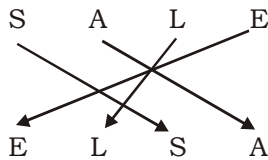
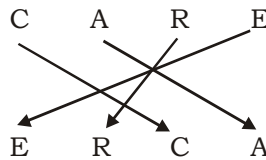


**SSC MOCK TEST - 407 (SOLUTION)**

1. (2) As,



Similarly,



2. (3) As,

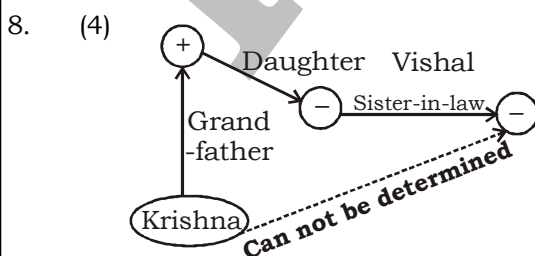
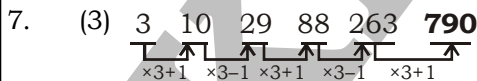
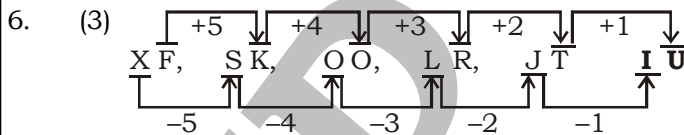
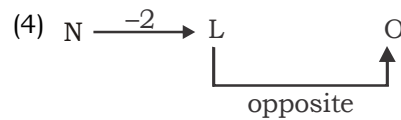
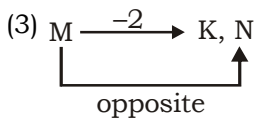
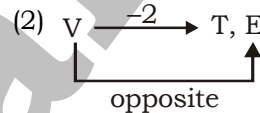
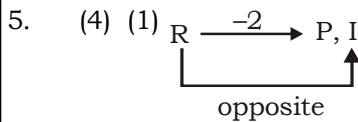
$$1 + 2 + 5 \xrightarrow{8^2} 64$$

Similarly,

$$2 + 5 + 0 \xrightarrow{7^2} 49$$

3. (1) Horse has hoof, while cat has paw.

4. (4) Eye, Nose and skin are sense organs, while heart is not a sense organ.



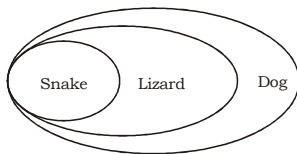
9. (3) As,

S	Y	N	O	N	Y	M	S
↓	↓	↓	↓	↓	↓	↓	↓
19	25	14	15	14	25	13	19

Similarly,

S	A	L	E	S	M	A	N
↓	↓	↓	↓	↓	↓	↓	↓
19	1	12	5	19	13	1	14

10. (3)



I. False      II. True      III. True

Only Conclusion II and III follow

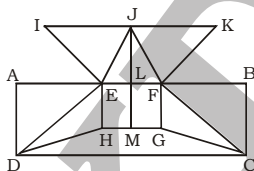
11. (3) From the given dice, we can conclude that 6, 4, 1 and 2 dots appear adjacent to 3 dots. Clearly, there will be 5 dots on the face opposite the face with 3 dots.

12. (1)  $2 \times 9 + 3 \times 17 = 18 + 51 = 69$   
 $2 \times 13 + 3 \times 11 = 26 + 33 = 59$   
 Then,  $2 \times ? + 3 \times 13 = 49$   
 $2 \times ? = 10$   
 $? = 5$

13. (2)  $(7 \times 3) = 21$  and  $(9 \times 3) = 27$   
 and  $(4 \times 9) = 36$  and  $(2 \times 9) = 18$   
 Therefore,  
 $(9 \times 6) = 54$  and  $(4 \times 6) = 24$

14. (2) Sachin himself is the only child of his father.  
 So, Sachin's wife is Priya's mother.

