S.No.:01SK_ABCDEFGHIJKLM_27825

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REASONING & APTITUDE

COMPUTER SCIENCE & IT

Date of Test : 27/08/2025

ANSWER KEY ➤

1.	(b)	7.	(b)	13.	(c)	19.	(b)	25.	(a)
2.	(a)	8.	(a)	14.	(d)	20.	(b)	26.	(c)
3.	(d)	9.	(d)	15.	(a)	21.	(b)	27.	(b)
4.	(b)	10.	(b)	16.	(c)	22.	(b)	28.	(d)
5.	(c)	11.	(b)	17.	(b)	23.	(b)	29.	(b)
6.	(c)	12.	(c)	18.	(b)	24.	(a)	30.	(d)

DETAILED EXPLANATIONS

1. (b)

Let the distance between start point and end point be D km

$\therefore$ According to statement of question,

$$\frac{x}{10}-\frac{x}{15}=2$$

$$x = 60 \text{ km}$$

By travelling at 10 km/h he reaches at 1 pm so, it takes 6 hour to cover 60 km and hence he started at 7 am; therefore, in order to cover the distance by 12 noon. i.e. in 5 hours he should travel at 12 kmph.

2. (a)

According to given data,

$$20 \times t + 12(10 - t) = 150$$

$$8t + 120 = 150$$

$$t = \frac{30}{8}=\frac{15}{4}$$

The ratio of distance,

$$20\times\frac{15}{4} : 12\times\left(10-\frac{15}{4}\right)$$

$$75 : 75$$

$$1 : 1$$

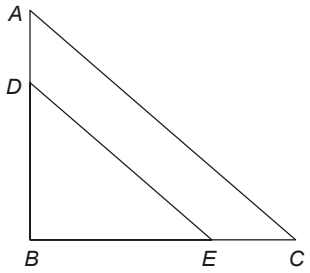
3. (d)

Since $\left(x-\frac{1}{x}\right) = 3\left(x-\frac{1}{x}\right)^2 = x^2+\frac{1}{x^2}-2=9$ leading to $x^2+\frac{1}{x^2}=11$

$$\left(x^3-\frac{1}{x^3}\right) = \left(x-\frac{1}{x}\right)\left(x^2+\frac{1}{x^2}+1\right)=3\times12=36$$

4. (b)

ΔABC is similar to ΔDBE



$\Rightarrow$ If $DE = 0.65\ AC$

$DB = 0.65\ AB$

$BE = 0.65\ BC$

$$\text{Initially area} = \frac{1}{2}\times AB\times BC = 34 \text{ cm}^2$$

$$\text{Changed area} = \frac{1}{2}\times BE\times DB=\frac{1}{2}\times0.65AB\times0.65BC$$

$$=\frac{1}{2}\times(0.65)^2\times AB\times BC$$

$$= (0.65)^2 \times 34 = 14.365 \text{ cm}^2$$

5. (c)

Let the digits are x and y

According to given data,

$$10x + y - (10y + x) = x + y$$
$$9x - 9y = x + y$$
$$8x = 10y$$
$$4x = 5y$$
$$x = 5,$$
$$y = 4$$

square of sum of digits $= (4 + 5)^2 = 81$

6. (c)

L.C.M of 5, 6, 7, 8 = 840

$\therefore$ Required number is of the form $840k + 3$

Least value of k for which $(840k + 3)$ is divisible by 9 is $k = 2$.

$\therefore$ Required number $= 840 \times 2 + 3 = 1683$

7. (b)

$71 - 5 = 66$; $66 + 9 = 75$;

$70 + 9 = 79$; $74 + 9 = 83$

$75 - 5 = 70$; $79 - 5 = 74$

8. (a)

Let the weight of empty soda bottle is x gm and of soda of fully filled bottle is y gm

$$x + y = 1600$$
$$x + \frac{1}{3}y = 900$$

From here, $x = 550$

$y = 1050$

Weight of empty soda bottle is 550 gm.

9. (d)

Minimum number of chocolates are possible when he purchase maximum number of costliest chocolate.

Thus, $2 \times 5 + 5 \times 2 = 20$

$10 \times 10 = 100$

$\Rightarrow$Total number of chocolates $= 10 + 5 + 2 = 17$

10. (b)

We have

$$\frac{2x}{1 + \dfrac{1}{\dfrac{(1-x)+x}{1-x}}} = 1$$

$$\frac{2x}{1 + (1 - x)} = 1$$

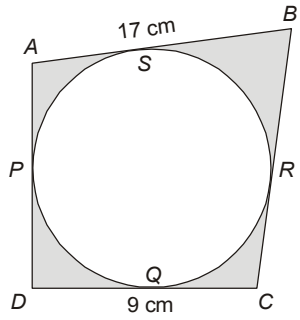
$$2x = 1 + 1 - x$$

$$x = \frac{2}{3}$$

11. (b)

A very simple question!

