

OPEN TEST SOLUTION

1. (D) Warehouse is place to store grains and a dam is place to store water.

2. (C) $\frac{ADFG}{+10} \quad \frac{KNPQ}{+10}$

Similarly, $\frac{DGLJ}{+10} \quad \frac{NQST}{+10}$

3. (C) Second is the square of the first and option (C) follows the same.

4. (A) **Mother-in-law** is a female character.

5. (B) Except **XYZ**, others have vowels.

6. (A) $440 \Rightarrow (21)^2 - 1$

$$122 \Rightarrow (11)^2 + 1$$

$$170 \Rightarrow (13)^2 + 1$$

$$485 \Rightarrow (22)^2 + 1$$

7. (D) Tingling \rightarrow Topper \rightarrow Traction \rightarrow Train \rightarrow Tumbler.

8. (C) According to Aman

dates of match = 27, 28 and 29 May

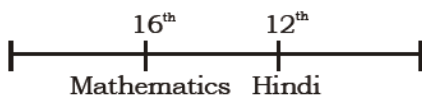
but according to Sumit,

dates of match = 23, 24, 25, 26 and 27 May

So, the common date = 27 May

Hence, match will be held on **27 May**.

9. (A) $\leftarrow \dots 5 \dots \rightarrow$



Hence, Required number of books

$$= 16 + 6 + 12 - 1$$

$$= 33$$

10. (D) Pain

11. (C)

win note grain broken **banking**
 \downarrow \downarrow \downarrow \downarrow \downarrow
 3 letters 4 letters 5 letters 6 letters 7 letters

12. (C) $\frac{KMnO}{+2} \quad \frac{qRsTu}{+2} \quad \frac{WxYzA}{+2} \quad \frac{cDeFg}{+2}$

13. (C) $\frac{0}{+4} \quad \frac{4}{+6} \quad \frac{10}{+8} \quad \frac{18}{+10} \quad \frac{28}{+12} \quad \frac{40}{+14}$

14. (D) $40 + 4 \div 625 \times 5 - 10$
 Change the symbol, as per given details,
 $40 \times 4 - 625 \div 5 + 10 = 45$

15. (B) $[(4 + 5) - (1 + 1)] \times 3 = 21$

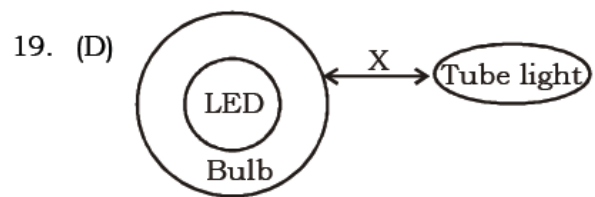
$$[(5 + 9) - (3 + 4)] \times 3 = 21$$

$$[(5 + 5) - 4] \times 3 = 18$$

16. (D) $\frac{UNCOVER}{21+6=27} \quad \frac{FMXLEVI}{14+13=27} \quad \frac{3+24=27} \quad \frac{15+12=27} \quad \frac{22+5=27} \quad \frac{5+22=27} \quad \frac{18+9=27}$

Similarly, $\frac{GRK}{7+20=27} \quad \frac{TIP}{18+9=27} \quad \frac{11+16=27}$

18. (B)



I True

II False

20. (C) 21. (C)

22. (A) 23. (A)

24. (A) 25. (A)

51.

(C) A.T.Q,

$$\begin{array}{l} A \rightarrow 18 \\ B \rightarrow 27 \\ C \rightarrow 20 \end{array} \left. \vphantom{\begin{array}{l} A \\ B \\ C \end{array}} \right\} 540 \left. \vphantom{\begin{array}{l} 30 \\ 20 \\ 27 \end{array}} \right\}$$

Now,

work done by A, B and C in 2 days

$$= (30 + 20) + (30 + 27) = 107 \text{ units}$$

and, work done in 10 days

$$= 107 \times 5 = 535 \text{ units}$$

Then,

time taken to do remaining 5 units work

$$= \frac{5}{50} = \frac{1}{10} \text{ days}$$

\therefore Total time taken

$$= 10 + \frac{1}{10} = 10 \frac{1}{10} \text{ days}$$

52.

