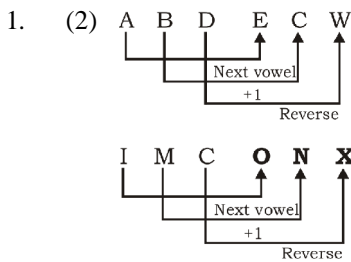


SSC CGL - 170840 GRAND TEST
HINTS AND SOLUTIONS

ANSWER KEY

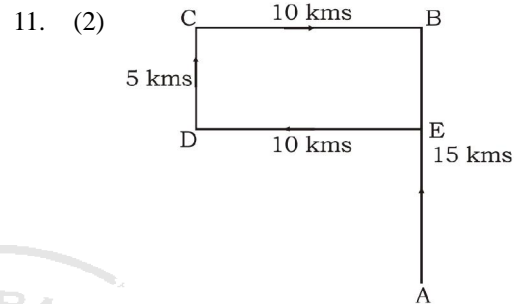
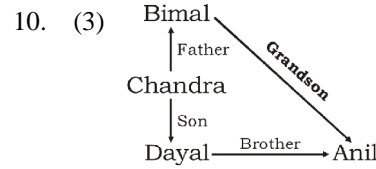
1	(2)	26	(2)	51	(4)	76	(1)
2	(2)	27	(1)	52	(1)	77	(3)
3	(4)	28	(1)	53	(2)	78	(3)
4	(4)	29	(2)	54	(2)	79	(4)
5	(1)	30	(4)	55	(1)	80	(3)
6	(4)	31	(1)	56	(4)	81	(4)
7	(4)	32	(2)	57	(2)	82	(3)
8	(2)	33	(1)	58	(1)	83	(4)
9	(4)	34	(1)	59	(2)	84	(4)
10	(3)	35	(3)	60	(4)	85	(3)
11	(2)	36	(1)	61	(1)	86	(3)
12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



- (2) As milk is adulterated by water, in the same way, ghee is adulterated by Vanaspati.
- (4) In Mustard seed is a usable part similarly in carrot root is a usable part.
- (4) **Word** **Antonyms**
Always Never
Often **Rarely**
- (1) Wastes are kept in a dustbin whereas books are stacked in a rack.

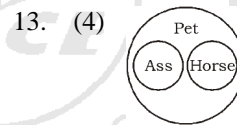
1

- (4) All except Guhawati are capitals of states of India.
- (4) Except 247, others are multiple of 17.
- (2) In all other pairs, second denotes the class to which the first belong.
- (4) All except Identification are synonyms.



Finally, he is to the North of his house.

12. (2) The sitting arrangement is as follows:
• • • • •
P X S Z R A
Therefore, right of P is X.



- (4) The colour of milk is 'white'. But, as given, 'green' means 'white'. So, the colour of milk is 'green'.
- (3) The order from the oldest to the youngest would be Vani - Sita - Rani - Mary - Nita (Middle)
- (4) Series has following pattern $3 \times 1^2, 3 \times 2^2, 3 \times 3^2$ and so on
Next term will be $3 \times 7^2 = 147$
- (3) Pattern is $\times 2, \times 3, \times 4$
So, next number in the series will be $\times 5$
 $24 \times 5 = 120$
- (2)
- (1) $\frac{5}{6}$ 12 21 32 45 60
+7 +9 +11 +13 +15
+2 +2 +2 +2
- (4) $93 - (27 + 3) = 63$
 $79 - (38 + 4) = 37$
Therefore, $67 - (16 + ?) = 42 \Rightarrow ? = 9$.
- (1) $(15 - 12) + (10 - 9) = 3 + 1 = 4$
 $(28 - 12) + (16 - 20) = 16 + (-4) = 12$
Similarly, $(23 - 11) + (15 - 16) = 12 + (-1) = 11$.
- (2)

23. (4)

24. (4)

25. (2) $3649 = \sqrt{36} + \sqrt{49} = 13 \Rightarrow 13^2 + 13 = 169 + 13 = 182$
 and $6481 = \sqrt{64} + \sqrt{81} = 17 \Rightarrow 17^2 + 17 = 289 + 17 = 306$
 so, $2516 = \sqrt{25} + \sqrt{16} = 9 \Rightarrow 9^2 + 9 = 81 + 9 = 90$.

