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2007, OUTRAM LINES, 1ST FLOOR, NEAR GTB NAGAR METRO STATION, GATE NO. - 2, DELHI-110009

Answer-key & Solution

SSC JE (Electrical)
MOCK -(57)
Date 23 / 07 / 2016

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

Note : *If your opinion differ regarding any answer, please message the mock test and Question number to 8375805483*

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

SOLUTION SSC JE (Electrical) MOCK TEST no. 57

1. (A) Bullet is related to Gun. Similarly Smoke is related to Fire.

2. (B) Monday is related to Moon. Similarly Tuesday is related to Mars.

3. (A) $13 : 5 :: 32 : 24$
 $\begin{array}{ccc} & -8 & \\ \swarrow & & \searrow \\ & -8 & \end{array}$

4. (A) $63 : 9 :: 86 : 14$
 $\begin{array}{ccc} & 6+3=9 & \\ \swarrow & & \searrow \\ & 8+6=14 & \end{array}$

5. (A) $\begin{array}{cccc} & +1 & & +1 \\ \swarrow & & \searrow & \\ & +1 & & +1 \\ \swarrow & & \searrow & \\ & +1 & & +1 \end{array}$ B C D A : S T U R :: K L M J : V W X U

6. (B) $8 : 24 :: 6 : 32$
 $\begin{array}{ccc} & 2 \times 4 = 8 & \\ \swarrow & & \searrow \\ & 3 \times 2 = 6 & \end{array}$

7. (B) $\begin{array}{cccc} & +2 & & +2 \\ \swarrow & & \searrow & \\ & +2 & & +2 \\ \swarrow & & \searrow & \\ & +2 & & +2 \end{array}$ N J M P : P L O R :: R T V X : T V X Z

8. (D) Whale is a mammal.

9. (D) Fish can live in water only.

10. (D) (A) $9 \frac{1}{11} = \frac{100}{11}$ (B) $7 \frac{9}{13} = \frac{100}{13}$

(C) $5 \frac{15}{17} = \frac{100}{17}$ (D) $5 \frac{6}{19} = \frac{101}{19}$

11. (C) Option is different from all others. Others are following pattern -

1st 2nd 3rd
2nd 3rd 1st
3rd 1st 2nd

12. (A) (A) $\begin{array}{ccc} & +2 & \\ \swarrow & & \searrow \\ & +2 & \end{array}$ R P N (B) $\begin{array}{ccc} & +2 & \\ \swarrow & & \searrow \\ & +2 & \end{array}$ W S U

(C) $\begin{array}{ccc} & +2 & \\ \swarrow & & \searrow \\ & +2 & \end{array}$ H D F (D) $\begin{array}{ccc} & +2 & \\ \swarrow & & \searrow \\ & +2 & \end{array}$ L H J

13. (A) Option A is an order of square & cube number of 8.

8, 64, 512

$8^1, 8^2, 8^3$

14. (D) GREGARIOUS can not be formed using the letters.

15. (B)

16. (D)

17. (D)

3	15	4	$3 \times 4 + 3 = 15$
7	38	5	$7 \times 5 + 3 = 38$
3	?	5	$3 \times 5 + 3 = 18$

18. (B) 144 (132) 121 $\rightarrow 12 \times 11 = 132$

(Multiply the square root of the numbers)

64 (80) 100 $\rightarrow 8 \times 10 = 80$

19. (B) $14 \times 4 - 12 \times 3 = 20$

$9 \times 9 - 13 \times 3 = 42$

$12 \times 8 - 7 \times 11 = 19$

$20 \times 10 - 20 \times 8 = 40$

20. (B) 25/3/96, dates are given in 28 days gaps.

21. (B) $\begin{array}{ccccccc} & +5 & & +4 & & +3 & & +2 \\ \swarrow & & \searrow & & \searrow & & \searrow & \\ & 480 & & 96 & & 24 & & 8 & & 4 \end{array}$

22. (A)

AGMSY, CIQUA, EKQWC, **GMSYE**, IOUAG, KQWCI
 $\begin{array}{cccccccc} +2 & & +2 & & +2 & & +2 & & +2 \\ +2 & & +2 & & +2 & & +2 & & +2 \\ +2 & & +2 & & +2 & & +2 & & +2 \\ +2 & & +2 & & +2 & & +2 & & +2 \end{array}$

23. (D) **A O B N**, D R E Q, G U H T, J X K W

$\begin{array}{ccccccc} & +3 & & +3 & & +3 & & +3 \\ \swarrow & & \searrow & & \searrow & & \searrow & \\ & +3 & & +3 & & +3 & & +3 \end{array}$

24. (D) rose/rose/rose/rose

25. (D) q t s u / q t s u / q t s u

26. (A) M $\xleftarrow{\text{Sister}}$ K $\xleftarrow{\text{Brother}}$ J
 \downarrow Daughter
 N $\xrightarrow{\text{Brother}}$ P

27. (C) $175 \div 25 + 5 \times 20 - 3 \times 10$

$7 + 100 - 30$

$107 - 30 = 77$

28. (A) $2 \times 5 - 6 + 2 = 6$

$10 - 6 + 2 = 6$

$12 - 6 = 6$ (which is true)

29. (A) $\begin{array}{ccc} & \xleftarrow{10 \text{ km}} & \\ & 5 \text{ km} & 5 \text{ km} \\ & \downarrow & \downarrow \\ & 10 \text{ km} & 10 \text{ km} \\ & \downarrow & \downarrow \\ A & 5 \text{ km} & 5 \text{ km} & B \\ & \xrightarrow{20 \text{ km}} & \end{array}$

30. (A) Time of coincide = $\frac{60}{11} \times H$

$= \frac{60}{11} \times 6 = \frac{360}{11} = 32 \frac{8}{11}$ minute.