15. (2) The given below figure is:



Horizontal lines are IK, AB, HG and DC i.e. 4 in number.

Vertical lines are AD, EH, JM, FG and BC i.e. 5 in number.

Slanting line are IE, JE, JF, KF, DE, DH, FC and GC i.e. 8 in number.

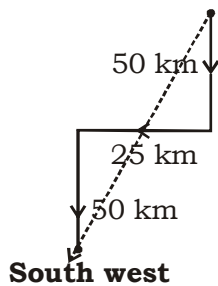
Thus, there are  $4 + 5 + 8 = 17$  straight lines in the given figure.

16. (2)

All the thieves are criminals, while judge is different from these.

17. (3) def/efg/fgh/ghi

18. (1)

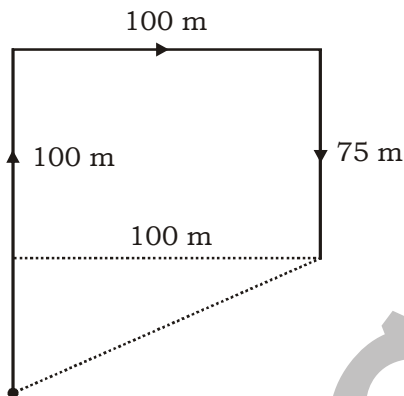


∴ Required direction is south-west.

19. (4) 7 V 42 M 56 L 8 S 5

$$\begin{aligned} \text{After putting the value,} \\ &= 7 - 42 + 56 \div 8 \times 5 \\ &= 7 - 42 + 7 \times 5 \\ &= 7 - 42 + 35 = 0 \end{aligned}$$

20. (1)



$$\begin{aligned} \therefore \text{Required distance} &= \sqrt{100^2 + 25^2} \\ &= \sqrt{10000 + 625} = \sqrt{10625} \\ &= \sqrt{5 \times 5 \times 5 \times 3 \times 3 \times 3 \times 3} = 45\sqrt{5} \text{ m} \end{aligned}$$

21. (3) As,

$$\text{RAM} \rightarrow (18)^2 + (1)^2 + (13)^2 = 494$$

Similarly,

$$\text{SITA} \rightarrow (19)^2 + (9)^2 + (20)^2 + (1)^2 = 843$$

22. (1)

23. (2)

24. (1)

25. (1)

26. (1) Buland Darwaza is not a part of the Qutub Complex. The Buland darwaza is situated in Fatehpur Sikri, Agra. It was built to commemorate his victory over Gujarat. It is the world's highest gateway and is a Mughal architecture example.

27. (3) ISO 14001 is an international standard for designing and implementing an environmental management system(EMS). ISO 14001 requirements provide a framework and guidelines for creating your environmental management system so that you do not miss important elements needed for an EMS to be successful.

28. (4) National Bank for Agriculture and Rural Development (NABARD) was established on 12 July 1982 by an Act of the Parliament.