51. (4)

52. (1) % of marks obtained by Alex in Biology
 $= \frac{90}{125} \times 100 = 72\%$
 = % of marks obtained by Alex in Hindi.

53. (2) 56% of $150 = 84$.

Hence, five students will get grade A.

54. (2) Let us consider that total population of town be 41 unit
 Male : Female = 28 unit : [(41 - 28) = 13 unit]

$14\frac{2}{7}\%$ Male are married i.e. $\frac{28}{7} = 4$ male

So, % of married females = $\frac{4}{13} \times 100\% = 30\frac{10}{13}\%$

55. (1) Trader buys 1200 gm for Rs. $\left(1200 \times \frac{110}{100}\right) = \text{Rs. } 1320$

\therefore his total gain (profit) = $1320 - 1000 = \text{Rs. } 320$

\therefore Net profit percentage = $\frac{320 \times 100}{1000} = 32\%$.

56. (4) $a^3 + b^3 + c^3 - 3abc$
 $= (a + b + c)(a^2 + b^2 + c^2 - ab - bc - ca)$
 $= \frac{1}{2}(a + b + c)[(a - b)^2 + (b - c)^2 + (c - a)^2]$

$\therefore \frac{a^3 + b^3 + c^3 - abc}{(a - b)^2 + (b - c)^2 + (c - a)^2}$

$= \frac{\frac{1}{2}(a + b + c)[(a - b)^2 + (b - c)^2 + (c - a)^2]}{(a - b)^2 + (b - c)^2 + (c - a)^2}$

$= \frac{1}{2}(a + b + c) = \frac{1}{2}(25 + 15 - 10) = \frac{30}{2} = 15$.

57. (2) P can complete $\frac{1}{4}$ of work in 10 days

\therefore P can complete the whole work in 40 days.

Q can complete 40% of work in 15 days.

\therefore Q can complete the whole work in

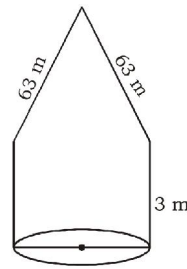
$= \frac{15 \times 100}{40} = 37\frac{1}{2}$ days

R can complete the whole work in $13 \times 3 = 39$ days

S can complete the whole work in $7 \times 6 = 42$ days

\therefore Q will be able to complete the work first.

58. (1)



$$r = \frac{105}{2}$$

Slant surface area = $\pi r l = \frac{22}{7} \times \frac{105}{2} \times 63 = 10395 \text{ m}^2$

Curved surface area of cylinder

$$= 2\pi r h = 2 \times \frac{22}{7} \times \frac{105}{2} \times 3 = 990 \text{ m}^2$$

\therefore Required area of canvas to make the tent
 $= 10395 + 990 = 11385 \text{ m}^2$

59. (2) $x^2 = y + z \Rightarrow x = \frac{y+z}{x}$

$$\therefore x + 1 = \frac{y+z}{x} + 1 = \frac{y+z+x}{x} = \frac{x+y+z}{x}$$

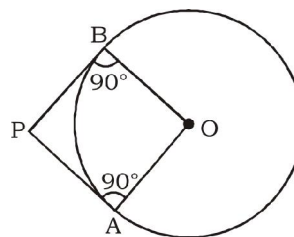
Similarly, $y^2 = z + x \Rightarrow y + 1 = \frac{x+y+z}{y}$

and $z^2 = x + y \Rightarrow z + 1 = \frac{x+y+z}{z}$

$$\therefore \frac{1}{x+1} + \frac{1}{y+1} + \frac{1}{z+1} = \frac{x}{x+y+z} + \frac{y}{x+y+z} + \frac{z}{x+y+z}$$

$$= \frac{x+y+z}{x+y+z} = 1$$

60. (4)



Since PA and PB are tangents, OB and OA are radii

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

$$\angle P + \angle O = 180^\circ$$

\therefore OAPB is a cyclic quadrilateral

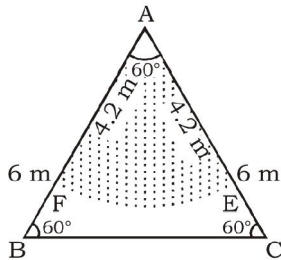
61. (1) Required no. of days = $\frac{(144 - 12 + 18)}{6 + 4} = \frac{150}{10} = 15$ days.

