Answer-key & Solution

SSC JE (Electrical)
MOCK -(111)
Date 19/ 8/ 2017

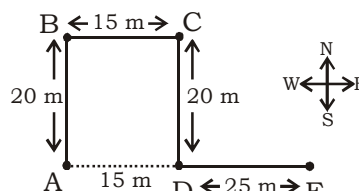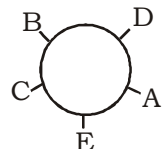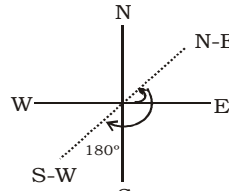|							
1. B	26. C	51. D	76. A	101. B	126. A	151. C	176. B
2. C	27. B	52. A	77. B	102. D	127. C	152. B	177. C
3. C	28. A	53. C	78. D	103. C	128. D	153. B	178. D
4. B	29. D	54. A	79. A	104. D	129. D	154. D	179. D
5. C	30. D	55. D	80. A	105. A	130. C	155. A	180. D
6. B	31. C	56. A	81. B	106. C	131. C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

1. (B) As Whale comes under Mammal group, in the same way Turtle comes under Reptile.

2. (C) $16^2 = 2\ 5\ 6$ $\qquad$ $18^2 = 3\ 2\ 4$

$\qquad\qquad 5\ 2\ 6 \qquad\qquad\qquad 2\ 3\ 4$

3. (C) $A \xrightarrow{+5} F \xrightarrow{+5} K \xrightarrow{+5} \boxed{P}$
$M \xrightarrow{+4} Q \xrightarrow{+4} U \xrightarrow{+4} \boxed{Y}$
$V \xrightarrow{+2} X \xrightarrow{+2} Z \xrightarrow{+2} \boxed{B}$

4. (B) As, $108 \xrightarrow{\div 4} 27$

Same as, $776 \xrightarrow{\div 4} 194$

5. (C) As, we get Calcium from Milk, in the same way, we get Protein from Pulses.

6. (B) DCBA **HGFE** STUV WXYZ

$+4, +4, +4, +4$ $\qquad$ $+4, +4, +4, +4$

7. (D) As, ACEG $\xrightarrow{\text{opposite letters}}$ ZXVT

same as, IKMO $\xrightarrow{\text{opposite letters}}$ RPNL

8. (D) As YAD : NUS $\longrightarrow$ DAY : SUN
Same as THGIN : NOON $\longrightarrow$ NIGHT: MOON

9. (D) As, Mouse is food of Cat, in the same way, Fly is food of Spider.

10. (C) Each block is shifting one step in clockwise direction.

11. (C) F C   G J   D A   E H
$\quad$ -3, +3 $\qquad$ -3, +3
$\quad$ K I   M P   H E   I L
$\quad$ -2, +3 $\qquad$ -3, +3

12. (C) Except Press, all others are related to a book.

13. (C) 2187 is not a perfect cube.
($11^3=1331$, $12^3 = 1768$, $17^3 = 4913$)

14. (D) '**S**' is a consonant here whereas rest of the options contain only vowels.

15. (C) 389 is a prime number whereas rest are divisible by 37.

16. (A) Rest are geometrical figure

17. (D) 57 is not a prime number.

18. (D) $17^2 + 7 = 296$ $\qquad$ $13^2 + 7 = 176$
$11^2 + 7 = 128$ $\qquad$ $12^2 + \mathbf{8} = 152$

19. (B) 1   2   12   5
$\quad$ A   B   L   E

∴ Letter pair = AB ⇒ One

20. (D) An essential part of given word KNOWLEDGE is **learning**, because by learning any one can get Knowledge.