  
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30. (3) Article 368 in Part XX of the Constitution deals with the powers of Parliament to amend the Constitution and its procedure.
31. (4) Oesophagus is the food tube. It is an organ in vertebrates, by which food travels from the pharynx to the stomach, aided by peristaltic contractions.
32. (4) The first South Asian Games were hosted by Kathmandu, Nepal in 1984. From 1984 to 1987 they were held every year except 1986, as it was a year of Commonwealth Games and Asian Games.
33. (4) Hajar Churashir Maa (No. 1084's Mother) is a 1974 Bengali novel written by Ramon Magsaysay Award winner Mahasweta Devi.
35. (1) The Earth rotates through  $15^\circ$  each hour so to rotate through  $30^\circ$  degrees it would take 2 hours.
36. (2) President Ram Nath Kovind inaugurated India's first Artificial Intelligence (AI) school called as Santhigiri Vidyabhavan in Kerala's capital city, Thiruvananthapuram.
37. (2) The first electron shell which is the nearest to the nucleus never holds more than 'n' electrons, where 'n' is equal to 2. Electrons are part of the lepton particle family's first generation, and are usually considered to be elementary particles since they have no established components or substructure.
39. (4) Patkai Range is the hills on India's North Eastern border with Burma. Indian states along the Patkai range are Nagaland, Meghalaya, Mizoram and Manipur.
40. (4) When the soluble salts of magnesium and calcium are present in the form of chlorides and sulphides in water, we call it permanent hardness because this hardness cannot be removed by boiling. We can remove this hardness by treating the water with washing soda.
41. (4) 107th Indian Science Congress will be held at University of Agricultural Sciences, GKVK Campus, Bangalore, Karnataka from 3-7th January, 2020.
44. (2) Apharan is the name of the anti-hijacking exercise conducted by the Indian Navy in collaboration with the Indian Coast Guard. It was conducted by the Indian Navy, Indian Coast Guard, and Cochin Port Trust and other concerned stakeholders in Kerala.
46. (2) The tidal mouth of a river where fresh and saline water gets mixed is known as an Estuary.
47. (1) The Battle of Khanwa was fought near the village of Khanwa, in Bharatpur District of Rajasthan, on March 16, 1527. It was fought between the invading forces of the first Mughal Emperor Babur and the Rajput forces led by Rana Sanga of Mewar, after the Battle of Panipat.
48. (2) Human alphaherpesvirus 3 (HHV-3), usually referred to as the varicella-zoster virus (VZV), is one of nine herpesviruses known to infect humans. It causes chickenpox (varicella), a disease most commonly affecting children, teens, and young adults, and shingles (herpes zoster) in adults; shingles is rare in children.
50. (2) Over 5,000 minors rescued by Mumbai Police so far this year under 'Operation Muskaan', a Ministry of Home Affairs project.
51. (4) ATQ,

Spirit : Water  
 Initial ratio  $7 \times 3$  :  $6 \times 3$   
 Final ratio  $3 \times 7$  :  $2 \times 7$   
 Spirit is added not Water. So Water will be equal.

**Spirit : Water = Total**  
  
 Initial ratio    7    :    6    )<sup>4</sup> = 13  
 Final ratio       9    :    6  
 13 unit = 91 litre  
 1 unit = 7 litres  
 2 unit =  $7 \times 2 = 14$  litres

52. (2)  $\frac{8 \text{ person} \times 8 \text{ hour}}{9600} = \frac{16 \text{ person} \times 5 \text{ hour}}{\text{Amount}}$

Amount =  $\frac{16 \text{ person} \times 5 \text{ hour} \times 9600}{8 \text{ person} \times 8 \text{ hour}} = ₹ 12000$

53. (1)

	Let total capacity	efficiency
A = 10	30	3
B = 15		2

A fills 3 unit in first minute and B empties 2 unit in second minute.

(A – B)'s efficiency = (3 – 2) in 2 minutes

= 1 unit in 2 minutes

Efficiency                      Minute

1 unit                              2

27 unit                          =  $27 \times 2 = 54$  minutes

Next 3 unit, only A can fill in 1 minute

27 + 3 unit = 54 + 1

30 unit = 55 minutes

54. (2) Speed of man in still water,  $x = 2.75 \text{ km/hr}$

Speed of the stream,  $y = 1.25 \text{ km/hr}$

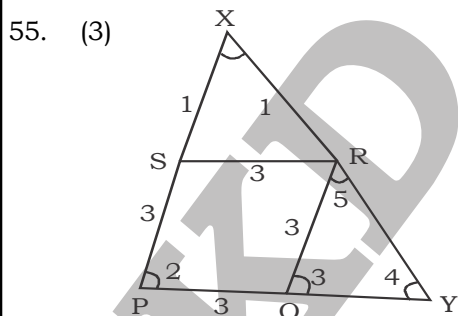
Upstream speed =  $(x - y) = (2.75 - 1.25) \text{ km/hr} = 1.5 \text{ km/hr}$