Using the property that the length of a tangents from an external point to thsame circle are equal in length, we can write



$$BS = BR;$$
$$CR = CQ;$$
$$DQ = DP;$$
$$AP = AS$$
$$AB + BC + CD + DA = 17 + (BR + RC) + 9 + (PD + PA)$$
$$= 26 + (BS + SA) + (CQ + DQ)$$

(replacing BR with BS; AP with AS; DP with DQ and CR with CQ being equal)

$$= 26 + 17 + 9 = 52 \text{ cm}$$

12. (c)

$$C = \frac{A+D}{2},\ D > B > C$$

$$B = \frac{A+E}{2}$$

$$A + D = 2C$$

$$A + E = 2B$$

Since $B > C \Rightarrow E > D$

$$C < B < D < E$$

Since C is average of A and D, so $A < C$

$\Rightarrow$ The correct sequence is $A < C < B < D < E$

The middle number is B.

13. (c)

When we want to paint the surfaces of the cube, we are working with the total surface area of all 6 faces. In case of cube of 125 cc volume, each side is 5 cm long. This means that 2 liters of paint is required to cover an area of 6 × (5 × 5) = 150 square cm.

In the second case, the total surface area to be covered is the total surface area of 125 cubes each with a volume of 1 cc i.e. a cube with each side 1 cm long. Total area to be painted in this case is 125 × (1 × 1) = 750 square cm. Additional area to be painted is 750 – 150 = 600 square cm which is 4 times the earlier area. This means that we need 4 × 2 liters = 8 liters as additional quantity of paint required to be used i.e. option (c).

14. (d)

If B is the number of boys and G is the number of girls in the class, we can write a linear equation based on the given data

i.e. $71B + 83G = 80 \times (B + G)$

i.e. $G = 3B$

i.e. the number of girls is 3 times the number of boys in the class.

Observation: Since the average is closer to the score of girls than the score of boys, we can eliminate option 'b' and 'c'.

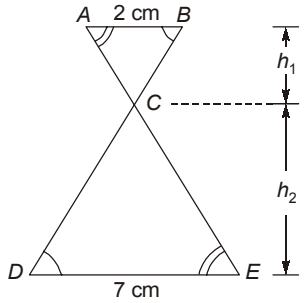
15. (a)

Given $AB \parallel DE$

$\Rightarrow$ $\angle B = \angle D$

and $\angle A = \angle E$

$\therefore$ $\Delta ABC \sim \Delta EDC$ (AAA similarity)



$\Rightarrow$ $\frac{h_1}{h_2} = \frac{AB}{DE} = \frac{2}{7}$

and $h_1 + h_2 = 7.2$ cm (given)

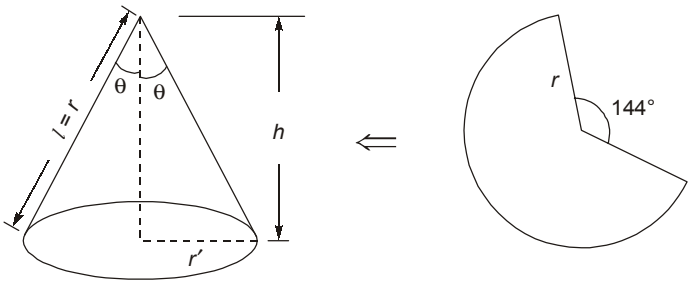
$\therefore$ $h_1 = 1.6$ cm and $h_2 = 5.6$ cm

$$\text{Area of } \Delta ABC = \frac{1}{2} \times 2 \times 1.6 = 1.6 \text{ cm}^2$$

$$\text{Area of } \Delta EDC = \frac{1}{2} \times 7 \times 5.6 = 19.6 \text{ cm}^2$$

$\therefore$ Sum of areas of ΔABC and ΔEDC = 21.2 cm^2

16. (c)



Height of cone formed be h

Slant height of cone so formed = radius of given circle

$\Rightarrow$ $l = r$

Now circumference of base of cone = Circumference of given sector of circle

$\Rightarrow$ $2\pi r' = 2\pi r \times \frac{360° - 144°}{360°}$

$\Rightarrow$ $r' = \frac{3}{5}r$

$$\text{Now vertex angle} = 2\theta = 2\sin^{-1}\left[\frac{r'}{1}\right] = 2\sin^{-1}\left[\frac{3}{5}\right]$$

17. (b)