(C) Weight of teacher = 42 kg + 35 \times 800 gm

$$= 42 \text{ kg} + 28 \text{ kg} = 70 \text{ kg}$$

53.

(C) If $A : B : C = \frac{1}{4} : \frac{1}{5} : \frac{1}{6} = 15 : 12 : 10$

$$\therefore \text{C's share} = \frac{10}{37} \times 1665 = ₹450$$

Now,

If $A : B : C = 4 : 5 : 6$

$$\therefore \text{C's share} = \frac{6}{15} \times 1665 = ₹666$$

$$\therefore \text{Required amount} = 666 - 450 = ₹216$$

17. (B)

54.

(A) Let total books = x
then,
total C.P. = $3x$

$$\therefore \text{Total S.P.} = \frac{x}{3} \times 4 + \frac{x}{2} \times 5 + \frac{x}{6} \times 3$$

$$= \frac{13x}{3}$$

So,

$$\text{profit percent} = \frac{\frac{13x}{3} - 3x}{3x} \times 100$$

$$= \frac{4x}{9x} \times 100 = 44\frac{4}{9}\%$$

55.

(A) Let the maximum marks = x

$$\text{Pass marks} = x \times \frac{20}{100} + 20 = \frac{x}{5} + 20$$

$$\text{IInd student get} = x \times 49\% = x \times \frac{49}{100}$$

Now,

$$\left(\frac{x}{5} + 20\right) \times \frac{100 + 22.5}{100} = x \times \frac{49}{100}$$

$$\Rightarrow \left(\frac{x}{5} + 20\right) \times \frac{122.5}{100} = \frac{x + 49}{100}$$

$$\Rightarrow x + 100 = 2x$$

$$\Rightarrow 2x - x = 100$$

$$\Rightarrow x = 100$$

56.

(C) Distance = $\frac{s_1 \times s_2}{(s_1 - s_2)} \times \text{time}$

$$= \frac{40 \times 96}{(96 - 40)} \times \left(2 + \frac{6}{60}\right) = \frac{40 \times 96}{56} \times \frac{21}{10}$$

$$= 144 \text{ km}$$

57.

(B) A.T.Q,

$$\text{Ratio of their profit} = 200000 \times 12 : 250000 \times 8 : 50000 \times 6 = 24 : 20 : 3$$

Now,

Profit of Naveen

$$= \frac{(200000 - 100000)}{47} \times 24 = ₹51063.8$$

58.

(D) A.T.Q,

| | | | |
|-------|---------|-------|----------|
| | Alcohol | Water | |
| Ist | = 5 | : 1 | = 6 |
| IInd | = 3 | : 2 | = 5 |
| IIIrd | = 4 | : 3 | = 7 |
| | | | × 1 × 35 |
| | | | × 2 × 42 |
| | | | × 3 × 30 |

Now,

| | | |
|---------------|---------|-------|
| | Alcohol | Water |
| Ist | = 175 | : 35 |
| IInd | = 252 | : 168 |
| IIIrd | = 360 | : 270 |
| Final mixture | = 787 | : 473 |

59.

(B) Let the speed of the boat be x km/hr and, the speed of the stream be y km/hr

A.T.Q,

$$\frac{27}{x+y} + \frac{36}{x-y} = 9 \dots\dots\dots (i)$$

$$\text{and, } \frac{36}{x+y} + \frac{24}{x-y} = 8 \dots (ii)$$

On solving, we get

$$x + y = 9$$

$$x - y = 6$$

Then,

$$\text{Speed of stream } (y) = \frac{9-6}{2} = 1.5 \text{ km/hr}$$

60.