21. (D)

Here sex of M is not known, so, M is either grandfather or grandmother of T

22. (C) **c** b b **g** / c **b** b g / **c** b **b** g

23. (D) 11   12   17   18   23   24   **29**   **30**
$\quad$ +1 +5 +1 +5 +1 +5 +1

24. (B) 2 **4** 2   3 **9** 3   4 **16** 4   5 **25** 5
$\quad$ × $\qquad$ × $\qquad$ × $\qquad$ ×

25. (B) P R O N O U N C I A T I O N
$\qquad$ 1   2 $\qquad\qquad$ 3

26. (C)

27. (B)

28. (A)

29. (D) Cover is not the part of the page whereas rest are the part of others.

30. (D) As, RED → $18 × 5 × 4 = 360$
Same as, GREEN → $7 × 18 × 5 × 5 × 14$
$\qquad\qquad\qquad\qquad = 44100$
Hence, GREEN can be coded as 44100.

31. (C) $\Delta = 7$ $\qquad$ $\square = 12$
$\Delta - 1 = 6 \Rightarrow \circ = 2$
then, $\Delta + \square + \circ = 7 + 12 + 2 = 21$

32. (A) Walking diagram of Ahmad is as given below.

Let point A is the starting point and point E is the end point of the path, travelled by Ahmad.
∴ Distance of Ahmad from his starting point = AD + DE
= BC + DE $\qquad$ [∵ AD = BC]
= (15 + 25) m = 40 m

33. (C) By given information in sitting arrangement is as follows

Hence, it is clear that B is sitting to the immediate left of C.

34. (D)

It is clear from diagram that now he is

facing South-West direction.

35.(*) $a + b \rightarrow a > b$ ....(i)

$b + c \rightarrow b > c$ ......(ii)

from equation (i) & (ii) we have

$a > b > c \Rightarrow a > c \Rightarrow a + c$

[Consider (b – c) as (b + c)]

36.(D) **COSMOS**

37.(C) The meaningful order of the given words are as below.

Birth $\rightarrow$ Education $\rightarrow$ Marriage $\rightarrow$ Death $\rightarrow$ Funeral
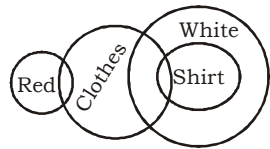
38.(D)

39.(C) Given (5 C 4) A (2 B 3) B 6

Now, place the mathematical sign of A, B and C

$= (5 \times 4) – (2 + 3) + 6$

$= 20 – 5 + 6$

$= 26 – 5 = 21$

40.(B) Starting position of hawker = Middle compartment of 17 boggies

$= \dfrac{17+1}{2} = \dfrac{18}{2}$ = 9th compartment

on next station, he enters the third compartment before the engine.

$\therefore$ New position of hawker = Third compartment next to the engine

Now, distance from his original position =

$= 9 – 3 = 6^{th}$ compartment.

Hence, hawker is in 6th compartment away from his original position.

41.(*) From given information, we have

$A > B$ ....(i)

$C > D > E$ ....(ii)

$A > D > B$ ....(iii)

It is clear from (i), (ii) & (iii) that both A and C can be the tallest.

42.(A)

43.(C)

44.(A)

A ✓
B ×
C ×
D ×

45.(B)   46. (B)   47. (C)

48.(B)   49. (D)   50. (D)

51. (D) GST stands for Goods and Services Tax. It is a comprehensive Indirect tax levied on manufacture, sale and consumption of goods as well as services at national level. It will replace all indirect taxes levied on goods and services by the Centre and State Government. Features of GST are –

(a) Because of its transparent character, this tax would be easier to administer.

(b) By amalgamating a large number of central and state taxes into a single tax, it would mitigate cascading and pave the way for a common national market.

(c) Indian products will become competitive in the domestic and International markets.

(d) Reduction in overall tax burden on goods i.e. 25%-30%

52. (A) 'CROWDING OUT' is an economic concept where increased public sector spending replaces or drives down private sector spending. It refers to the situation when government must finance its spending with taxes and /or with deficit spending leaving businesses with less money and effectively 'crowding them out'

53. (C) Tax Expenditure – are revenue losses attributable to tax provisions that often result from the use of the tax system to promote social goals without incurring direct expenditure.