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104. (B) Here, $L = \frac{X_L}{2\pi f} = \frac{10}{2\pi \times 50} = \mathbf{31.8 \text{ mH}}$.

105. (A) Equivalent capacitance between a-b is 6 F. This capacitance is in series with 12F. The equivalent capacitance then becomes

$$\frac{6 \times 12}{6+12} \text{ F i.e., } 4\text{F.}$$

Hence $C_{xy} = 4 + 10 = \mathbf{14 \text{ F}}$

106. (D) In the circuit of Fig E2.14.

$$i = 5 = 2v$$

$$\therefore v = 5/2 = 2.5V$$

However,

$$v = ir$$

$$\text{or } 2.5 = 5R$$

$$\text{i.e., } \mathbf{R = 0.5\Omega}$$

108. (C) By applying KCL

$$i = \frac{25}{7} - \frac{4}{7} = \mathbf{3A}$$

Voltage source in series with constant current source will behave like short circuit.

109. (D) $R_{eq} = (3 || 2) + \frac{4}{5}$

$$= \frac{3 \times 2}{3+2} + \frac{4}{5} = \mathbf{2\Omega}$$

111. (D) $f_0 = 1.5 \text{ MHz}$

$$C = 150 \text{ PF}$$

$$\text{B.Q.} = 10 \text{ kHz}$$

$$Q = \frac{f_0}{\text{B.W.}} = \frac{1}{wRC}$$

$$\frac{1.5 \times 10^6}{10 \times 10^3} = \frac{1}{2\pi \times 1.5 \times 10^6 \times R \times 150 \times 10^{-9}}$$

So, $R = \mathbf{4.7\Omega}$

112. (C) $Z_{eq} = \frac{Z}{3} = \frac{9\angle 30^\circ}{3} = \mathbf{3\angle 30^\circ \Omega}$

117. (C) The load resistance for maximum power transferred = $\sqrt{8^2 + 6^2} = \mathbf{10\Omega}$

129. (C) $E_g = \frac{\phi ZN}{60} \left(\frac{P}{A} \right)$

$$= \frac{0.06 \times 32 \times 6 \times 2 \times 250}{60} \times \left(\frac{8}{2} \right) = \mathbf{384 \text{ V}}$$

161. (A) $S_{IL} = \frac{(KV_L)^2}{Z_o} = \frac{400^2}{400} = \mathbf{400 \text{ MW}}$

163. (C) Corona, is helpful in one respect, namely, it reduces the effect of surges and acts as a relief valve for them. This is so because the surges are partially dissipated as corona.

173. (C) Plant capacity factor =

$$\frac{\text{Peak load}}{\text{Plant capacity}} \times \text{load factor}$$

$$0.5 = \frac{30}{\text{Plant capacity}} \times 0.6$$

$$\therefore \text{Plant capacity} = 36 \text{ W}$$

$$\therefore \text{Reserve capacity} = \text{Plant capacity} - \text{Peak load} \\ = 36 \times 30 = \mathbf{6 \text{ MW}}$$

178. (C) $Z_{pu, new} = Z_{pu, old} \times \frac{MVA_{new}}{MVA_{old}} \left(\frac{kV_{old}}{kV_{old}} \right)^2$

$$Z_{pu, new} = 0.15 \left(\frac{1/2 \text{ MA}_{old}}{MVA_{old}} \right) \left(\frac{kV_{old}}{1/2 kV_{old}} \right)^2$$

$$= 0.15 \times \frac{1}{2} \times 4 = \mathbf{0.30}$$

179. (B) $Z_{base} = \frac{V_B^2}{S_B}$

$$Z_{actual} = Z_{pu}^{old} \times Z_{base}^{old}$$

$$Z_{pu}^{new} = \frac{Z_{actual}}{Z_{base}^{new}}$$

$$= Z_{pu}^{new} \times Z_{base}^{old} \times \frac{S_B^{new}}{(V_B^{new})^2}$$

$$Z_{pu}^{new} = Z_{pu}^{old} \times \frac{S_B^{new}}{S_B^{old}} \left(\frac{V_B^{old}}{V_B^{new}} \right)^2$$

191. (B) Here $V_C = 20 - 10I_C$

$$\therefore V_C = 20$$

$$\therefore I_C = 0$$

This is possible if $I_B = I_E = 0$ and this is possible if emitter is open.

194. (B) $V_{BB} = V_{BE} + V_{EE}$

In active mode

$$V_{BE} = 0.7V$$

$$V_{BE} = 0.7V$$

$$\therefore 3.2 = 0.7 + V_{EE}$$

$$\therefore V_{EE} = \mathbf{2.5V}$$

195. (D) $I_{CEO} = \frac{I_{CBO}}{1-a} = \frac{2\mu A}{1-0.99} = \mathbf{200 \mu A}$