Upstream time =  $\frac{\text{Distance}}{\text{Upstream speed}} = \frac{18 \text{ km}}{1.5 \text{ km/hr}} = 12 \text{ hr}$

Downstream speed =  $x + y = (2.75 + 1.25) \text{ km/hr} = 4 \text{ km/hr}$

Downstream time =  $\frac{\text{Distance}}{\text{Downstream speed}} = \frac{18 \text{ km}}{4 \text{ km/hr}} = 4.5 \text{ hr}$

Total time =  $(12 + 4.5) = 16.5 \text{ hrs}$



PQRS is a rhombus

$PQ = QR = RS = SP$

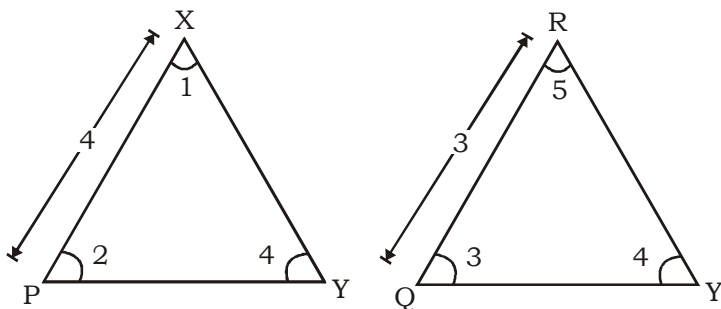
$SX = \frac{1}{3}PQ$  (Given)

$\frac{SX}{PQ} = \frac{1}{3}$

In a rhombus  $\angle 2 = \angle 3$

$$\triangle PXY \sim \triangle RY$$

$\angle Y$  is common and  $\angle 2 = \angle 3$



$$\frac{PX}{QR} = \frac{PY}{QY}$$

$$\frac{PX}{QR} = \frac{4}{3}$$

$$\frac{PQ + QY}{QY} = \frac{4}{3}$$

$$\frac{PQ}{QY} + 1 = \frac{4}{3}$$

$$\frac{PQ}{QY} = \frac{4}{3} - 1$$

$$\frac{PQ}{QY} = \frac{1}{3}$$

$$PQ : QY = 1 : 3$$

56. (2)  $S = 1 - \frac{1}{10} + \frac{1}{10^2} - \frac{1}{10^3} + \dots \infty$

It is Geometric series to infinity

$$a = 1 \text{ and common ratio } (r) = \frac{-1}{10}$$

$$S_{\infty} = \frac{a}{1-r} = \frac{1}{1 - \left(\frac{-1}{10}\right)} = \frac{10}{11} = 0.\overline{90}$$

$\therefore$  The value correct up to 6 places of decimal = 0.909090

57. (3) Distance =  $\frac{7 \times 8}{8-7} \times \frac{6}{60} = \frac{56}{10} = 5.6 \text{ km}$

**Shortcut:-**

Speed	Time	Actual Time
7	8	+6 min late
8	$\frac{7}{1 \text{ hour or 60 min}}$	$\frac{0 \text{ min}}{6 \text{ min}}$

$\therefore$  Actual distance =  $\frac{6}{60} \times 56 = 5.6 \text{ km}$

58. (1) Volume of original cone ( $V_1$ ) =  $\frac{1}{3} \pi r^2 h$

Radius of new cone ( $r_1$ ) =  $\frac{r}{2}$

Height ( $h_1$ ) =  $h$

Volume ( $V_2$ ) =  $\frac{1}{3} \pi r_1^2 h_1 = \frac{1}{3} \pi \times \frac{r^2}{4} \times h = \frac{\pi}{12} r^2 h$

$\therefore$  Required ratio  $\left( \frac{V_2}{V_1} \right) = \frac{\pi r^2 h \times 3}{12 \times \pi r^2 h} = \frac{1}{4} = 1 : 4$

59. (1) Let sides be  $15x$ ,  $20x$  and  $25x$  respectively.  
 $(15x)^2 + (20x)^2 = (25x)^2$  (Pythagoras theorem)

$\Delta$  is a right angle triangle.

