

Answer-key & Solution

*SSC JE (Electrical)
Practice Set-2*

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

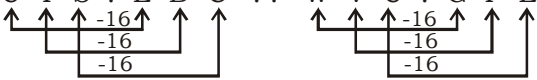
Note : *If your opinion differ regarding any answer, please message the mock test and Question number to 9560620353*

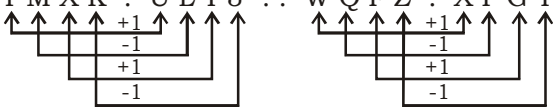
Note : *If you face any problem regarding result or marks scored, please contact: 9313111777*

SOLUTION SSC JE (Electrical) Practice Set-2

1. (C) 'When' is used for 'time'. In the same way 'where' is used for 'place'.

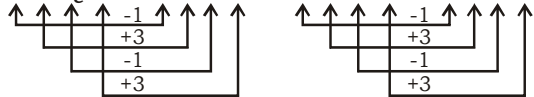
2. (B) A collection of book is called library. In the same way a collection of ship is called fleet

3. (C) U T S : E D C :: W V U : G F E


4. (C) T M X K : U L Y J :: W Q F Z : X P G Y


5. (B) 6 : 2 :: 8 : 3
 $(6 \div 2) - 1 = 2$ $(8 \div 2) - 1 = 3$

6. (B) Donkey is considered fool. In the same way Fox is considered cunning.

7. (A) M K Q O : L N P R :: Y S U W : X V T Z


8. (A) 365 : 90 :: 623 : 36
 $3 \times 6 \times 5 = 90$ $6 \times 2 \times 3 = 36$

9. (C) 212 : 436 :: 560 : 784
 $+224$

10. (B) 'Scissors' are used to cut 'Cloth'. In the same way 'Razor' is used to cut 'Beard'.

11. (C) All are the names of a particular group of people except 'C'.

12. (B) All have even letter except in 'B'

13. (B) (A) $\begin{matrix} G & E & C & A \\ -2 & -2 & -2 & \end{matrix}$ (B) $\begin{matrix} V & U & S & O \\ -1 & -2 & -2 & \end{matrix}$

(C) $\begin{matrix} P & N & L & J \\ -2 & -2 & -2 & \end{matrix}$ (D) $\begin{matrix} T & R & P & N \\ -2 & -2 & -2 & \end{matrix}$

14. (C) (A) $\begin{matrix} U & Z & D & G & I \\ +5 & +4 & +3 & +2 & \end{matrix}$ (B) $\begin{matrix} J & O & S & V & X \\ +5 & +4 & +3 & +2 & \end{matrix}$

(C) $\begin{matrix} R & W & A & C & F \\ +5 & +4 & +2 & +3 & \end{matrix}$ (D) $\begin{matrix} F & K & O & R & T \\ +5 & +4 & +3 & +2 & \end{matrix}$

15. (D) (A) $\begin{matrix} B & A & D & C \\ -1 & +3 & -1 & \end{matrix}$ (B) $\begin{matrix} J & I & L & K \\ -1 & +3 & -1 & \end{matrix}$

(C) $\begin{matrix} N & M & P & O \\ -1 & +3 & -1 & \end{matrix}$ (D) $\begin{matrix} V & U & W & X \\ -1 & +2 & -1 & \end{matrix}$

16. (A) (A) $66 - 56 = 10$
 (B) $101 - 90 = 11$
 (C) $41 - 30 = 11$
 (D) $43 - 32 = 11$

17. (D) (A) $\begin{matrix} J & L & N & K \\ +1 & +2 & \end{matrix}$ (B) $\begin{matrix} T & V & W & U \\ +1 & +2 & \end{matrix}$

(C) $\begin{matrix} A & C & E & B \\ +1 & +2 & \end{matrix}$ (D) $\begin{matrix} G & J & K & H \\ +1 & +1 & \end{matrix}$

18. (D)

19. (D) E = \$

R = 7

W & K = 4 & β

A = 9

KEWRA = \$β794

20. (C) Look (many) Books → sa (da) na
 (Many) more days → ka pa (da)

many → da

Books → either sa or na.

21. (A) The minute hand takes $65 \frac{5}{11}$ minutes to cross the hour hand.

According to question, the minute hand takes 65 minutes to cross the hour hand.

So, it gains $\frac{5}{11}$ minutes in every 65 minutes.

