Answer-key & Solution

SSC JE (Electrical)
MOCK -(77)
Date 17/ 12/ 2016

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

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. 77

1. (C)

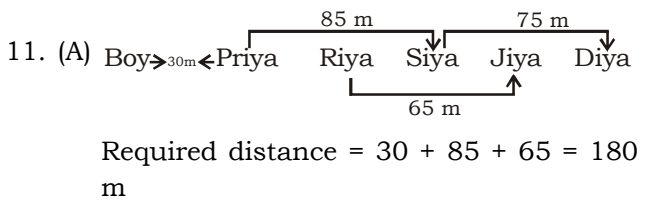2. (D) Second is the quality which is present in the first except in option (D).

3. (C)

$$\underset{F}{\text{A B C}} : \underset{I}{\text{B C D}} :: \underset{L}{\text{C D E}} : \underset{O}{\text{D E F}}$$

(with +1 relations and +3)
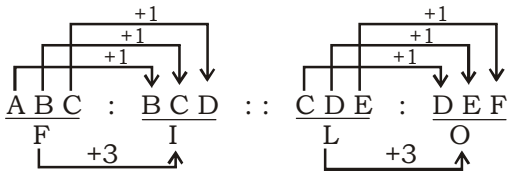
4. (C) 212 + 224 = 436
560 + 224 = 784

5. (B) Music is a combination of Notation. Similarly, the pattern of poem is formed by the combination of Stanza.

6. (D) $9\dfrac{1}{11} = \dfrac{100}{11}$; $7\dfrac{9}{13} = \dfrac{100}{13}$; $5\dfrac{15}{17} = \dfrac{100}{17}$

But, $5\dfrac{6}{19} = \dfrac{101}{19}$

7. (C) In all other options money is deposited whereas amounts is paid in the salary.

8. (C) 84 – 67 = 17
112 – 95 = 17
79 – 63 = 16
167 – 150 = 17

9. (D)
(A) R G T F (+2, –1)
(B) M L O K (+2, –1)
(C) C T E S (+2, –1)
(D) V D Z C (+4, –1)
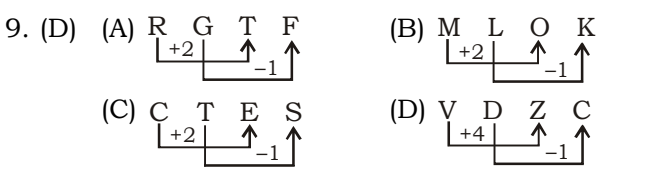
10. (A) $\dfrac{\text{Leopard}}{6}$ $\dfrac{\text{Load}}{4}$ $\dfrac{\text{Loan}}{3}$ $\dfrac{\text{Loath}}{1}$ $\dfrac{\text{Long}}{2}$
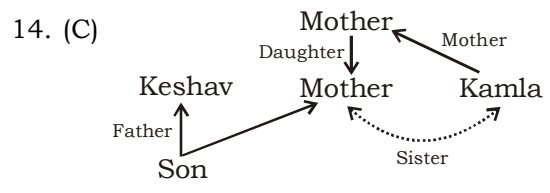
$\dfrac{\text{Luminous}}{5}$

11. (A) Boy →30m← Priya   Riya   Siya   Jiya   Diya
(85 m, 75 m, 65 m)

Required distance = 30 + 85 + 65 = 180 m

12. (C)
8 – 5 9 – 6 5 – 2
↓   ↓   ↓
3   3   3

8 – 2 10–4 15–9
↓   ↓   ↓
6   6   6

13. (B)
6–3   15–9   14–12
↓   ↓   ↓
3   6   2

14 × 4 = 56   16×4 = 64   15 × 4 = **60**
$\sqrt{25}$ = 5 $\sqrt{81}$ = 9 $\sqrt{49}$ = 7

14. (C)

Mother
Daughter ↓   Mother
Keshav   Mother   Kamla
Father ↑   Son   Sister

15. (C)

16. (A) Moc [Don] Cil → Beautiful Big [House] ....(i)
(Fit) Kon [Don] → [House] (is) Fine ....(ii)
Bai Tin (Fit) → Cost (is) More ....(iii)

