



# KD Campus KD Campus Pvt. Ltd

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

## Answer-key & Solution

SSC JE (Electrical)  
MOCK -(113)  
Date 03/9/2017

1. C	26. D	51. C	76. C	101. B	126. A	151. B	176. A
2. C	27. A	52. B	77. B	102. B	127. C	152. C	177. B
3. A	28. C	53. C	78. D	103. C	128. D	153. A	178. D
4. C	29. A	54. A	79. C	104. B	129. B	154. B	179. B
5. B	30. A	55. D	80. B	105. D	130. A	155. C	180. B
6. A	31. B	56. D	81. D	106. D	131. D	156. C	181. B
7. B	32. B	57. A	82. A	107. A	132. B	157. C	182. B
8. A	33. D	58. B	83. C	108. A	133. C	158. B	183. D
9. A	34. D	59. D	84. B	109. C	134. D	159. A	184. A
10. A	35. C	60. A	85. A	110. B	135. C	160. C	185. B
11. C	36. C	61. C	86. A	111. B	136. D	161. A	186. B
12. B	37. B	62. C	87. D	112. C	137. B	162. B	187. A
13. C	38. D	63. B	88. D	113. D	138. D	163. B	188. D
14. A	39. C	64. A	89. D	114. B	139. D	164. C	189. B
15. B	40. B	65. B	90. D	115. D	140. D	165. B	190. B
16. B	41. C	66. C	91. D	116. D	141. B	166. B	191. B
17. C	42. A	67. C	92. B	117. D	142. A	167. C	192. A
18. B	43. B	68. C	93. B	118. A	143. C	168. C	193. B
19. D	44. C	69. A	94. D	119. B	144. A	169. A	194. B
20. A	45. A	70. C	95. B	120. B	145. A	170. C	195. D
21. B	46. C	71. C	96. D	121. C	146. A	171. A	196. C
22. C	47. C	72. B	97. A	122. D	147. C	172. C	197. B
23. D	48. D	73. D	98. B	123. C	148. A	173. D	198. C
24. A	49. B	74. C	99. C	124. B	149. A	174. B	199. C
25. B	50. C	75. C	100. C	125. A	150. B	175. C	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) MOCK TEST no. 113**

1. (C)  $2+25=27$   
 $1+26=27$   
 A B Z X  
 $1+26=27$   
 $3+24=27$   
 C D X W
2. (C) Flesh of 'Sheep' is called 'Mutton'. Similarly Flesh of 'Deer' is called 'Vension'.
3. (A) Cobbler works on leather. Similarly Tailor works on cloth.
4. (C) 1 2 3 4 5 6 2 3 4 5 6 1  
 SOCIAL : OCIALS  
 Similarly,  
 1 2 3 4 5 6 2 3 4 5 6 1  
 DRIVEN : RIVEND
5. (B)  $11 \times 11 = 121 + 11 = 132$   
 $9 \times 9 = 81 + 9 = 90$
6. (A)  $\frac{1}{9} : \frac{1}{81}, \frac{1}{13} : \frac{1}{169}$   
 $\times 9$        $\times 13$
7. (B) Malayalam is a language whereas the rest three are something in written form.
8. (A) 13 9 7 5      24 20 17 15  
 M I G E      X T O O  
 $-4 -2 -2$        $-4 -3 -2$   
 18 14 11 9      8 4 1 25  
 R N K I      H D A Y  
 $-4 -3 -2$        $-4 -3 -2$
9. (A) 42 is not divisible by 4.
10. (A) Year 2012 is a leap year whereas the rest are not leap years.
11. (C) Cylinder is a 3-D figure
12. (B) Submarine runs below the water while the rest on the water.
13. (C)  $4 \rightarrow 2 \rightarrow 3 \rightarrow 5 \rightarrow 1$
14. (A)  $3 \rightarrow 1 \rightarrow 2 \rightarrow 4$
15. (B) A C E B D F    C E G D F H  
 $+1$        $+1$   
 $+1$        $+1$   
 $+1$        $+1$
16. (B)  $+3$   
 $+3$   
 $+3$   
 A B C    P Q R    D E F    S T U    G H I  
 $+3$   
 $+3$   
 $+3$   
 $+3$   
 $+3$   
 $+3$