So, it gains in 65 minutes = $\frac{5}{11}$ minutes

It gains in 60 minutes

$$= \frac{60 \times 5}{11 \times 65} = \frac{60}{11 \times 13}$$

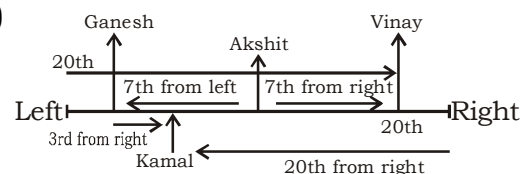
In 24 hours it will gains

$$= \frac{60 \times 24}{143}$$

$$= \frac{1440}{143} = 10 \frac{10}{143} \text{ minutes}$$

22. (C) 1, 3, (8, 5, 7), 2, 9, (8, 5, 7), 6, 3, (4, 7, 9), 4, 7, 6, 5, (8, 5, 3)

23. (B)



Now, total number of boys in the row
= position of Kamal from left +
position of Kamal from right - 1
= 20 + 9 - 1 = 28 boys

24. (B) $2 \quad 5 \quad 9 \quad 19 \quad 37 \quad 75$
 $\begin{array}{|c|c|c|c|c|} \hline \times 2+1 & \times 2-1 & \times 2+1 & \times 2-1 & \times 2+1 \\ \hline \end{array}$

25. (A) $8 \quad 24 \quad 12 \quad 36 \quad 18 \quad 54 \quad 27$
 $\begin{array}{|c|c|c|c|c|c|} \hline \times 3 & \div 2 & \times 3 & \div 2 & \times 3 & \div 2 \\ \hline \end{array}$

26. (A) $113 \quad 225 \quad 449 \quad 897 \quad 1793$
 $\begin{array}{|c|c|c|c|} \hline \times 2-1 & \times 2-1 & \times 2-1 & \times 2-1 \\ \hline \end{array}$

27. (D) $230 \quad 246 \quad 271 \quad 307 \quad 356$
 $\begin{array}{|c|c|c|c|} \hline + (4)^2 & + (5)^2 & + (6)^2 & + (7)^2 \\ \hline \end{array}$

28. (D) $DF \quad GJ \quad KM \quad NQ \quad RT \quad UX$
 $\begin{array}{|c|c|c|c|c|} \hline +3 & +4 & +3 & +4 & +3 \\ \hline \end{array}$

29. (A) $WUV \quad TRS \quad OOP \quad NLM \quad KIJ$
 $\begin{array}{|c|c|c|c|} \hline -3 & -3 & -3 & -3 \\ \hline \end{array}$
 $\begin{array}{|c|c|c|c|} \hline -3 & -3 & -3 & -3 \\ \hline \end{array}$

30. (B) $BDE \quad GIJ \quad LNO \quad OST \quad VXY$
 $\begin{array}{|c|c|c|c|} \hline +5 & +5 & +5 & +5 \\ \hline \end{array}$
 $\begin{array}{|c|c|c|c|} \hline +5 & +5 & +5 & +5 \\ \hline \end{array}$

31. (A) $(15 - 9) \times (22 - 16) \Rightarrow 6 \times 6 = 36$

$(13 - 9) \times (11 - 7) \Rightarrow 4 \times 4 = 16$

Similarly,

$(21 - 13) \times (x - 15)$

$= 8x - 120 = 64$

$\Rightarrow 8x = 120 + 64 = 184$

$\therefore x = 23$

32. (B) $\begin{array}{c} (3)^2 \\ \uparrow \\ \begin{array}{|c|c|} \hline 25 & 34 \\ \hline \end{array} \\ \downarrow \\ (4)^2 \end{array} + \begin{array}{c} (2)^2 \\ \uparrow \\ \begin{array}{|c|c|} \hline 40 & 13 \\ \hline \end{array} \\ \downarrow \\ (5)^2 \end{array} + \begin{array}{c} (7)^2 \\ \uparrow \\ \begin{array}{|c|c|} \hline 113 & 130 \\ \hline \end{array} \\ \downarrow \\ (8)^2 \end{array} + \begin{array}{c} (9)^2 \\ \uparrow \\ \begin{array}{|c|c|} \hline 145 & 145 \\ \hline \end{array} \\ \downarrow \\ (9)^2 \end{array}$

33. (C)

