$

$\Rightarrow 3^3 + 2 = 29$

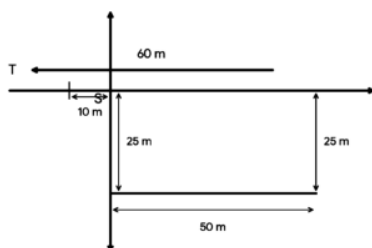
$\Rightarrow 4^3 + 2 = 66$

$\Rightarrow 5^3 + 2 = 127$

$\Rightarrow 6^3 + 2 = 218$

Correct Answer: A

Q.65 (A)



Correct Answer: A

Q.66 (B)

HEATAR

COOLER:

H (+3) $\rightarrow$ K

C (+3) $\rightarrow$ F

E (-3) $\rightarrow$ B

O (-3) $\rightarrow$ L

A (+3) $\rightarrow$ D

O (+3) $\rightarrow$ R

T (-3) $\rightarrow$ Q

L (-3) $\rightarrow$ I

E (+3) $\rightarrow$ H

E (+3) $\rightarrow$ H

R (-3) $\rightarrow$ O

R (-3) $\rightarrow$ O

Correct Answer: B

Q.67 (D)

All potassium, sodium & lithium are alkali metals.

Correct Answer: D

Q.68 (b) 50

COVER

$$(3+15+22+5+18)=63$$

BASIS

$$(2+1+19+9+19)=50$$

Correct Answer: B

Q.69 (C) 18

$$18 \div 6 \times 9 - 3 + 2 = ?$$

Convert:

$$\Rightarrow 18 - 6 + (9 \div 3) + 2$$

$$\Rightarrow 18 - 6 + (3 \times 2) = 18 - 6 + 6 = 18$$

Correct Answer: C

Q.70 (D) Great-grandson

B is brother of A

C is mother of A $\rightarrow$ C is also mother of B

D is father of C $\rightarrow$ D is maternal grand father of B

E is mother of D $\rightarrow$ E is great grandmother of B

SO B is great grandson of E

Correct Answer: D

Q.71 (A) Saturday

2000 is leap year, so 1 Jan 2000 is Saturday

$$\text{Day} = \frac{\text{Date} + \text{Month code} + \text{year code} + \text{leap year code} + \text{century code}}{7}$$

$$\frac{(1+0+0+0+6)}{6} \Rightarrow \text{for leap year } \frac{7-1}{7} = \frac{6}{7}$$

So, 6 is saturday.

Correct Answer: A

Q.72 (A) $3:16\frac{4}{11}$ PM

Hour hand and minute hand coincide at 3 : 15 something there is 15 min spare gain over hour hand by minute hand.

$$\text{The rate of gain is } \frac{60}{55} = \frac{12}{11} \text{ min per space}$$

$$\text{Time} = 15 \times \frac{12}{11} = \frac{180}{11} = 16\frac{4}{11} \text{ min}$$

$$\text{So Time } 3:16\frac{4}{11} \text{ PM}$$

Correct Answer: A

Q.73 (b) Only II follows

because All roses are not red.

Correct Answer: B

Q.74 (a) 2, 5, 1, 4, 3

Seed $\rightarrow$ Sapling $\rightarrow$ Plant $\rightarrow$ Flower $\rightarrow$ Fruit.

Correct Answer: A

Q.75(C) 1

From (i) and (iii) 2 is opposite to 3.

From (i) and (iv) 4 is opposite to 6.

So, 5 is opposite to 1.

Correct Answer: C