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2007, OUTRAM LINES, 1ST FLOOR, OPPOSITE MUKHERJEE NAGAR POLICE STATION, DELHI-110009

Answer-key & Solution

SSC JE (Mechanical)
MOCK -(118)
Date 07.10.2017

1 C	26 C	51 C	76 A	101 C	126 D	151 D	176 B
2 C	27 B	52 A	77 D	102 B	127 C	152 D	177 D
3 D	28 C	53 D	78 A	103 A	128 A	153 C	178 B
4 A	29 D	54 D	79 A	104 C	129 B	154 B	179 D
5 C	30 A	55 C	80 C	105 B	130 C	155 D	180 C
6 C	31 B	56 D	81 D	106 D	131 C	156 C	181 B
7 B	32 C	57 C	82 C	107 D	132 B	157 C	182 C
8 A	33 D	58 D	83 C	108 A	133 D	158 D	183 C
9 B	34 A	59 A	84 D	109 C	134 C	159 D	184 A
10 D	35 B	60 D	85 B	110 D	135 B	160 C	185 C
11 C	36 B	61 A	86 C	111 D	136 D	161 A	186 D
12 D	37 A	62 A	87 B	112 D	137 B	162 C	187 C
13 C	38 A	63 A	88 B	113 A	138 C	163 C	188 B
14 C	39 C	64 D	89 C	114 D	139 D	164 C	189 A
15 D	40 C	65 A	90 C	115 D	140 C	165 A	190 C
16 C	41 A	66 B	91 A	116 D	141 A	166 A	191 C
17 C	42 C	67 C	92 D	117 A	142 C	167 C	192 A
18 B	43 C	68 C	93 C	118 A	143 A	168 D	193 D
19 B	44 D	69 A	94 A	119 B	144 A	169 D	194 A
20 C	45 A	70 A	95 B	120 D	145 A	170 B	195 C
21 C	46 D	71 C	96 C	121 D	146 B	171 B	196 C
22 D	47 C	72 D	97 D	122 C	147 C	172 D	197 D
23 D	48 C	73 A	98 A	123 D	148 C	173 C	198 B
24 D	49 B	74 B	99 B	124 A	149 B	174 B	199 A
25 B	50 B	75 D	100 C	125 D	150 B	175 D	200 A

Note : If your opinion differ regarding any answer, please message the mock test and Question number to 9560620353

Note : If you face any problem regarding result or marks scored, please contact : 9313111777

SOLUTION SSC JE (Mechanical) MOCK TEST no. 118

101.(C) $\delta_{\text{conical}} = \frac{\gamma L^2}{6E}$

$\delta_{\text{prismatic}} = \frac{\gamma L^2}{2E}$

$\delta_{\text{conical}} = \frac{1}{3} \left[\frac{\gamma L^2}{2E} \right]$

$\delta_{\text{conical}} = \frac{1}{3} \delta_{\text{prismatic}}$

107.(D) $\sigma_x = 1200 \text{ MPa}$

$\sigma_y = 600 \text{ MPa}$

$\tau_{xy} = 400 \text{ MPa}$

$\sigma_{\text{max}} = \frac{1200 + 600}{2} + \sqrt{\left(\frac{1200 - 600}{2}\right)^2 + 400^2}$

$\sigma_{\text{max}} = 1400 \text{ MPa}$

116.(D) $m = 2 \text{ tonnes}$

$= 2000 \text{ kg}$

$V = 2.5 \text{ m}^3$

$\rho = \frac{M}{V}$

$= \frac{2000}{2.5}$

$\rho = 800 \text{ kg/m}^3$

131.(C) $P = 1750 \text{ KW}$

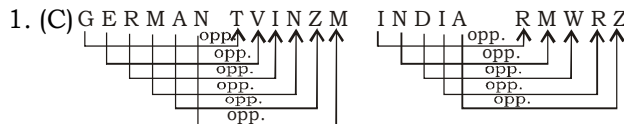
$H = 100 \text{ m}$

$P_u = \frac{P}{H^{3/2}}$

$= \frac{1750}{100^{3/2}}$

$= \frac{1750}{1000}$

$P_u = 1.75 \text{ KW}$



2. (C) 'Rose' is a Flower and 'Fig' is a Fruit

3. (D)

4. (A)

5. (C) $11^3 + 11 \rightarrow 1342$
 $14^3 + 14 \rightarrow 2758$

6. (C) Ved Samaj was formed by Keshav Chandra Sen.

7. (B) Both are first female chief ministers of their respective states.

8 (A) Horse uses hoof to walk, similarly man uses foot to walk.

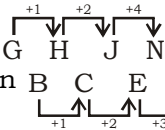


10. (D) Night : Morning : : Evening : Night



11. (C) Pen, Pencil and Markers are used for writing purpose.