6	7
85	?
2	13
3	10

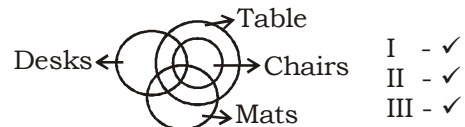
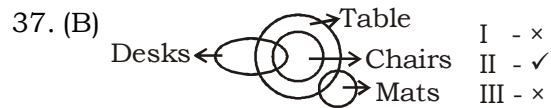
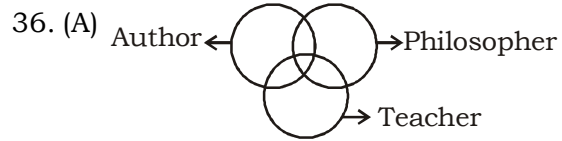
 $6^2 + 7^2 = 85$
 $2^2 + 3^2 = 13$
 $10^2 + 11^2 = 221$
 $7^2 + 8^2 = 113$

34. (A) In the first row $\Rightarrow 15 + 7 - 10 = 12$

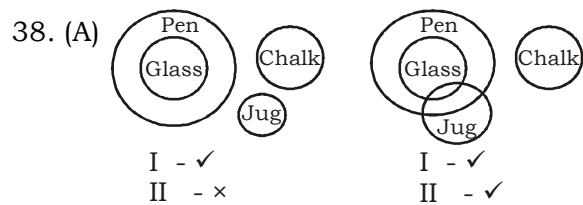
In the second row $\Rightarrow 36 + 9 - 20 = 25$

In the third row $\Rightarrow 28 + 11 - 24 = 15$

35. (C) $\begin{array}{|c|c|} \hline 9 & 5 \\ \hline \end{array} + \begin{array}{|c|c|} \hline 4 & 10 \\ \hline \end{array} \quad (9 + 5) = (4 + 10)$
 $\begin{array}{|c|c|} \hline 8 & 7 \\ \hline \end{array} + \begin{array}{|c|c|} \hline 6 & 9 \\ \hline \end{array} \quad (8 + 7) = (6 + 9)$
 $\begin{array}{|c|c|} \hline 12 & 6 \\ \hline \end{array} + \begin{array}{|c|c|} \hline 8 & 10 \\ \hline \end{array} \quad (12 + 6) = (8 + 10)$



Only II and follow



Only Ist follow.

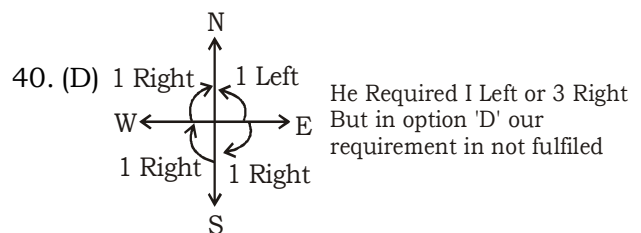
39. (A) $0 \ 1 \ 2 \ 3 \ 4 \ 5 \ 6 \ 7 \ 8 \ 9$
 $\alpha \ \beta \ \omega \ \delta \ \theta \ \eta \ \gamma \ \mu \ \nu \ \phi$

$\frac{\omega\eta\gamma}{\theta} - \nu\beta + \frac{\delta\alpha}{\omega} = ?$

$\frac{256}{4} - 61 + \frac{30}{2} =$

$64 - 61 + 15 = 79 - 61 = 18$

$18 = \beta\nu$

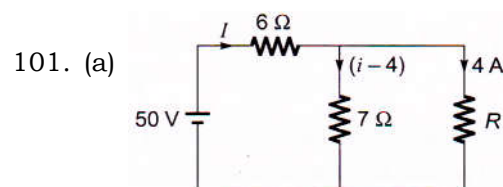


41. (B) Father's only sister = aunt

Aunt's son = cousin

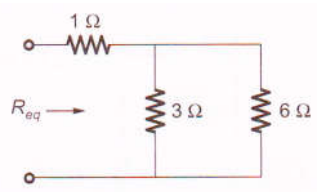
46. (C) abcd/abcd/abcd/abcd

50. (B) F A I T H
31 34 23 76 79



By applying KVL in 1st loop
 $50 = 6i + 7(i - 4)$
 $\Rightarrow 13i = 75$
 $\Rightarrow i = 6 \text{ A}$
 Now, by applying KVL in 2nd loop
 $7 \times 2 = 4 \times R$
 $R = 3.5 \text{ W}$

104. (d)