62. (2) Loss = $\frac{20}{15} - \frac{15}{20} = \frac{80 - 45}{60} = \text{Rs. } \frac{35}{60}$

$$\therefore \text{loss\%} = \frac{35}{60} \times 100 \times \frac{15}{20} = 43\frac{3}{4}\%$$

63. (1) $a = \sqrt{2} + 1 \Rightarrow a + 1 = \sqrt{2} + 2$
 $b = \sqrt{2} - 1 \Rightarrow b + 1 = \sqrt{2}$
 $\therefore \frac{1}{a+1} + \frac{1}{b+1} = \frac{1}{\sqrt{2}+2} + \frac{1}{\sqrt{2}} = \frac{\sqrt{2} + \sqrt{2} + 2}{(\sqrt{2}+2)\sqrt{2}}$
 $= \frac{2\sqrt{2} + 2}{2 + 2\sqrt{2}} = 1$

64. (3) In figure, ABC is grassy field



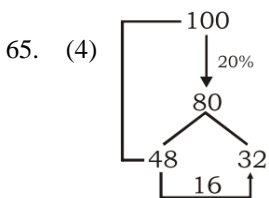
AF and AE are rope 4.2 m long
 The horse is tied at vertices A
 Available area = shaded AFE
 Since AFE is a sector of the circle
 \therefore Area of AFE

$$= \frac{\pi r^2 \theta}{360} = \frac{22}{7} \times \frac{4.2 \times 4.2 \times 60}{360} = 2.2 \times 4.2 \text{ m}^2$$

Area of total grassy field $= \frac{\sqrt{3}}{4} \times 6 \times 6 = 1.732 \times 9 \text{ m}^2$

\therefore Required percentage

$$= \frac{2.2 \times 4.2 \times 100}{1.732 \times 9} = 59.28\% \approx 59\%$$



16 \rightarrow 1900 - 300

16 \rightarrow 1600

1 \rightarrow 100

then 32 \rightarrow 32 \times 100 = 3200

66. (2) C.P. of 1st transistor = Rs. $\left(\frac{100}{120} \times 840\right)$ = Rs. 700

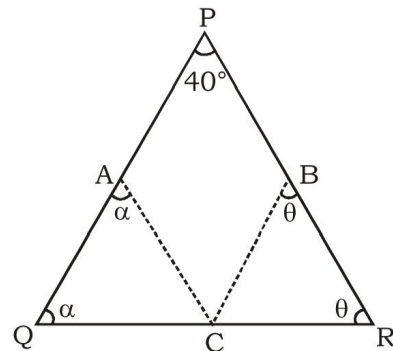
C.P. of 2nd transistor = Rs. $\left(\frac{100}{96} \times 960\right)$ = Rs. 1000

So, total C.P. = Rs. (700 + 1000) = Rs. 1700

Total S.P. = Rs. (840 + 960) = Rs. 1800

\therefore Gain % = $\left(\frac{100}{1700} \times 100\right)\%$ = $5\frac{15}{17}\%$.

67. (4)



Since $QC = AC \Rightarrow \angle AQC = \angle QAC = \alpha$

and $CR = CB \Rightarrow \angle CBR = \angle CRB = \theta$

$\therefore \Delta PQR \Rightarrow \alpha + \theta + 40^\circ = 180^\circ$

$\Rightarrow \alpha + \theta = 140^\circ$

$\therefore \angle PAC = 180 - \alpha$ and $\angle CBP = 180 - \theta$

\therefore In $\Delta PBC \Rightarrow \angle P + \angle A + \angle C + \angle B = 360^\circ$

$\Rightarrow 40 + 180 - \alpha + \angle C + 180 - \theta = 360$

$\Rightarrow \angle C - \alpha - \theta = -40 \Rightarrow \angle C - (\alpha + \theta) = -40$

$\Rightarrow \angle C - 140 = -40 \Rightarrow \angle C = 140 - 40 = 100^\circ$

$\therefore \angle ACB = 100^\circ$

68. (3) The time taken by A in 1 round = $\frac{35}{4}$ hrs.

The time taken by B in 1 round = $\frac{35}{5}$ hrs.

\therefore L.C.M of $\frac{35}{4}$ and $\frac{35}{5} = 35$

\therefore They will meet earliest again after 35 hours.