12. (D) All except G H J N is following the pattern B C E H.



13. (C) Graph, Chart and Drawing are drawn on paper.

14. (C) Except 87, others are prime numbers.

15. (D) All except valley are elevated features.

16. (C) Except NaCl, all others are acids.

17. (C) $17^3 = 4913$, $11^3 = 1331$, $16^3 = 4096$.

2644 is not a perfect cube.

18. (B)

19. (B) c a b b a c | c a b b a c | c a b b a c

20. (C) a b c | a a b c | a a b b c | a a b b c c | a

21 (C) $\frac{\sqrt{49} + \sqrt{49} + \sqrt{16} + \sqrt{16}}{4} = \frac{7 + 7 + 4 + 4}{4} = 5.5$

$\frac{\sqrt{25} + \sqrt{81} + \sqrt{49} + \sqrt{81}}{4} = \frac{5 + 9 + 7 + 9}{4}$

$= \frac{30}{4} = 7.5$

$\frac{\sqrt{25} + \sqrt{64} + \sqrt{49} + \sqrt{36}}{4} = \frac{5 + 8 + 7 + 6}{4} = 6.5$

$\frac{\sqrt{81} + \sqrt{64} + \sqrt{25} + \sqrt{25}}{4} = \frac{9 + 8 + 5 + 5}{4} = \frac{27}{4} = 6.75$

22. (D) $\sqrt{251 - 107} = \sqrt{144} = 12$

$\sqrt{381 - 125} = \sqrt{256} = 16$

23. (D) $\frac{8 + 10}{2} = \frac{18}{2} = 9$

$\frac{7 + 7}{2} = \frac{14}{2} = 7$

$\frac{5 + 7}{2} = \frac{12}{2} = 6$

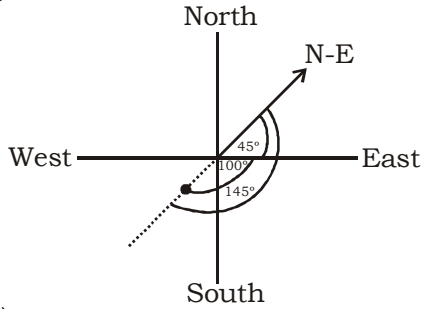
24. (D) $\frac{\sqrt{9} + \sqrt{36} + \sqrt{49} + \sqrt{64}}{4} = \frac{3 + 6 + 7 + 8}{4}$

$$= \frac{24}{4} = 6$$

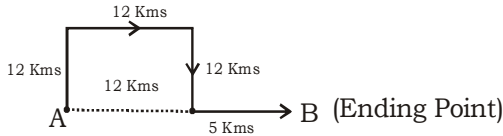
$$\frac{\sqrt{16} + \sqrt{25} + \sqrt{81} + \sqrt{100}}{4} = \frac{4 + 5 + 9 + 10}{4}$$

$$= \frac{28}{4} = 7$$

25. (B) North-East



26. (C)



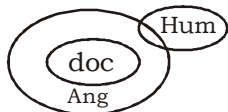
(Starting Point)

Here AB = 12 + 5 = 17 kms East

27. (B) $1 \div [1 + 1 \div \{1 + 1 \div (1 + 1/2)\}]$
 $= 1 \div [1 + 1 \div \{1 + 1 \div 3/2\}]$
 $= 1 \div [1 + 1 \div \{1 + 2/3\}]$
 $= 1 \div [1 + 1 \div 5/3]$
 $= 1 \div [1 + 3/5]$
 $= 1 \div 8/5$
 $= 5/8$

28. (C) CUPBOARD DROABPCU
 1 2 3 4 5 6 7 8 8 7 5 6 4 3 1 2
 Similarly,
 PRACTICE ECTICAPR
 1 2 3 4 5 6 7 8 8 7 5 6 4 3 1 2

29. (D)



I. x
 II. x

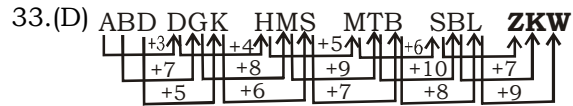
30. (A)



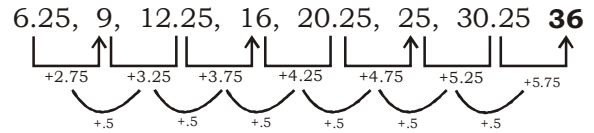
1. ✓
 2. x

31. (B) Market → Vegetebale → Cutting
 (2) (1) (3)
 → Cooking → Food
 (4) (5)

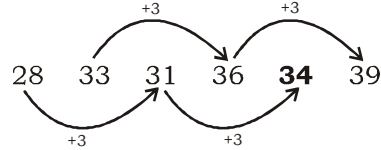
32. (C) Flower → Honey Bee → Honey → Wax
 (2) (3) (1) (4)