Gift tax – A federal tax applied to an individual giving anything of value to another person.

Tax imposed on advertisement – is collected by the central government and then it is transferred to the state government.

Stamp duty – is a tax that is levied on documents such as cheques, receipts etc.

54. (A) Chelliah Committee was set up in August 1991 and headed by Dr. Raja Chelliah. The Committee pointed out that the indirect taxes at the Central level should be broadly neutral in relation to production and consumption of goods and will cover commodities and services. So, VAT (Value Added Tax) system will cover services and commodities.

55. (D) Proportional taxes apply the same tax rate to any income level or for any size tax base. Many state income taxes and almost all sales taxes are proportional taxes.

57. (D) Capitals of Vijaynagar dynasty are Anegondi, Chandragiri, Vellore, Penukonda.

59. (C) Railways were first introduced to India in 1853 from Bombay to Thane. In 1951 the system were nationalized as one

unit. In 1905, Railway Board was constituted but the powers were vested under Lord Curzon. For the first time in history, the Railways began to make profit in his reign.

60. **(A)** The Swadeshi movement was started to oppose the British decision for the partition of Bengal. The formal proclamation of Swadeshi movement was made on August 7, 1905 at Calcutta townhall and the famous boycott resolution was passed. Boycott was first suggested by Krishan Kumar Mitra in Sanjivani in 1905. Various students and women participated in the movement but not the farmers.

61. **(B)** Vasco da Gama was the first person to sail directly from Europe to India, around the cape of Good hope. In 1502, King Manuel once again sent Vasco da Gama to India to further secure Portugal's dominance in the region.

62. **(D)** Spam is most often considered electronic junk mail or junk newsgroup postings. It is also known as unsolicited email. So, it is related with computer.

63. **(A)** An input device is a peripheral (piece of computer hardware equipment) used to provide data and control signals to an information processing system such as a computer or information appliance. Examples are keyboards, scanner, digital cameras and Joysticks.

65. **(B)** Eucalyptus is a diverse genus of flowering trees and shrubs. The two common hazards of eucalyptus species are fire and its falling branches. Eucalyptus oil is highly inflammable (ignited trees have been known to explode). Bushfires can travel easily through the oil-rich air of the tree crowns and unexpectedly some trees may even drop branches, the weight of eucalyptus wood is high because of its density and high resin content.

66. **(C)** Impact of Global warming are -
   (i) Accelerating sea level rise and increased coastal flooding.
   (ii) Wild fires are increasing
   (iii) More frequent and intense heat waves
   (iv) National landmarks at risk
   (v) Costly and growing health Impacts
   (vi) Increase in extreme weather events.
   (vii) Glaciers are melting
   (viii) Changing seasons
   (ix) Disruptions to food supplies etc.

67. **(C)** Three gases are responsible for causing Acid rain i.e – carbon dioxide that dissolves in rain water produces carbonic acid. Sulphur dioxide dissolves in rain water produces Sulphuric acid which is highly corrosive and causes abbrasive effects to metals and rocks and at last NO_2 forms Nitric acid and Nitrous acid.

68. **(B)** Relative humidity is a function of both – how much moisture the air contains and the temperature. If you raise the temperature while keeping moisture content constant the relative humidity decreases.

69. **(B)** The high tide and low tide are caused by the gravitational forces between the earth and the moon. But sun does not cause any tide because the gravitational pull of the sun on the earth is larger than that of the moon. Due to the much greater distance the force changes very little from one end of the earth to the other.

70. **(D)** Residual mountains are formed due to denudation and erosion by which high plateaus are gradually shaped into peaks and ridges. Examples are Alpine-Himalayan system, the Catskill range in the southern New York state, The Grand Canyon is Arizona , USA is also the result of erosion by Colorado.