(A) We know that,

$$\text{Amount} = P \left[1 + \frac{r}{100}\right]^n$$

A.T.Q,

$$64000 \left[1 + \frac{r}{100}\right]^3 = 68921$$

$$\Rightarrow \left(1 + \frac{r}{100}\right)^3 = \left(\frac{41}{40}\right)^3$$

$$\Rightarrow 1 + \frac{r}{100} = \frac{41}{40}$$

$$\Rightarrow r = 2.5\%$$

$$\therefore \text{Rate of interest} = 2.5\%$$

61.

(B) A.T.Q,

| Principal | Amount | Interest |
|---|-----------------------------|-----------|
| $72 \begin{matrix} \nearrow 9 \times 8 \\ \searrow 8 \times 9 \end{matrix}$ | $11 \times 9 \rightarrow 3$ | |
| 72 | $13 \times 8 \rightarrow 4$ | |
| 72 | $99 \rightarrow 27$ |) 5 units |
| 72 | $104 \rightarrow 32$ | |

$$\therefore \text{Required rate} = \frac{5 \times 100}{3 \times 72} = 2.31\%$$

62.

(A) Let the speed of the vehicle be v km/h and time t minutes

Then, distance = $v \times t$

Now, $(v+3)(t-20) = vt$

$$\Rightarrow vt + 3t - 20v - 60 = vt$$

$$\Rightarrow 3t - 20v = 60 \dots\dots (i)$$

and, $(v-3)(t+30) = vt$

$$\Rightarrow vt + 30v - 3t - 90 = vt$$

$$\Rightarrow 30v - 3t = 90 \dots\dots\dots (ii)$$

On solving equation (i) and (ii), we get

$$10v = 150$$

63.

(B) Here,

$$90 = 9 \times 10$$

$$\text{and, } 72 = 8 \times 9$$

In such type of questions smaller number becomes the answer

$$\begin{aligned} \therefore \sqrt{90 - \sqrt{90 - \sqrt{90}}} - \sqrt{72 - \sqrt{72 - \sqrt{72}}} \\ = 9 - 8 = 1 \end{aligned}$$

64.

(B) Let $x^{12} = P$

A.T.Q,

$$\frac{P^2 + 1}{P} = 7$$

$$\Rightarrow P + \frac{1}{P} = 7$$

$$\therefore \frac{x^{72} + 1}{x^{36}} = \frac{P^6 + 1}{P^3}$$

$$\Rightarrow P^3 + \frac{1}{P^3}$$

Now,

$$\left(P + \frac{1}{P}\right)^3 = (7)^3$$

$$\Rightarrow P^3 + \frac{1}{P^3} + 3\left(P + \frac{1}{P}\right) = 343$$

$$\Rightarrow P^3 + \frac{1}{P^3} = 343 - 21$$

$$\therefore \frac{x^{72} + 1}{x^{36}} = 322$$

65.

(C) A.T.Q,

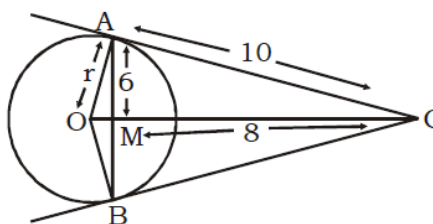
$$\frac{0.7 \times 0.7 \times 0.7 + 0.3 \times 0.3 \times 0.3 + 0.63}{0.7 \times 0.7 + 0.3 \times 0.3 - 0.42}$$

$$= \frac{(0.7)^3 + (0.3)^3 + 3(0.3)(0.7)(0.7 + 0.3)}{(0.7)^2 + (0.3)^2 - 2(0.7)(0.3)}$$

$$= \frac{[0.7 + 0.3]^3}{[0.7 - 0.3]^2} = \frac{1}{.16} = 6.25$$

66.