Area =  $\frac{1}{2} \times 15x \times 20x = 15000$

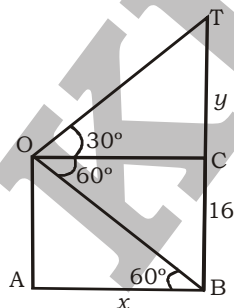
$150x^2 = 15000$

$x^2 = 100$

$x = 10$

$\therefore$  Perimeter of triangle =  $(15 + 20 + 25) \times 10 = (60) \times 10 = 600 \text{ cm}$

60. (2)



In  $\Delta TOC$ ,

$\tan 30^\circ = \frac{y}{x}$

$$\frac{1}{\sqrt{3}} = \frac{y}{x}$$

$$x = \sqrt{3}y$$

In  $\Delta AOB$ ,

$$\frac{16}{x} = \tan 60^\circ$$

$$\sqrt{3} = \frac{16}{x}$$

$$16 = \sqrt{3} x$$

$$16 = \sqrt{3} \times \sqrt{3}y \quad (\because x = \sqrt{3}y)$$

$$\frac{16}{3} = y$$

$$y = 5.33$$

So, height of tower =  $(16 + 5.33) = 21.33$  m

$$61. \quad (3) \text{ Total pupils wearing spectacles} = \frac{45}{100} \times \frac{20}{100} \times 600 + \frac{55}{100} \times \frac{30}{100} \times 600$$

$$= 54 + 99 = 153$$

$$\therefore \text{ Required percentage} = \left( \frac{153}{600} \times 100 \right) \% = 25.5\%$$

$$62. \quad (2) A = P \left( 1 + \frac{r}{100} \right)^T$$

$$1102.5 = 1000 \left( 1 + \frac{5}{100} \right)^T$$

$$\left( \frac{21}{20} \right)^T = \frac{1102.50}{1000}$$

$$\left( \frac{21}{20} \right)^T = \left( \frac{21}{20} \right)^2$$

$$T = 2 \text{ years}$$

$$63. \quad (1) \text{ Side of a cube} = \text{HCF of } 6, 42, 45 = 3 \text{ cm}$$

$$\text{So, least possible number of cubes} = \frac{6 \times 42 \times 45}{3 \times 3 \times 3} = 420$$

$$64. \quad (3) \begin{array}{r} \text{Filling Pipe} \quad 6 \overline{) 42} \quad 7 \\ \text{Filling Pipe + leakage} \quad 7 \overline{) 6} \quad 6 \\ \hline \quad \quad \quad \quad \quad \quad \quad 1 \end{array}$$

$$\therefore \text{ Time taken by leakage to empty the tank} = \frac{42}{1} = 42 \text{ hours}$$

65. (4) Percentage discount =  $\left( \frac{MP - SP}{MP} \times 100 \right) \%$

$$= \left( \frac{700 - 625}{700} \times 100 \right) \% = 10.71\%$$

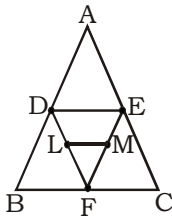
66. (1)  $\frac{a + 2\sqrt{ab} + b}{\sqrt{a} + \sqrt{b}} + \frac{a - 2\sqrt{ab} + b}{\sqrt{a} - \sqrt{b}}$

$$= \frac{(\sqrt{a} + \sqrt{b})^2}{\sqrt{a} + \sqrt{b}} + \frac{(\sqrt{a} - \sqrt{b})^2}{\sqrt{a} - \sqrt{b}}$$

$$= \sqrt{a} + \sqrt{b} + \sqrt{a} - \sqrt{b}$$

$$= 2\sqrt{a} = 2\sqrt{9} = 6$$

67. (1)



$$\frac{AB}{AD} = \frac{BC}{DE}$$

[By Similar triangles]

$$\frac{2}{1} = \frac{BC}{DE}$$

$$BC = 2DE$$

$$\frac{LM}{DE} = \frac{LF}{DF}$$

[ By Similar triangles]