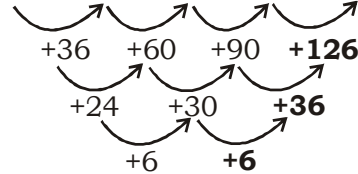
34. (A)



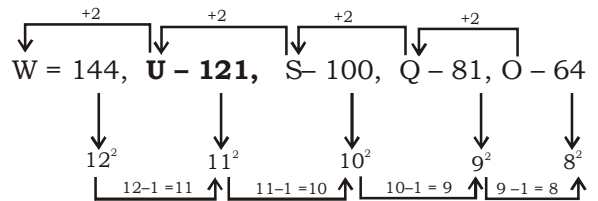
35 (B)



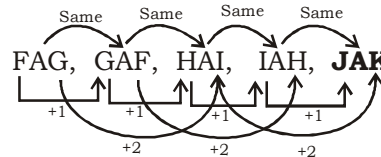
36 (B) 24, 60, 120, 210, 336



37. (A)



38. (A)



39. (C) After changing the signs we have,

$$= 5 + 8 \times 5 \div 5 = 1$$

$$= 5 + 8 \times 1 - 1$$

$$= 5 + 8 - 1$$

$$= 12$$

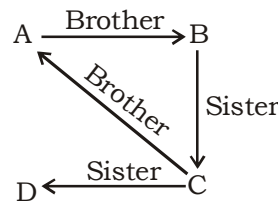
40. (C)

Academic → Acarpous → Accede → Accident → Across
 4 → 1 → 3 → 5 → 2

41. (A)

Wives - 3
 Mother - 1
 Daughter - 6
 Total 10

42. (C)



43. (C)

	Radha	Sujata	Manoj
Ages in year	$2x$	x	$4x$

ATQ,
 $2x + x + 4x = 70$
 $\Rightarrow 7x = 70$
 $\Rightarrow x = 10$
 \therefore Age of Radha
 $= 2x$
 $= 2 \times 10 = 20$

44. (D) Given,

B	E	A	T	R	U	S	T
↓	↓	↓	↓	↓	↓	↓	↓
25	22	26	7	9	6	8	7

So, S T R E E T
 ↓ ↓ ↓ ↓ ↓ ↓
 8 7 9 22 22 7

51. (C) Greenland is the world's largest island covering 2,175,597 square kilometers. Australia is not included in the list because it is defined as a continent rather than an island.

54. (D) The association of Lactic acid and its negatively-charged ionic form, lactate, with fatigue during exercise. During the course of a prolonged and intense effort, muscle lose power, due to the accumulation of higher concentration of Lactate and acid (Hydrogen) ions.

55. (C) IMF performs the following functions -
- (i) Providing short terms credit to member countries for meeting temporary difficulties due to adverse balance of payments.
 - (ii) Reconciling conflicting claims of member countries.
 - (iii) Providing a reservoir of currencies of member countries and enabling members to borrow on another's currency.
 - (iv) Promoting orderly adjustment of exchange rates.
 - (v) Advising member countries on economic, monetary and technical matters.

57. (C) On 13th February 1949, the Asian Athletic federation was formally inaugurated in New Delhi, along side the name Asian Games Federation, with New Delhi announced as the first host city of the Asian Games which were scheduled to be held in 1950.

59. (A) Marquess of Queensberry rules are the code of rules that most directly influenced modern boxin. These rules were first published in 1867 under the sponsorship of John Sholto Deuglas, ninth Marquess of Queensbery.

61. (A) Repo rate is the rate at which the Central Bank of a country (RBI in case of India) lends money to commercial banks in the event of any shortfall of funds.

62. (A) Scheduled banks are usually private, foreign and nationalised banks operating in India. Cooperative banks are allowed to seek scheduled bank status if they satisfy certain criteria. A scheduled bank is eligible for loans from the RBI at bank rate. They are also given membership to clearing houses. Also, scheduled bank in India, refers to a bank which is listed in the 2nd schedule of the Reserve Bank of India Act, 1934.

64. (D) Rabindranath Tagore is the first non-european to win a Noble Prize for literature in 1913. He was a poet, song writer, dramatist, novelist, painter and educator. He was offered a knighthood by king George V in 1915. However, he renounced his knighthood in 1919, following the Jalliwala Bagh massacre in which hundreds of Indians were killed.

67. (C) The 'Government of India Act 1935' was originally passed in August 1935 and is said to have been the longest (British) Act of Parliament ever enacted by that time. In this Act the degree of autonomy introduced at the provincial level was subject to important limitations:

- \Rightarrow The Provincial Governors retained important reserve powers.
- \Rightarrow The British authorities also retained a right to suspend responsible government.