(C)



Here, $\triangle OAC \sim \triangle AMC$

$$\Rightarrow \frac{OA}{AM} = \frac{AC}{MC}$$

$$\Rightarrow \frac{r}{6} = \frac{10}{8}$$

$$\Rightarrow r = \frac{15}{2}$$

Then,

Diameter = $2 \times$ radius

$$= 2 \times \frac{15}{2} = 15\text{cm}$$

67.

(C) We know that,

interior angle + exterior angle = 180°

A.T.Q,

$$9 \times \text{exterior angle} = 180^\circ$$

$$\Rightarrow \text{exterior angle} = 20^\circ$$

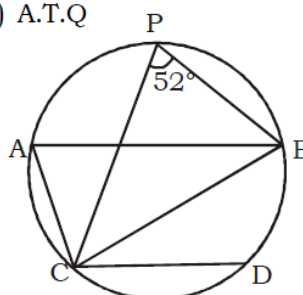
Then,

$$n = \frac{360^\circ}{\text{exterior angle}} = \frac{360^\circ}{20^\circ} = 18$$

\therefore Number of sides of polygon = 18

68.

(C) A.T.Q



∴ AB is the diameter of circle
 So, $\angle ACB = 90^\circ$ (angle made in semi-circle)
 and $AB \parallel CD$

∴ $\angle ACD + \angle BAC = 180^\circ$
 and $\angle BAC = \angle BPC = 52^\circ$
 ∴ $\angle BCD = 180^\circ - 90^\circ - 52^\circ = 38^\circ$

69.

(B) Let length and breadth are x and y respectively.

A.T.Q

$$xy = 240 \dots\dots\dots (i)$$

$$\text{and } 2(x + y) = 52$$

$$\Rightarrow x + y = 26 \dots\dots\dots (ii)$$

Squaring both sides of equation (ii), we get,

$$(x + y)^2 = (26)^2$$

$$\Rightarrow x^2 + y^2 + 2xy = 676$$

$$\Rightarrow x^2 + y^2 + 2(240) = 676$$

$$\Rightarrow x^2 + y^2 = 676 - 480$$

$$\Rightarrow x^2 + y^2 = 676 - 480$$

$$\Rightarrow x^2 + y^2 = 196$$

$$\Rightarrow \sqrt{x^2 + y^2} = 14\text{m}$$

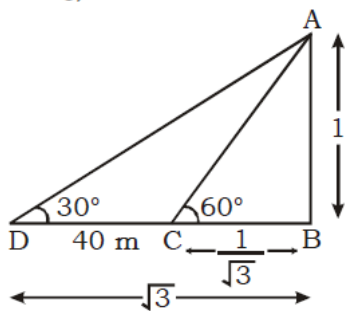
Hence, length of diagonal = 14 meter

70.

$$\begin{aligned} (D) & 2(\sin^6 \alpha + \cos^6 \alpha) \\ &= 2[(\sin^2 \alpha + \cos^2 \alpha)^3 - 3\sin^2 \alpha \cos^2 \alpha (\sin^2 \alpha + \cos^2 \alpha)] \\ &= 2[1 - 3\sin^2 \alpha \cos^2 \alpha] = 2 - 6\sin^2 \alpha \cos^2 \alpha \\ \text{and, } & 3[\sin^4 \alpha + \cos^4 \alpha] \\ &= 3[(\sin^2 \alpha + \cos^2 \alpha)^2 - 2\sin^2 \alpha \cos^2 \alpha] \\ &= 3 - 6\sin^2 \alpha \cos^2 \alpha \\ \text{and, } & 4(\sin^2 \alpha + \cos^2 \alpha) = 4 \\ \text{Then, required value} \\ &= 2 - 6\sin^2 \alpha \cos^2 \alpha - 3 + 6\sin^2 \alpha \cos^2 \alpha + 4 \\ &= 2 - 3 + 4 = 3 \end{aligned}$$

71.