17. (C) 2, 3, 5, 9, 17, 33  
 $\times 2-1$     $\times 2-1$     $\times 2-1$     $\times 2-1$     $\times 2-1$
18. (B) 7, 12, 22, 42, 82, 162  
 $\times 2-2$     $\times 2-2$     $\times 2-2$     $\times 2-2$     $\times 2-2$
19. (D)  $5-5=0$        $7-3=4$   
 $0^2 \times 4=4$        $4^2 \times 4=64$   
  
 $11-8=3$        $8-2=6$   
 $3^2 \times 4=36$        $6^2 \times 4=144$
20. (A)  $9 \times 8 \times 3 = 216$   
 $6 \times 30 \times 5 = 900$   
 $7 \times 3 \times 8 = 168$
21. (B) 4, 10, 28, 82, 244, 730  
 $\times 3-2$     $\times 3-2$     $\times 3-2$     $\times 3-2$     $\times 3-2$
22. (C) 10000, 11000, 9900, 10890, 9801, 10781  
 [Current No. +(No. after excluding last digit)]  
 $10000 + 1000 = 11000$ ,  $9900 + 990 = 10890$   
 $9801 + 980 = 10781$
23. (D) 4, 8, 28, 80, 244, 728  
 $\times 3-4$     $\times 3+4$     $\times 3-4$     $\times 3+4$     $\times 3-4$
24. (A) 165, 195, 255, 285, 345, 375  
 $+30$     $+60$     $+30$     $+60$     $+30$
25. (B) **a b** / a b / a **b** / a b / a **b** / a b
26. (D)   
 '+' denotes female
27. (A) **m o p n** / m o **p n** / **m o p n** / m o p n
28. (C)  $E^+$  Brother  $\rightarrow$  N Brother  $\rightarrow$  M Brother  $\rightarrow$  D  
 (Here '+' denotes the male)
29. (A) B M O    E O O    H Q S    K S U  
 $+3$     $+3$     $+3$     $+3$   
 $+2$     $+2$     $+2$     $+2$   
 $+2$     $+2$     $+2$     $+2$
30. (A) One letter is omitted from left end to form the next word. Then after one letter is omitted from the right end to form next word.
31. (B) 

Word	Position as per English Alphabet
M	13 $\xrightarrow{+6}$ 19
A	1 $\xrightarrow{+6}$ 7
C	3 $\xrightarrow{+6}$ 9
H	8 $\xrightarrow{+6}$ 14
I	9 $\xrightarrow{+6}$ 15



- devalued when it loses value relative to other currencies in the foreign exchange market.
60. (A) Direct Action Day (16<sup>th</sup> Aug 1946) also known as Calcutta Riots, was manslaughter between Hindus and Muslims in the city of Kolkata in the Bengal province of British India. The Direct Action day was announced by the Muslim league council to show the strength of Muslims feelings both to British and Congress because they felt that it will result in the communal riots.
61. (C) The Indian rupee is a blend of the Devanagari 'Ra' and Roman 'R'. The new symbol was designed by Bombay IIT post graduate D Udaya Kumar.
63. (B) Mitosis is a process by which chromosomes in a cell nucleus are separated into two identical sets of chromosomes each in its own nucleus. In general, Mitosis is a division of nucleus and so organs repair themselves through this process.
64. (A) Hot currency - Money that flows regularly between financial markets as investors attempt to ensure that they get the highest short term interest rates possible. Hot money will flow from low interest rate yielding countries into higher interest rates countries by investors looking to make the highest return.
66. (C) Community Development is the method used in the Rural area and the agency through which the five year plan seeks to initiate a process of transformation of the social and economic life of the villages. The Main lines of activity are- Agriculture, Irrigation, communication, health, Education, Supplementary employment, Housing, Training, Social welfare, peoples participation (the crux of programme) etc. Because with the execution of the community development project, planning is also important. This infact is the essence of the project.
68. (C) Only charged particles can be accelerated in a magnetic field. A neutron does not have a charge, it is neutral so, cannot it be accelerated in a magnetic field.
69. (A) Vegetative propagation or a sexual propagation is the method of reproducing plants with the use of organs other than the seed and spores. Vegetative propagation allows the production of clones or plants which are considered duplicates of the parent plants genotypically and also phenotypically.
72. (B) Third five year plan (1961-1966) focussed on agriculture and improvement in the production of wheat, but two wars Sino-Indian war and India-Pak war exposed weaknesses in the economy and also there was severe drought in 1965.
81. (D) Isobars are lines on a weather map connecting points of equal atmospheric pressure.
82. (A) The colour of stars depends upon the temperature but actually it depends upon the amount of mass it has. Very massive stars, which can be over ten times the mass of the sun, are the hottest and smaller stars, with less than half the mass of the sun, are the coolest.
83. (C) Chemical name of Plaster of Paris is Calcium Sulphate Hemihydrate i.e.  $\text{CaSO}_4 \cdot \frac{1}{2} \text{H}_2\text{O}$ .
84. (B) Jhum cultivation is also known as shifting cultivation practised in states of North Eastern hilly region of India, Central Highland and people involved in such cultivation are called jhumia. The practice involves clearing vegetative/forest cover on land/ slopes of hills, drying and burning it before onset of monsoon and cropping on it thereafter. After harvest, this land is left fallow and vegetative regeneration is allowed on it till the plot becomes reusable for same purpose in a cycle.
88. (D) Chlorophyll is vital for photosynthesis, which allows plants to absorb energy from light and with the help of this plants prepare their own food.
89. (D) National Emergency (Article 352)- If the president of state is not satisfied with a grave emergency exists whereby the security of India or any part is threatened whether by a war or an external aggression or an armed rebellion, then he may proclaim a state of national emergency for the whole of India or a part of India. Such a proclamation of emergency may be revoked by the president subsequently. It may be subjected to the Judicial review and constitutionally can be questioned in a court of law on the grounds of malafide intention. It should be approved by both the houses of