72. **(C)** Dormant Volcano is one that has not erupted recently but is expected to do so. Examples of Dormant volcanoes are Lake Barrine in Australia, Mount Kilimanjaro in Africa, Salina in Sicily, Italy etc.

73. **(A)** Koraput is a town and a Notified Area Council in Koraput district in Odisha. HAL factory (Hindustan Aeronautics Limited, a defence enterprise of the Government of India) is only 15 km from Koraput town. This HAL factory makes military aircraft engines for MIG and expanding for Sukhoi assembly line.The HAL factory and township is surrounded by hills and forest.

75. **(C)** The Tenth Schedule known as the Anti-Defection Act was included in the Constitution in 1985 by Rajiv Gandhi ministry and sets the provisions for disqualification of elected members on the grounds of defection to another

political party. The law was added by the 52nd Amendment Act, 1985.

76. (A) Central Vigilance Commission (CVC) was established in 1964, as an apex body for exercising general superintendence and control over vigilance administration. The term of office of the Central vigilance Commissioner would be four years from the date on which they enter their office or till they attain the age of 65 years, whichever is earlier.

77. (B) Article 317 of the Constitution deals with the removal and suspension of a member of Public Service Commission and can be removed from his office by the order of President on the ground of misbehavior.

78. (D) The Directive Principles lay down various tenets of a walfare state and give directives to the state and government machinery. But they are not enforceable, by the law.

80. (A) Chloroplasts are known as the kitchen of the cell because sunlight is absorbed by them and converted into energy and helps them in making food. So, chloroplasts are the organelles where plants prepare their own food.

81. (B) The Capsaicin (Capsaicinoids) are found in chillies bind to a receptor in the mucous membrane of the mouth when ingested. This is the receptor associated with heat and physical abrasion and hence produces a burning sensation.

83. (C) Polio or Poliomyelitis is a highly contagious viral infection that can lead to paralysis, breathing problems or even death.

84. (B) Turmeric is the rhizome on underground stem of a ginger like plant. The whole turmeric is the tuberous rhizome with a rough-segmented skin.

85. (B) Subsidy is the benefit given by the government to groups or individuals usually in the form of a cash payment or tax reduction. It is usually given to remove some type of burden and is often considered to be in the interest of the public. So, it is Revenue expenditure.

86. (B) GNP quantifies the size of a country's economy factoring in both what is produced within its border and what is generated by its citizens abroad.

GNP = GDP + Net income inflow from abroad – Net income outflow to foreign countries.

88. (C) Indian Finance Ministry has the authority to issue one rupee note. So on behalf of Indian Finance Ministry, Secretary of Finance signed on one rupee note whereas other higher value denomination notes are signed by RBI Governor.

89. (D) The troposphere is the lowest layer of Earth's atmosphere and site of all weather on Earth. It is bounded on the top by a layer of air called the tropopause which separates the troposphere from the stratosphere.

90. (B) Diphtheria is an acute and upper respiratory tract illness and infectious disease caused by the bacteria corynebacterium Diphtheriae. It is spread by direct physical contact or breathing the aerosolized secretions of infected individuals.

96. (B) Charle's law is also known as the law of volumes. It is an experimental gas law which describes how gases tend to expand when heated.

$V \propto T$
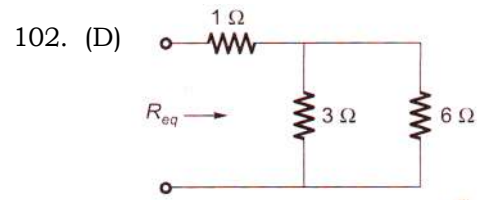
or, $\dfrac{V}{T} = K$

Where, V is the volume of the gas

T is the temperature of the gas (measured in Kelvin)

K is a constant

101. (B) $Y = \dfrac{1}{60 + j60} + \dfrac{1}{-j120} = 8.33 \times 10^{-3} \angle 0°$

$I = VY = 120 \angle 0° \times 8.33 \times 10^{-3} \angle 0°$

$= 1 + j0$

102. (D)

$R_{eq} = 1 + (3 \| 6) = 3\Omega$

Voltage across current source

$I_s R_{eq} = 2 \times 3 = 6$ V

103. (C) $I_R = \dfrac{24}{6} = 4\,A$

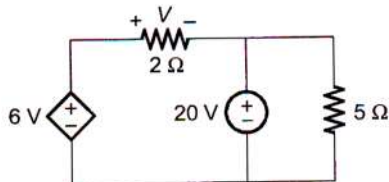Current delivered by the voltage source.