69. (A) All India Khilafat Conference was held at Delhi in 1919. A Khilafat Committee was formed under the leadership of Ali brothers (Shaukat Ali and Muhammad Ali), Maulana Azad, Ajmal Khan and Hasrat Mohani, to force the British Government to change its attitude towards Turkey. Thus, a grounds for a country wide agitation were prepared.

71. (C) The Mudumalai National Park and wildlife sanctuary declared as Tiger Reserve, lies on the north-western side of the Nilgiri Hills in Tamil Nadu.

72. (D) Volcano Guallatiri in northern Chile (Just west of the Bolivian Border) is one of the northern Chile's most active volcanoes.

73. (A) Lake Manasarovar is near to the source of the Sutlej, which is the eastern-most large tributary of the Indus. Nearby the sources are Brahmaputra River, the Indus River and Ghaghara are important trbutaries of Ganga River also.

74. (B) The surface low-pressure belt at the equator is called the equatorial low pressure belt because pressure

gradients are weak, wind are light and weather is often rainy over equatorial region, therefore it is called the doldrums.

75. (D) Right to equality is a Fundamental Right guaranteed by the constitution of India. It includes equality before law, prohibition of discrimination on grounds of religion, race, caste, gender or place of birth and equality of opportunity in matters of employment, abolition of untouchability and abolition of titles.

77. (D) Article 356 deals with President's Rule. If the President is satisfied, on receipt of report from the Governor or otherwise, that 'the government of the state cannot be carried on in accordance with the provisions of the constitution', it will amount to the 'failure of constitutional machinery in the states'.

78. (A) According to Archimedes Principle the weight of floating body is equal to water displaced by it and sea water has more density than fresh water and its weight will be more. So, ship will slightly rise.

80. (C) \Rightarrow Sanyasi and Fakir rebellion - (1767-1800)
 \Rightarrow Santhal rebellion - (1789)
 \Rightarrow Indigo revolt- (1859)
 \Rightarrow Birsa Munda rebellion - (1875)

81. (D) Santosh Trophy is an annual Indian football tournament which is contested by states and Government institutions.

83. (C) Fiscal deficit is the difference between the revenue and expenditure of the government. This revenue does not consider the government debt as the borrowings occur to ride over the deficit. Also, the government debt actually represents the deficits accumulated by the government over many years.

101.(C) $\delta_{\text{conical}} = \frac{\gamma L^2}{6E}$

$$\delta_{\text{prismatic}} = \frac{\gamma L^2}{2E}$$

$$\delta_{\text{conical}} = \frac{1}{3} \left[\frac{\gamma L^2}{2E} \right]$$

$$\delta_{\text{conical}} = \frac{1}{3} \delta_{\text{prismatic}}$$

103.(A) In the case of tapered bar

$$S_{\text{taper}} = \frac{4PL}{\pi E d_1 \cdot d_2}$$

In the case of prismatic bar

$$\delta_{\text{prismatic}} = \frac{4PL}{\pi E (\sqrt{d_1 \cdot d_2})^2}$$

$$= \frac{4PL}{\pi E d_1 \cdot d_2}$$

So $\delta_{\text{taper}} = \delta_{\text{prismatic}}$

107.(D) $\sigma_x = 1200 \text{ MPa}$

$$\sigma_y = 600 \text{ MPa}$$

$$\tau_{xy} = 400 \text{ MPa}$$

$$\sigma_{\text{max}} = \frac{1200 + 600}{2} + \sqrt{\left(\frac{1200 - 600}{2}\right)^2 + 400^2}$$

$$\sigma_{\text{max}} = 1400 \text{ MPa}$$

116.(D) $m = 2 \text{ tonnes}$

$$= 2000 \text{ kg}$$

$$V = 2.5 \text{ m}^3$$

$$\rho = \frac{M}{V}$$

$$= \frac{2000}{2.5}$$

$$\rho = 800 \text{ kg/m}^3$$

131.(C) $P = 1750 \text{ KW}$

$$H = 100 \text{ m}$$

$$P_u = \frac{P}{H^{3/2}}$$

$$= \frac{1750}{100^{3/2}}$$

$$= \frac{1750}{1000}$$

$$P_u = 1.75 \text{ KW}$$

147. (D) $\alpha = 0^\circ$

$$t = 0.45$$

$$t_c = 0.45$$

$$r = \frac{t}{t_c} = \frac{0.45}{0.45} = 1$$

$$\phi = \tan^{-1} \left(\frac{r \cos \alpha}{1 - r \sin \alpha} \right)$$

$$= \tan^{-1} \left(\frac{1 \times 1}{1 - 0} \right)$$

$$= 45^\circ$$