69. (1) Amount for first year = $6000 \times \left(\frac{105}{100}\right)^1$ = Rs. 6300

After repaid Rs. 2100 the rest amount = 6300 - 2100 = 4200

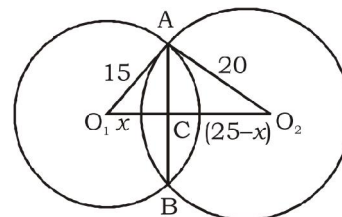
Amount for second year = $4200 \times \left(\frac{105}{100}\right)$ = Rs. 4410

After repaid Rs. 2100 the rest amount = 4410 - 2100 = Rs. 2310

\therefore Amount for third year

= $2310 \times \left(\frac{105}{100}\right)$ = Rs. 2425.50

70. (2)



AB is common chord

Radius $O_1A = 15$ cm

Radius $O_2Q = 20$ cm

$O_1O_2 = 25$ cm

Let $O_1C = x$ and $CO_2 = 25 - x$

In right angled ΔO_1AC ,

$$AC^2 = 225 - x^2 \quad \dots(i)$$

In right angled ΔO_2AC , $AC^2 = 20^2 - (25 - x)^2$

$$\Rightarrow 225 - x^2 = 400 - (625 + x^2 + 50x)$$

$$\Rightarrow 225 - x^2 = 400 - 625 - x^2 + 50x$$

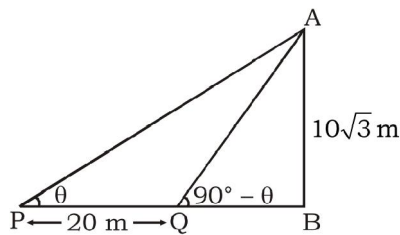
$$\Rightarrow 225 = -225 + 50x \Rightarrow 50x = 450 \Rightarrow x = 9$$

By equation (i) $AC^2 = 225 - 81 = 144$

$$\Rightarrow AC^2 = 12^2 \Rightarrow AC = 12 \text{ cm}$$

\therefore Length of common chord $AB = 2AC = 2 \times 12 = 24$ cm

71. (3)



Length of building $= 10\sqrt{3}$ m

ATQ,

$$BP - BQ = 20$$

$$AB \cot \theta - AB \cot (90^\circ - \theta) = 20$$

$$10\sqrt{3}(\cos \theta - \tan \theta) = 20$$

$$\Rightarrow \cot \theta - \frac{1}{\cot \theta} = \frac{2}{\sqrt{3}} = \sqrt{3} - \frac{1}{\sqrt{3}} \Rightarrow \cot \theta = \sqrt{3}$$

Distance of point P from building $= (10\sqrt{3})(\sqrt{3}) = 30$ m.

72. (1) $-1^{5^2} + 1^{2^5} = -1^{25} + 1^{32} = -1 + 1 = 0$

73. (4) selling price of one egg to make a profit of 20%

$$= 720 \times \frac{120}{100} \times \frac{1}{20 \times 12} = \frac{360}{100} = \text{Rs. } 3.60.$$

74. (1) Total no. of cows = n

No. of cows which 1st son got = $\frac{n}{2}$

No. of cows which 2nd son got = $\frac{n}{4}$

$$\therefore \text{Remaining cows} = n - \left(\frac{n}{2} + \frac{n}{4}\right) = n - \frac{3n}{4} = \frac{n}{4}$$

It is given that both son has $7 + 7 = 14$ cows with them

$$\Rightarrow \frac{n}{4} = 14 \Rightarrow n = 56.$$

So, the value of $n = 56$

75. (2) Traced arc length by minute hand in 60×60 seconds

$$= 2\pi r$$

\therefore Length of arc made in 18 seconds

$$= \frac{2\pi r}{60 \times 60} \times 18 = 2 \times \frac{22}{7} \times \frac{35 \times 18}{60 \times 60} = 1.1 \text{ cm}$$

76. (1) Replace 'from' by 'of'. 'Deprive' will take 'of'.

77. (3) Replace function by functioning. 'Start' take 'V₁+ing' after it.

78. (3) 'coward' and 'person' can't come together. This is superfluous. Remove 'person' or change 'coward' into 'courageously'.

79. (4) 'Absolve somebody of/from something' means 'to state formally that somebody is not responsible for something'.

80. (3) 'Protruding' means 'sticking out from a place or surface'.

88. (4) 'An invaluable advice' is extremely useful piece of advice.