- parliament within one month after proclamation.
90. (D) A good deal of parliament business is, therefore, transacted by what are called Parliamentary committees. They are of two types-adhoc and standing committee. The Principal adhoc committees are the selected and joint committees on Bills. Others like the Railway Convention committee, the committees on the draft five year plans and the Hindi equivalents. Standing committees act as Parliaments'. 'Watch dogs' over the executive committee on subordinate Legislation, the committee on Government Assurances, the Committee on Estimates, the committee on Public Accounts and the committee on Public Undertaking and department related standing committees (DRSCS).
91. (D) To connect the Janmabhoomi and Karmabhoomi of former Prime Minister Atal Bihari Vajpayee, the Indian Railways has decided to commence the operation of Sushasan express on December 25<sup>th</sup>, 91<sup>st</sup> birthday of the former PM Atal Bihari Vajpayee from Gwalior to Gonda via Lucknow. The trains would gradually be extended to Balrampur.
93. (B) Pistil is the ovule producing part of a flower. The ovary often supports a long style, topped by a stigma. The mature ovary is a fruit and the mature ovule is a seed.
97. (B) The first Battle of Tarain was fought between Sultan Mohammad Ghori and Prithviraj Chauhan in 1191 near the town of Tarain in Haryana. The army of Mohammed Ghori was defeated by the Rajput army of Chauhan.
- 104.(B) Let  $E_1, E_2$  be the e.m. fs of the two cells and  $r$  be the internal resistance of each cell. If  $R$  is the external resistance then,
- $$\frac{E_1 + E_2}{R + r} = 3 \text{ and } \frac{E_1 - E_2}{R + r} = 1$$
- $$\therefore \frac{E_1 + E_2}{E_1 - E_2} = 3$$
- On solving,  $E_1/E_2 = 2$
- 105.(D) Current through  $6 \Omega$  resistor,  $I_1 = 48/6 = 8A$