From eq. (i) & (ii)
House and Don are common
So, House ⇒ Don
From eq. (ii) & (iii)
'Is' and 'Fit' are common
So, Is ⇒ Fit
Then, Kon ⇒ Fine   [from eq. (ii)]

17. (C) Let the number of boys be x.
$2x + 4(7 – x) = 20$
$2x + 28 – 4x = 20$
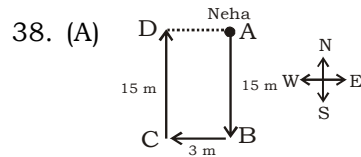$8 = 2x$
$4 = x$
Then, number of dogs = 7 – 4 = 3

18. (B)
Seed
Flower | Stem
Fruit | Bud
Left

19. (D) b a a **b**/**b** a a b/**b** a a b/b **a** a b

20. (A) N M T P O V R Q X T S Z
(+2 relations)
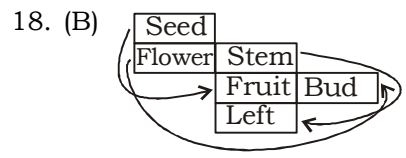
21. (B)
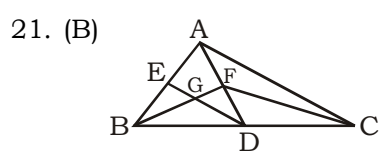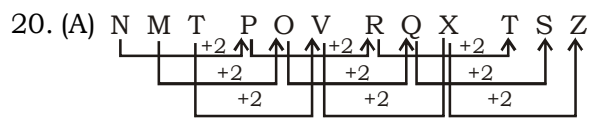
There are 13 triangles in the given figure.
ΔABC, ΔABD, ΔADC, ΔAFC, ΔFDG,

ΔAFB, ΔFDB, ΔFBC, ΔGBD, ΔADE, ΔGBE, ΔFDG and ΔDBE

22. (C) People who don't play any game

= 40 – (25 + 22 – 16)

= 40 – 31 = 9

23. (B)   24. (B)   25. (A)

26. (B) Cloth is made from thread. Similarly, Mesh is made from wire.

27. (A) $\dfrac{K}{T} = \dfrac{11}{20}$ $\longrightarrow$ Place value $\longrightarrow$ Place value

Similarly,

$\dfrac{J}{R} = \dfrac{10}{18}$ $\longrightarrow$ Place value $\longrightarrow$ Place value

28. (A) Stamp collectors are called the Philatelist. Similarly, coins collectors are called the Numismatist.

29. (A) B   O   R   E
        ↓   ↓   ↓   ↓
        2 +15+18 +5 = 40

40÷ 4 = 10 (Divided by the number of letters)

Similarly,

        H   O   T   E   L
        ↓   ↓   ↓   ↓   ↓
        8+15+20+5+12 = 60

60÷5 = 12 (Divided by the number of letters)

30. (B) Cloth is cut by Scissors. Similarly, Wood is chopped by Axe.

31. (D) Except option (D) all games are played between two players.

32. (C) Except option (C), all are related to entertainment.

33. (D) Except option (D), all other pairs are composite number.

34. (C) Except option (C) all are related to navy.

35. (D)   24 + 8 – 4 × 2 ÷ 3 = 47

After changing the sign

24 × 8 ÷ 4 + 2 – 3 = 47

= 24 × 2 + 2 – 3 = 47

= 48 + 2 – 3 = 47

= 50 – 3 = 47

= 47 = 47 (True)

36. (B) Rahul : Rani = x : 10x

Today = x + 10x + $\underline{10\ yrs}$ = 32 yrs.

5 yrs of each

11x = 22

x = 2

Rahul : Rani = 2 : 20   (5 yrs ago.)

        +15| +15| after 10 yrs
          ↓   ↓   from today
                               (Total 15 yrs)
        17 yrs   35 yrs

37. (B) $\dfrac{Stone}{5}$ $\dfrac{Rock}{1}$ $\dfrac{Hill}{2}$ $\dfrac{Mountain}{3}$ $\dfrac{Range}{4}$

38. (A)

N
W ← → E
S

Hence, Neha is facing towards the North direction.