(A) A.T.Q,



Length of DC

$$\left(\sqrt{3} - \frac{1}{\sqrt{3}}\right) \text{ units} = 40$$

$$\left(\frac{2}{\sqrt{3}}\right) \text{ units} = 40$$

Then, width of the river

$$BC = \left(\frac{1}{\sqrt{3}}\right) \text{ units} = \frac{40}{2} = 20 \text{ m}$$

72.

$$(D) \frac{\text{ar}(\Delta ABC)}{\text{ar}(\Delta DEF)} = \left(\frac{h_1}{h_2}\right)^2 = \frac{256}{81}$$

$$\Rightarrow \frac{h_1}{h_2} = \frac{16}{9}$$

$$\Rightarrow h_1 : h_2 = 16 : 9$$

73.

(B) Given that

$$m_1 = 2 - \sqrt{3} \quad m_2 = 2 + \sqrt{3}$$

If the angle between lines is θ

$$\text{then, } \tan \theta = \left| \frac{m_1 - m_2}{1 + m_1 m_2} \right| = \left| \frac{2 - \sqrt{3} - 2 - \sqrt{3}}{1 + 1} \right|$$

$$\Rightarrow \tan \theta = \frac{2\sqrt{3}}{2} = \sqrt{3}$$

$$\Rightarrow \theta = 60^\circ$$

74.

(D) According to question

⇒ Percentage increase

$$= \left(\frac{3360 - 2520}{2520} \right) \times 100$$

$$= \frac{840}{2520} \times 100$$

$$= \frac{100}{3} \% = 33 \frac{1}{3} \%$$

75.

(C) According to question

$$\text{For } 1992-93 = \left[\frac{(3720 - 2640)}{2640} \times 100 \right] \%$$

$$= 40.91\%$$

$$1994 - 95 = \left[\frac{(3360 - 2520)}{2520} \times 100 \right] \%$$

$$= 33.33\%$$

$$1996 - 1997 = \left[\frac{(4320 - 3120)}{3120} \times 100 \right] \%$$

$$= 38.46\%$$

$$1997 - 1998 = \left[\frac{(5040 - 4320)}{4320} \times 100 \right] \%$$

$$= 16.67\%$$

| ANSWER | | | | | | | |
|--------|---|----|---|----|---|-----|---|
| 1 | D | 26 | C | 51 | C | 76 | C |
| 2 | C | 27 | C | 52 | C | 77 | B |
| 3 | C | 28 | C | 53 | C | 78 | C |
| 4 | A | 29 | B | 54 | A | 79 | B |
| 5 | B | 30 | C | 55 | A | 80 | D |
| 6 | A | 31 | A | 56 | C | 81 | C |
| 7 | D | 32 | C | 57 | B | 82 | C |
| 8 | C | 33 | D | 58 | D | 83 | D |
| 9 | A | 34 | C | 59 | B | 84 | D |
| 10 | D | 35 | D | 60 | A | 85 | A |
| 11 | C | 36 | D | 61 | B | 86 | C |
| 12 | C | 37 | C | 62 | A | 87 | A |
| 13 | C | 38 | A | 63 | B | 88 | A |
| 14 | D | 39 | A | 64 | B | 89 | A |
| 15 | B | 40 | B | 65 | C | 90 | C |
| 16 | D | 41 | C | 66 | C | 91 | D |
| 17 | B | 42 | A | 67 | C | 92 | C |
| 18 | B | 43 | A | 68 | C | 93 | B |
| 19 | D | 44 | A | 69 | B | 94 | C |
| 20 | C | 45 | A | 70 | D | 95 | A |
| 21 | C | 46 | B | 71 | A | 96 | A |
| 22 | A | 47 | A | 72 | D | 97 | B |
| 23 | A | 48 | B | 73 | B | 98 | A |
| 24 | A | 49 | D | 74 | D | 99 | B |
| 25 | A | 50 | A | 75 | C | 100 | B |