- Current through  $12 \Omega$  resistor  $I_2 = 48/12 = 4A$
- $\therefore$  Entering current,  $I = I_1 + I_2 = 8 + 4 = 12A$
- 108.(A) When heaters are connected in series, the total power  $P$  is given by :
- $$P = \frac{P_1 P_2}{P_1 + P_2} \quad \dots(i)$$
- Let  $Q$  be the heat required to boil 1 kg of water. Then,
- $$Q = P_1 t_1 = P_2 t_2 = pt$$
- $$\therefore \frac{Q}{t} = \frac{(Q/t_1) \times (Q/t_2)}{Q/t_1 + Q/t_2} = \frac{Q}{t_1 + t_2}$$
- or  $t = t_1 + t_2$
- 112.(C) Initial energy =  $\frac{1}{2} C_1 V_1^2 + \frac{1}{2} C_2 V_2^2$
- $$= \frac{1}{2} \times 10^{-6} [20 \times (500)^2 + 10 \times (200)^2] = 2.7 \text{ J}$$
- When the capacitors are connected in parallel, common potential  $V$  is
- $$V = \frac{C_1 V_1 + C_2 V_2}{C_1 + C_2} = \frac{10^{-6} [20 \times 500 + 10 \times 200]}{10^{-6} (20 + 10)} = 400V$$
- Final energy =  $\frac{1}{2} (C_1 + C_2) V^2 = \frac{1}{2} \times 10^{-6} (20 + 10) \times (400)^2 = 2.4 \text{ J}$
- $\therefore$  Loss of energy =  $2.7 - 2.4 = 0.3J$
- 113.(D)  $\mu_r = \frac{B_{iron}}{B_{air}}$  or  $B_{iron} = \mu_r \times B_{air} = 100 \times 10^{-2} = 1 \text{ Wb/m}^2$
- 116.(D)  $M = \frac{N_2 \phi_{12}}{I_1} = \frac{20 \times 2}{20} = 2H$
- 120.(B) Active component =  $\sqrt{10^2 - 6^2} = 8$
- Power factor =  $\frac{\text{Active Component}}{\text{Total current}} = \frac{I \cos \phi}{I}$
- $$= \frac{8}{10} = 0.8$$
- 122.(D) Reading of voltmeter =  $I (X_L - X_C) = I(0) = 0V$
- 131.(D) Energy consumed when disc makes 20 revolutions
- $$= \frac{1}{1500} \times 20 = \frac{1}{75} \text{ kWh}$$
- Now energy consumed is equal to load in kW multiplied by time in hours i.e.

$$\text{Load} \times \frac{3}{3600} = \frac{1}{75}$$

$$\therefore \text{Load} = \frac{1}{75} \times \frac{3600}{30} = 1.6 \text{ kW}$$

132.(B) Total circuit resistance,  $R = 20 + 10 = 30 \Omega$

$$\text{Current in potentiometer wire, } I = E/R = 3/30 = 1/10 \text{ A}$$

$$\text{P.D. across the wire} = \frac{1}{10} \times 20 = 2 \text{ V}$$

$$\therefore \text{Potential gradient} = 2/10 = 0.2 \text{ V/m}$$

139.(D) Input power,

$$P = \frac{\text{Output power}}{\eta} = \frac{100 \times 746}{0.92} = 8.1 \times 10^4 \text{ W}$$

$$\text{Input current} = \frac{P}{V} = \frac{8.1 \times 10^4}{500} = 162 \text{ A ;}$$

$$I_{sh} = \frac{V}{R_{sh}} = \frac{500}{250} = 2 \text{ A}$$

$$\therefore \text{Armature current} = 162 - 2 = 160 \text{ A}$$

$$\begin{aligned} \text{Back e.m.f., } E_b &= V - I_a R_a \\ &= 500 - 160 \times 0.1 = 500 - 16 = 484 \text{ V} \end{aligned}$$

$$\text{Now } E_b = \frac{\phi Z N}{60} \times \frac{P}{A}$$

$$\text{or } 484 = \frac{50 \times 10^{-3} \times 492 \times N}{60} \times \left(\frac{4}{2}\right)$$

$$\therefore N = 590 \text{ r.p.m.}$$

141.(B)  $I_2 = \frac{V_2}{R} = \frac{24}{9.6} = 2.5 \text{ A}$

142.(A) We shall assume power factor to be unity.

$$V_1 I_1 \cos \phi_1 = 4 \times 10^3 \quad \text{or}$$

$$\text{Primary current, } I_1 = \frac{4 \times 10^3}{100 \times 1} = 40 \text{ A}$$

149.(A) Frequency of rotor e.m.f.,

$$f' = \frac{105}{2 \times 60} = 0.875 \text{ Hz}$$

$$\text{Now } f' = sf \quad \text{or} \quad s = \frac{f'}{f} = \frac{0.875}{25} = 0.035 \text{ or}$$

3.5%

150.(B)  $N_s = \frac{120f}{P} = \frac{120 \times 50}{4} = 1500 \text{ r.p.m.}$

$$s = \frac{N_s - N}{N_s} \times 100 \quad \text{or} \quad 5 = \frac{1500 - N}{1500} \times 100$$

$$N = 1425 \text{ r.p.m.}$$

187.(A) The ripple voltage is directly proportional to the load current.

$$\therefore \text{Ripple voltage for a load of } 120 \text{ mA} = \frac{25}{60} \times 120 = 50 \text{ V}$$

191.(B) Approximate voltage gain with negative voltage feedback is

$$A_{vf} = \frac{1}{m_v} = \frac{1}{0.01} = 100$$