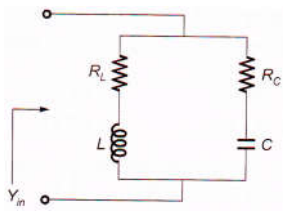
$R_{eq} = 1 + (3 || 6) = 3 \Omega$
 Voltage across current source
 $I_s R_{eq} = 2 \times 3 = 6 \text{ V}$

105. (c) Angle between voltage across R and inductor will be 30° as given

So, $\tan 30^\circ = \frac{X_L}{R}$; $R = \frac{X_L}{\tan 30^\circ} = \sqrt{3} X_L$

as $X_L = 1 \Omega$
 $R = \sqrt{3} \Omega$

111. (a)



If $R_L = R_C = \sqrt{\frac{L}{C}}$

The input admittance of the network is purely real irrespective of the frequency of operation

$\therefore 4 = \sqrt{\frac{1}{C}} \Rightarrow C = \frac{1}{16} \text{ F}$

119. (c) $R + 100 = \frac{10}{1 \times 10^{-3}} = 10,000 \Rightarrow R = 9900 \Omega$

120. (b) $m = \frac{5}{1 \times 10^{-3}} = 5000$

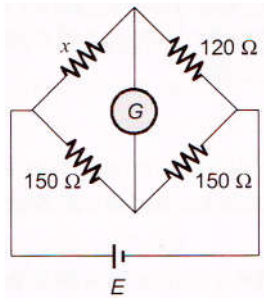
$R_{sh} = \frac{50}{(5000 - 1)} = \frac{R_m}{(m - 1)} \Rightarrow R_{sh} = 0.01 \Omega$

121. (b) Number of turns required

$= \frac{1}{\text{Resolution}}$

$= \frac{1}{\left(\frac{0.05}{100}\right)} = \frac{100 \times 10^2}{5} = 2000 \text{ turns}$

123. (b) $\frac{x}{150} = \frac{120}{150}$
 $\Rightarrow x = 120 \Omega$



141. (a) In lap winding no. of parallel paths $a = P = 6$

\therefore Resistance of single path R is given by

$\frac{R}{6} = 0.05 \Rightarrow R = 0.30 \Omega$

In wave winding $a = 2$, so single path would have resistance of $3R$.

\therefore armature resistance

$= \frac{3R}{2} = \frac{3}{2} \times 0.03 = 0.45 \Omega$

143. (b) Number of commutator segments = Number of coils.

Hence, option (b) is correct.

145. (d) At minimum efficiency variable loss = fixed loss

$x_2 \times (P_a)_{ft} = \text{Piron los}$

$x = \sqrt{\frac{40.5}{50}} = 0.9$

146. (d) % V.R. = $[(\% R) \times \cos \phi \pm (\% X) \times \sin \phi]$
 $= 2 \times 0.8 + 4 \times 0.6 = 4$

or, V.R. = 4%

148. (c) Rotor losses \cong rotor copper/ ohmic losses
 Rotor losses = airgap power - mech developed power

149. (d) $f_r = s f_s$
 $\Rightarrow 2 = s \times 50$

$\Rightarrow s = \frac{2}{50} = 0.04$

$N = \frac{120 \times 50(1 - 0.04)}{8} = 720 \text{ rpm}$

150. (d) Supply frequency $f = \frac{1000 \times 6}{120} = 60\text{Hz}$

as sf. i.e., slip frequency = 2 Hz

$\Rightarrow s = 0.04$

$\therefore N_s = \frac{120 \times 5}{8} = 750\text{rpm}$

$\therefore N_r = N_s(1-s)$
 $= 750(1 - 0.04) = 720\text{rpm}$

156. (d) Find the area under the load curve and then divide the same by 8760

$$\text{Average} = \frac{\text{Average load}}{\text{Peak load}}$$

$$= \frac{\text{Energy consumed in t hrs}}{\text{Peak load} \times t}$$

$$= \frac{1000 \times 100 + 10 \times 7760 + \frac{1}{2} \times 7760 \times 90}{100 \times 8760}$$

$$= \frac{526800}{8760 \times 100} = 0.6013 = 0.6013 \times 100\%$$

$$= 60.13\%$$

163. (a) $Y_{23} = -y_{23} = +j 10$
 $y_{23} = -j 10$

or $Z_{23} = \frac{1}{y_{23}} = +j0.1$

190. (c) $V_o = \left(\frac{12}{4} \times 1 + \frac{12}{6} \times 2 \right) 2 = -(3 + 4) = -7V$