39. (C) RETU**R**N

40. (B) (2 + 6 + 2 + 3)² –1 = 168

(3 + 5 + 1 + 2)² –1 = 120

(2 + 3 + 5 + 4)² –1 = **195**

41. (B) $\dfrac{15+12}{3} = 9$; $\dfrac{44+28}{8} = 9$;

$\dfrac{64+53}{\mathbf{13}} = 9$

42. (A) $\sqrt{169} + \sqrt{64} + \sqrt{81} = 13 + 8 + 9 = 30$

$\sqrt{625} + \sqrt{\mathbf{324}} + \sqrt{44} = 25 + 18 + 7 = 50$

$\sqrt{1296} + \sqrt{576} + \sqrt{100} = 36 + 24 + 10 = 70$

43. (A) P
        ↓
        Q⁺ —→ R⁻
        ↓
        X⁻   L⁺

So, L is grandson of P.

44. (B)

45. (A) 2   6   12   20   30   42   **56**
          └+4┘└+6┘└+8┘└+10┘└+12┘└+14┘

46. (B) a a **a** / b a a **b** / a a **a** / b a **a** b

47. (B)

Cricket
IPL   T-20

48. (C)

49. (C) Three meaningful word.
ELECTION
ELECTRON
ELECTRIC

50. (B)

51. (C) The amoebas do not have nervous system, but they communicate by means of the interaction of the cellular membrane with the outside that surrounds them. In response to an injurious stimulus, irritating or nutritional, the intracellular communication produces a reaction of the complete cell, moving away or approaching the respective stimulus.

53. (C) Hot money is a term that is most commonly used in financial markets to refer to the flow of funds for capital) from (or capital) from one country to another in order to earn a short-term profit on

interest rate differences and/or anticipated exchange rate shifts. These speculative capital flows are called "hot money" because they can move very quickly in and out markets, potentially leading to market instability.

55. (B) The Indian citizenship and nationality law and the constitution of India provide single citizenship for all of India. However, there is a form of Indian nationality, the holders of which are known as Overseas Citizens of India. Prime Minister, Atal Bihari Vajpayee, on January 10, 2003 announced a provision for dual citizenship for People of Indian Origin (PIO) living in certain countries. Dual citizenship was made available to PIOs of seven countries-the US, Canada, Australia, New Zealand, Singapore and Malaysia.

57. (C) Rajasthan is a land-locked state which is bordered by Pakistan to the west, Gujarat to the south-west, Madhya Pradesh to the south-east, Uttar Pradesh and Haryana to the north-east and Punjab to the north.

58. (C) A microcomputer is a small relatively inexpensive computer with microprocessor as its Central Processing Unit (CPU). It is most commonly associated with the first wave of all-in-one 8-bit home computers and small business microcomputer (such as the Apple II, Commodore 64, BBC Micro, and TRS 80).

60. (C) The composition consisting of the words and music of the first stanza of the late poet Rabindra Nath Tagore's song known as "Jana Gana Mana" which is the National Anthem of India. Its playing time is approximately 52 seconds.

62. (D) At present, the IUCN Red List of Threatened Species (also known as the Red Data List) lists eight classes of organism under the group of threatened categories of critically endangered. The classes of organism for which the 'threatened' tag is applied are mammals, birds, reptiles, amphibians, fishes, insect, mollusc and plants.

66. (B) Satyameva Jayate (Truth Alone Triumphs) is a mantra from the ancient Indian scripture Mundaka Upanishad which is one of the earlier, primary(mukhya) Upanishad , a genre of Hindu scriptures commented upon by Shankara. It is associated with the Atharva Veda. Upon independence of India, it was adopted as the national motto of India. The origin of the motto is a well-known mantra 3.1.6 from the Mundaka Upanishad.

67. (C) With the onset of World War I, the British stiffened censorship and restrictions on political activity. Azad's Al-Hilal was consequently banned in 1914 under the Press Act for spreading extremist views. From November 12, 1915, Azad started a new journal, the Al-Balagh and again he started propagating revolutionary ideas and nationalism through this paper. During that time he supported the Khilafat movement. In 1916 the government banned Al-Balagh under Defence of India Regulation Act.