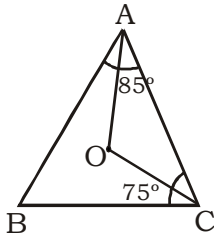
$$\frac{LM}{DE} = \frac{1}{2}$$

$$DE = 2LM$$

$$2 \times 2 LM = BC$$

$$LM : BC = 1 : 4$$

68. (4)



In  $\triangle ABC$ ,

$$\angle ABC = 180^\circ - 85^\circ - 75^\circ = 20^\circ$$

$$\angle AOC = 2 \times \angle ABC = 2 \times 20^\circ = 40^\circ$$

$$\angle OAC = \frac{1}{2}(180^\circ - \angle AOC)$$

$$= \frac{1}{2}(180^\circ - 40^\circ) = 70^\circ$$

69. (3) Length of tree having 80 m shadow =  $\frac{24}{18} \times 60 = 80$  m

70. (1) Fourth proportional =  $\frac{9}{16} \times 8 = 4.5$

71. (1) Number of students qualified =  $45 + 50 + 40 + 35 + 10 = 180$

72. (1) Number of students whose marks are more than 40 and less than or equal to 50 = 45

73. (4)

74. (2) Required % =  $\left( \frac{45 + 50}{200} \times 100 \right) \% = 47.5\%$

75. (3) Required ratio =  $85 : 20 = 17 : 4$

## MEANINGS IN ALPHABETICAL ORDER

Agriculturist	Cultivator, Farmer	किसान
Ambiguous	(of language) open to more than one interpretation; having a double meaning	अस्पष्ट
Botanist	an expert in or student of the scientific study of plants	वनस्पति-विज्ञानिक
Cartographer	a person who draws or produces maps	मानचित्रकार
Climax	the most intense, exciting, or important point of something; a culmination or apex	उत्कर्ष
Commemorate	recall and show respect for (someone or something)	मनाना
Culmination	the highest or climactic point of something, especially as attained after a long time	परिणति
Decisive	settling an issue; producing a definite result	निर्णयात्मक
Directory	a book listing individuals or organizations alphabetically or thematically with details such as names, addresses, and phone numbers	निर्देशिका
Draftsman	a person who makes detailed technical plans or drawings	नक्शानवीस
Epilogue	a section or speech at the end of a book or play that serves as a comment on or a conclusion to what has happened	उपसंहार
Florist	a person who sells and arranges plants and cut flowers	फूलवाला
Handbook	a book giving information such as facts on a particular subject or instructions for operating a machine	पुस्तिका
Manual	relating to or done with the hands	नियमावली
Nutritionist	a person who studies or is an expert in nutrition	पोषण
Preface	an introduction to a book, typically stating its subject, scope, or aims	प्रस्तावना
Prologue	a separate introductory section of a literary or musical work	प्रस्ताव
Reeked	smell strongly and unpleasantly; stink	धूँआ देना
Thesaurus	a book that lists words in groups of synonyms and related concepts	शब्दकोश
Trace	find or discover by investigation	निशान
Undeniable	unable to be denied or disputed	निर्विवाद

## SSC MOCK TEST - 407 (ANSWER KEY)

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

76. (2) Replace 'amusing' with 'amused'. Amused at/by something- thinking that someone or something is interesting, so that you smile or laugh.
77. (2) Replace 'on' with 'up'.  
Pick on- to harass or bother.  
Pick up- to grasp something (as with one's hands).
90. (4) The correct spelling is 'Manageable'.
91. (2) The correct spelling is 'Commemorate'.