Let total number of person = n

Total number of handshakes $= {}^{n}C_2$

$$= \frac{n(n-1)}{2} = 78$$

$$n^2 - n - 156 = 0$$

$$n = 13, -12$$

$\because$ n can't be negative, $n = 13$

18. (b)

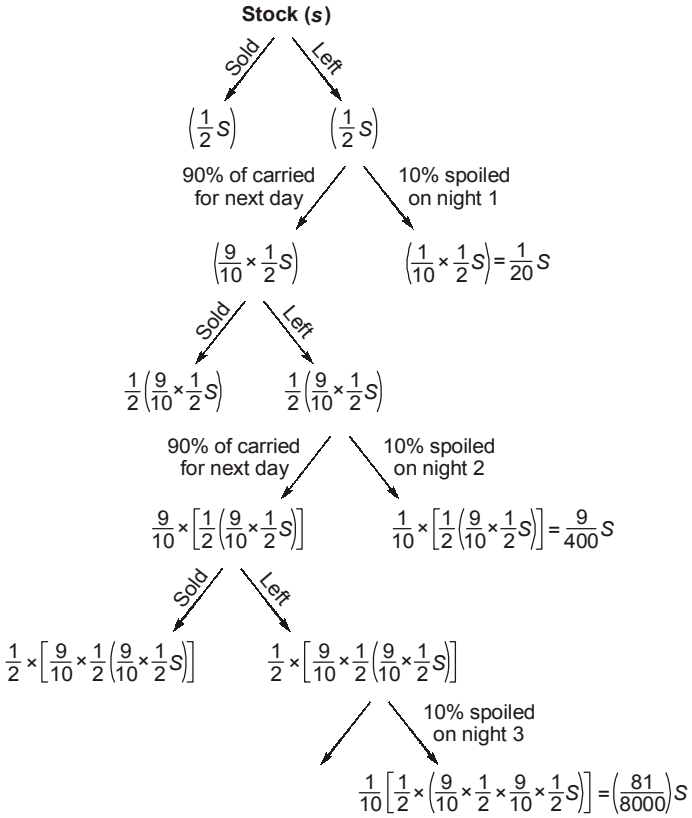
$$P = \frac{3}{2}\times\frac{4}{3}\times\frac{5}{4}\times\frac{6}{5}\times\_\_\_\_\_\frac{99}{98}\times\frac{100}{99} = \frac{100}{2} = 50$$

$$Q = \frac{1}{2}\times\frac{2}{3}\times\frac{3}{4}\times\_\_\_\_\_\frac{98}{99}\times\frac{99}{100} = \frac{1}{100}$$

$$\frac{P}{Q} = 5000$$

19. (b)

Let the stock that the seller has be 'S'. Then according to question, he sells half the stock and from the rest half 10% gets spoiled in overnight and then he is left only with the 90% of the half of the stock to be carried over for the next day.



Then according to question.

$$\frac{1}{20}S+\frac{9}{400}S+\frac{81}{8000}S = 1983$$

$$S = 24000$$

20. (b)

Let Shahid's salary be S and Meera's salary be M.

According to question, $S + M = 28000$ ...(i)

Then Shahid's salary increases by 25%, the new salary becomes 1.25 S and Meera's salary increases by 12.5% then new salary become 1.125% M.

Also it is given that new salary of Meera is 120% of new salary of Shahid.

$$1.125\,M = 1.20\,(1.25)\,S$$

$$M = \frac{120\times125\times1000\times S}{100\times100\times1125} = \frac{4}{3}S$$

From equation (i),

$$\frac{4}{3}S+S = 28000$$

$$S = 12000$$

$\therefore$ New salary of Shahid $= 1.25\,S = 1.25 \times 12000$

$= ₹15000$

21. (b)

A 4 O'clock, the hands of the watch are 20 minute spaces apart.

To be in opposite directions, they must be 30 min spaces apart.

$\therefore$ Minute hand will have to gain 50 minute spaces

55 minute spaces are gained in 60 min

50 minute space are gained in $\left(\frac{60}{55}\times50\right)$ min or $54\frac{6}{11}$ min

$\therefore$ Required time $= 54\frac{6}{11}$ min past 4

The answer is (b).