69. (B) Calcium Sulphate is a common laboratory and industrial chemical. In the form of anhydrite (the nearly anhydrous form), it is used as a desiccant. It is also used as coagulant in products like tofu. The main sources of calcium sulphate are naturally occurring gypsum and anhydrite which occur at many locations worldwide as evaporates.

70. (A) Biogas typically refers to a gas produced by breakdown of organic matter in the absence of oxygen. Organic waste such as dead plant and animal material, animal faeces and kitchen waste can be converted into a gaseous fuel called biogas. Biogas originates from biodegradable materials such as biomass, manure, sewage, municipal waste, green waste, plant material, and crops, Biogas comprises primarily methane (CH_4) and carbon dioxide (CO_2) and may have small amounts of hydrogen Sulphate (H_2S)k, moisture and siloxanes.

71. (C) The Ashoka Chakra is a depiction of the Buddhist Dharmachakra, represented with 24 spokes. The most visible use of the Ashoka Chakra today is at the centre of National flag of the Republic of India (adopted on 22 July, 1947), where it is rendered in a Navy-blue colour on a White background by replacing the symbol of Charkha (Spinning wheel) of the pre-independence versions of the flag.

73. (C) The international Monetary Fund has headquarters in Washington, D.C., United States. It is an international organization that was created on July 22, 1944 at the Bretton Woods conference and came into existence on December

27, 1945 when 29 countries signed the Articles of Agreement.

74. (C) Gross domestic product (GDP) is the market value of all officially recognized final goods and services produced within a country in a given period of time. The united Nations Conference on the Law of the Sea has defined sovereign rights over international waters by defined concepts as Internal waters, exclusive economic zones (EEZs), continental shelf jurisdiction, etc. According to this law, the income generated by Indian fishermen would be accounted in GDP of India.

75. (C) The decibel (DB) is a logarithmic unit that indicates the ratio of a physical quantity (usually power or intensity) relative to a specified or implied reference level. A ratio in decibels is ten times the logarithm to base 10 of the ratio of two power quantities.

78. (C) Services provided by housewives can be categorized as non-economic services and thus cannot be accounted in national income which is the sum total of all the goods and services produced in a country, in a particular period of time.

80. (D) The Volga is the largest river in Europe in terms of length, discharge, and watershed. It flows through the western part of Russia and is widely viewed as the national river of Russia.

82. (C) Contour ploughing is the farming practice of ploughing across a slope following its elevation contour lines. The rows from slow water run-off during rainstorms to prevent soil erosion and allow the water time to settle into the soil.

89. (B) 'Terra Rossa' in Latin or Italian language is another name for "Red Soil" or "Red Terrain". It is a type of red clay soil produced by the weathering of limestone. Terra Rossa is typically found in regions with a Mediterranean climate.

90. (D) Lysosomes are known as digestive bag because it digest foreign material as well as worn out cell organelles. They contain powerful digestive enzymes which are capable of breaking down all organic materials.

92. (B) The red blood cells develop in the bone marrow and circulate for about 100-120 days in the body before their components are recycled by macrophages. Each circulation takes about 20 seconds. Approximately a quarter of the cells in the human body are red blood cells.

94. (A) Rajendra Kumar Pachauri has been serving as the chairperson of the Intergovernmental Panel on Climate Change since 2002, who was awarded the Nobel Peace Prize in 2007 during his tenure. The IPCC shared the 2007 Nobel Peace Prize with former U.S. Vice President Al Gore, who had earlier criticised Pachauri when he was first elected in 2002.

95. (B) Dr. A.P.J. Abdul Kalam is the undisputed father of India's missile programme. He has breathed life into ballistic missiles like the Agni and Prithvi, which put China and Pakistan well under India's missile range. It is too exhausting to track Dr Abdul Kalam's achievements to date. In the 60s and 70s he was a trail blazer in the space department. In the 80s he transformed the moribund Defence Research and Development Laboratory in Hyderabad into a highly motivated team. By the 90s Kalam emerged as the boon for Indian science and technology and was awarded the Bharat Ratna.

96. (C) All proteins contain Nitrogen. Precisely, they contain about 16 percent Nitrogen. The determination of protein requirement is based on Nitrogen balance, which include total Nitrogen in food and excreta.