$I = I_R + 2I_R = 3I_R = 3\times4 = 12\,A$

Power delivered by the voltage source

$= 24 \times 12 = 288W$

104. (D)

$6V - V - 20 = 0$

$V = 4V$

Current through 2Ω resistor $\dfrac{V}{2} = \dfrac{4}{2} = 2A$

105. (A) For the given star NW,

$S = \sum\left(Z_1Z_2 + Z_2Z_3 + Z_3Z_1\right)$

$= (j1) \times (-j1) + (-j1)\,(-j1) + (-j1)\,(j1)$

$= 1 - 1 + 1 = 1$

For the equivalent delta NW,

$Z_{12} = \dfrac{S}{\text{opposite side}} = \dfrac{1}{-j1} = j1$

$Z_{23} = \dfrac{1}{j1} = -j1$

$z_{31} = \dfrac{1}{-j1} = j1$

106. (C) By shorting the voltage source. Thevenin's impedance to the left of A, B.

$Z_{th} = \dfrac{(3+j4)(-j5)}{(3+j4)-j5} = \dfrac{5(4-j3)}{(3-j1)}$

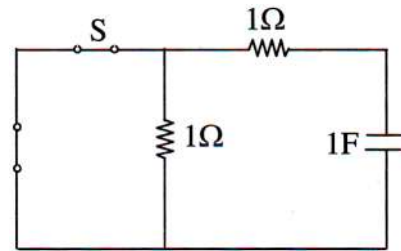$= \dfrac{5}{10}(4-j3)(3+j1)$

$= \dfrac{15-j5}{2} = (7.5 - j2.5)\Omega$

$\therefore$ Loud speaker impedance

$= Z_{th}^* = (7.5 + j2.5)\Omega$

107. (B) By opening the current source $R_N = R_{th} = (6+6)\|(5+9) = 6.46\,\Omega$

111. (B)

For t > 0, 10 V is across 1Ω,

Hence, the time constant is obtained from the circuit shown in Fig.

Time constant, $\tau = RC = 1 \times 1 = 1$ sec

112. (B) $V_s = \sqrt{(3)^2 + (14-10)^2} = 5V$

113. (C) In a parallel LC circuit under resonance

$I = \dfrac{V}{R}$, which is independent of frequency.

114. (A) $X_C = \dfrac{1}{\omega c} = \dfrac{1}{2\pi fc}$

If, f = 0 Hz $\rightarrow X_C = \infty\Omega$

If, f = 50 Hz $\rightarrow X_C \dfrac{10^6}{100\pi(10)}$

$= \dfrac{1000}{\pi} \approx 318\Omega$

132. (C) $\beta_{ac} = \dfrac{\Delta I_C}{\Delta I_B} = \dfrac{1.5mA - 0.5mA}{40\mu A - 20\mu A} = 50$

143. (D) $R_4 = \dfrac{R_2 \times R_3}{R_1}$

$= \dfrac{100 \times 5}{10}$

$= 50\Omega$

tolerance $= (5 + 3 + 2)\%$

$= 10\%$

least tolerance value of $R_4 = 50 \pm 10\%\Omega$

159. (A) Total voltage generated $= \dfrac{400}{8} \times 2$

$= 100$ Volt

200. (A) $SIL = \dfrac{(KV_L)^2}{Z_0} = \dfrac{400^2}{400} = \mathbf{400\ MW}$