22. (b)

PQR is an isosceles triangle

$\therefore \quad \angle RPQ = \angle RQP$

Also $\angle RPQ + \angle RQP = (180 - 64)°$

$\Rightarrow \quad 2\angle RPQ = 116°$

$\Rightarrow \quad \angle RQP = 58°$

RQS is a right isosceles triangle; hence

$$\angle RQS = \angle RSQ = \frac{(180-90)°}{2} = 45°$$

Note that

$$\angle RQP + \angle RQS + \angle SQT = 180°$$
$$\Rightarrow \quad 58° + 45° + \angle SQT = 180°$$
$$\Rightarrow \quad \angle SQT = 77°$$

SQT is a right triangle, hence

$$\angle QST = 90 - 77 = 13°$$

23. (b)

$$\text{Man} \times \text{Day} = \text{Man} \times \text{Day}$$
$$20 \times 30 = 600$$

Let workers leave after x days then

$$20x + 15(35 - x) = 600$$
$$20x + 525 - 15x = 600$$
$$5x = 75$$
$$x = 15$$

24. (a)

For the largest right circular cone to be fitted in a cube, the base of the cone will touch all the vertical faces of the cube.

$\therefore$ The diameter of base of cone = Side of cube = 20 cm

$\therefore$ Radius = 10 cm

Height = 20 cm

$$\text{Volume} = \frac{\pi r^2 h}{3} = \frac{1}{3} \times \pi \times 10^2 \times 20$$
$$= 2094.39 \text{ cm}^3$$

25. (a)

Suppose he bought 2 kg, 4 kg, and 3 kg of three varieties

$$\text{Cost price of 9 kg} = 2 \times 50 + 4 \times 20 + 3 \times 30$$
$$= \text{Rs } 270$$
$$\text{Selling price of 9 kg} = 9 \times 33 = \text{Rs } 297$$

$\therefore$ $$\%\text{ profit} = \frac{27}{270} \times 100 = 10\%$$

26. (c)

As water of a river flows, similarly water of a pool is stagnant. Option (c) is the most appropriate option. Though the other three options are close, but they are not used while talking about a still body of water like a pool.

27. (b)

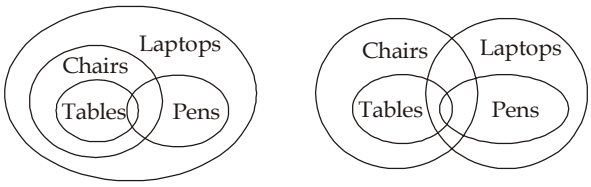
$$(1+3+5+7+....+50^{th}\text{ term})+\left(\frac{1}{2}+\frac{1}{6}+\frac{1}{12}+\frac{1}{20}+....\right)$$

$$= (1+3+5+7+9+....)+\left(\frac{1}{1\times2}+\frac{1}{2\times3}+\frac{1}{3\times4}+....\right)$$

$$= \frac{50}{2}[2\times1+(50-1)\times2]+\left[\frac{1}{1}-\frac{1}{2}+\frac{1}{2}-\frac{1}{3}+\frac{1}{3}-\frac{1}{4}+\frac{1}{50}-\frac{1}{51}\right]$$

$$= 25\times100+\left(1-\frac{1}{51}\right) = 2500\frac{50}{51}$$

28. (d)



29. (b)

Female population below poverty line for Punjab = 2.1 million

Let the male population below poverty line for Punjab be x million

Then $5 : 6 = x : 2.1$

$$\Rightarrow \quad x = \frac{2.1\times5}{6} = 1.75 \text{ million}$$

$\therefore$ Population between poverty line for Punjab = (2.1 + 1.75) million = 3.85 million

Let the population above poverty line for Punjab be y million.

Since, 35% of population of Punjab is below poverty line, therefore, 65% of the total population of Punjab is above poverty line i.e. the ratio of population below poverty line to that above poverty line for Punjab is 35 : 65.

$\therefore \quad 35 : 65 = 3.85 : y$

$$\Rightarrow \quad y = \frac{65\times3.85}{35} = 7.15$$

$\therefore$ Population above poverty line for Punjab = 7.15 million.

So, male population above poverty line for Punjab = $\left(\frac{6}{13}\times7.15\right)$ million = 3.3 million

The answer is (b).

30. (d)

There is an increase in gold reserves during the years 1982-1983, 1984-1985, 1986-1987, 1987-1988 as compared to previous year as shown by bar-graph.

The percentage increase in reserves during these years compared to previous year are:

$$\text{For 1982-1983} = \left[\frac{(3720-2640)}{2640}\times 100\right]\% = 40.91\%$$

$$\text{For 1984-1985} = \left[\frac{(3360-2520)}{2520}\times 100\right]\% = 33.33\%$$

$$\text{For 1986-1987} = \left[\frac{(4320-3120)}{3120}\times 100\right]\% = 38.46\%$$

$$\text{For 1987-1988} = \left[\frac{(5040-4320)}{4320}\times 100\right]\% = 16.67\%$$

Clearly, the percentage increase over previous year is highest for 1982-1983.

The answer is (d).

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