97. (B) The 52nd Constitutional Amendment of 1985 amended articles 101, 102, 190 and 191; and inserted Schedules 10 to the Constitution of India. It dealt with the Anti Defection Law and provided disqualification of members from parliament and assembly in case of defection from one party to other.

99. (A) Pitch is a perceptual property that allows the ordering of sounds on frequency-related scale. Pitch may be quantified as a frequency – related scale. Pitch is not a purely objective physical property. It is a subjective psycho-acoustical attribute of sound. When the frequency is high, the wavelength of the sound is shorter.

182. (D) It is not possible to determine the voltage across 1 A source.

183 (D)

The circuit is shown below
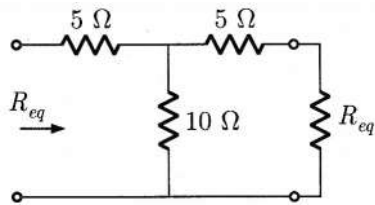
$$R_{eq} = 5 + \frac{10(R_{eq}+5)}{10+5+R_{eq}}$$

$$R^2_{eq} + 15R_{eq} = 5R_{eq} + 75 + 10R_{eq} + 50$$

$$R_{eq} = \sqrt{125} = 11.18\Omega$$

184. (D) $\upsilon_{t_2} - \upsilon_1 = \frac{1}{2}\int_{t_1}^{t_2} i\,dt$

$$\Rightarrow \qquad 12 = \frac{1}{2}2m(t_2 - t_1)$$

$$\Rightarrow \qquad 12C = 2m \times 10$$
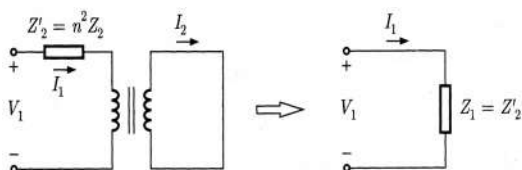
$$\Rightarrow \qquad C = 1.67\ mF$$

185. (B)

$$\upsilon_a = 2(3+1) + 3(1) = 11V$$

186. (C) $L_{eq} = L_1 - \frac{M^2}{L^2} = 4 - \frac{4}{2} = 2H$

187. (A)
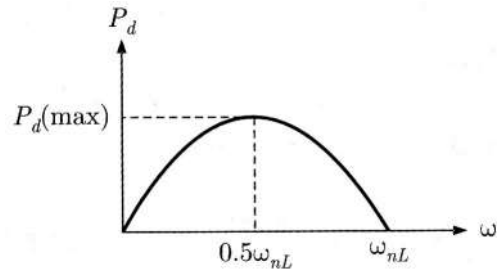
Referring impedance from primary to secondary

Where

$Z'_2 = n^2Z_2$ $\qquad \therefore n = 300/150 = 2$

Effective impedance on primary side

$Z_1 = Z'_2 = (2)^2 5\angle 30^0 = 20\angle 30^0 \Omega$

$Current \quad I_1 = \frac{V_1}{Z_1} = \frac{200}{20\angle 30^0} = 10\angle -30^0 A$

188. (A) For a dc shut motor power-speed characteristic is shown below

Developed power will be maximum at a speed equals to 0.5 w_{ml}.

189. (C)

since the voltage of the generator is directly proportionla to the speed of the generator. the new terminal voltage

$$V_t = \frac{6}{5} \times 1000 = 1200V$$

190. (D)

In a multicage rotor at starting, the inner cage presents a high leakage reactance compared with the outer cage . Therefore the rotor current tends to confine itself in the outer cage causing the starting current will be lower.

191. (B)

Number of stator teeth N_s = 12
Number of rotor teeth N_r = 8

step angle $\qquad \alpha = \frac{N_s - N_r}{N_s N_r} \times 360^0$

$$= \frac{(12-8)}{12 \times 8} \times 360^0 = 15^0 / step$$

Hence (B) is correct option.

196. (B)

Number of turns required

$$= \frac{1}{resolution}$$

$$= \frac{1}{\dfrac{0.05}{100}} = \frac{100 \times 10^2}{5}$$

2000 turns