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

# Answer-key & Solution

***SSC JE (Mechanical)***
***MOCK -(55)***
***Date 09 / 07/ 2016***

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

***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 (Mechanical) MOCK TEST no. 55

1.(C) Andhra Pradesh is called 'Rice bowl of India'. Similarly, Mumbai is called 'Manchester of India'.

2.(D) Calcium is found in milk. Similarly, protein is found is pules.

3.(A) $36 : 144 :: 576 : 2304$

$(6)^2 \xrightarrow{\times 2} (12)^2 :: (24)^2 \xrightarrow{\times 2} (48)^2$

4.(D) $55 \xrightarrow{(5\times5+1)} 26 :: 13 \xrightarrow{(1\times3+1)} 4$

5.(C)

6.(C) The addition of the digits 11529 = 1 + 1 + 5 + 2 + 9 = 18, 72135 = 7 + 2 + 1 + 3 + 5 =18 and 152943 = 1 + 5 + 2 + 9 + 4 + 3 = 24.
Similarly, the addition of the digits 213549 will be = 2 + 1 + 3 + 5 + 4 + 9 = 24

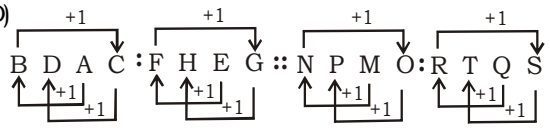
7.(D) $8 : 28 :: 27 : 65$

$(2)^3 \quad (3^3+1) \quad (3)^3 \quad (4^3+1)$

8.(B)

9.(C)

10.(D)




11.(B)

12.(D)

13.(B) Remaining are related to circle

14.(C) (A) Z X V T (-2, -2, -2) (B) U S Q O (-2, -2, -2)
(C) D E F G (+1, +1, +1) (D) P N L J (-2, -2, -2)

15.(A) (A) A F C G (+5, -3, +4) (B) D I G L (+5, -2, +5)
(C) I N L Q (+5, -2, +5) (D) O T R W (+5, -2, +5)

16.(C) (A) $6 : 34$ ($\times 5 + 4$) (B) $12 : 64$ ($\times 5 + 4$)
(C) $20 : 96$ ($\times 5 - 4$) (D) $09 : 49$ ($\times 5 + 4$)

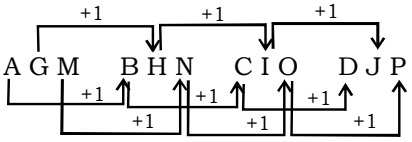
17.(A) Others produce something new, but barber does not make any new thing.

18.(B) (A) 62 - 37 = 25
(B) 74 - 40 = 24
(C) 85 - 60 = 25
(D) 103 - 78 =25

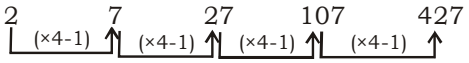
19.(B)

20.(C) All others have '=' sign too.

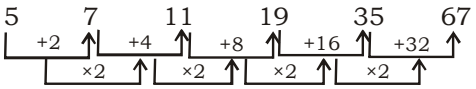
21.(C)



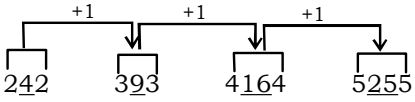

22.(B)




23.(D)




24.(B)




and the middle digit is the product of side digits.

25.(A) 26.(A) 27.(C)

28.(A) 52937239241372654124632887

29.(D)(A) P R T V X Z (+2, +2, +2, +2, +2)

(B) Z B D F H J (+2, +2, +2, +2, +2)

(C) C E G I K M (+2, +2, +2, +2, +2)

(D) M O R T V X (+2, +3, +2, +2, +2)

30. (A) $\frac{\text{Paragraph}}{5}\ \frac{\text{Paramedic}}{2}\ \frac{\text{Paramount}}{1}\ \frac{\text{Parasite}}{3}\ \frac{\text{Parasitic}}{4}$

31. (A) $\frac{\text{Story}}{3}\ \frac{\text{Script}}{5}\ \frac{\text{Dialogue}}{1}\ \frac{\text{Shooting}}{2}\ \frac{\text{Editing}}{4}\ \frac{\text{Preview}}{6}\ \frac{\text{Screening}}{7}$

32.(A) According to Ist statment,

$\Rightarrow$ According to Age,
Fatima > Banu> Anehu ..... (i)

Again,
According to 2nd statement,

$\text{caroline} = \frac{\text{Anehu}}{2} = 2\times \text{Daina}$

$\Rightarrow$ According to Age,
Anehu > Caroline > Daina.....(ii)

So, From (i) and (ii)

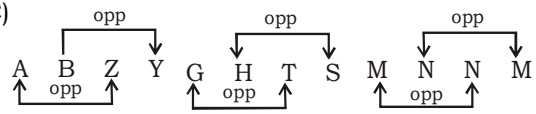
we get,
The oldest person is Fatima & the youngest person is Daina

33.(D) ef/ee f f/eee f ff/e ee e/f f ff

34.(B) c a/cca a/ccca a a/ cccc/ a aaa

35.(D) We do not know the nature of the year whether it is leap year or not. So we can not get the answer.

36.(C)




37.(A) Total strength of the class = (31+ 11-1) + 3 (Not appeared) + 1 (failed)
= 31 + 10 + 3 +1 = 45

3 8 . ( B )

P O R R I D G E→E G P O D I R R
① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑧ ⑦ ① ② ⑥ ⑤ ④ ③

Similarly,

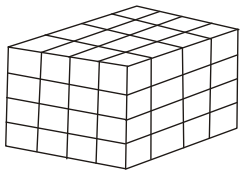
P R E S T I G E→E G P R I T S E
① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑧ ⑦ ① ② ⑥ ⑤ ④ ③

39.(A) In 1 hour distance = 25 + 35 = 60 kms

in 15 minutes distance = $\frac{60}{4}$ = 15 kms

40.(C)

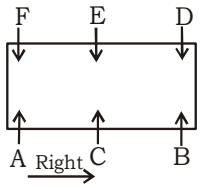
41.(C)



Total number of cubes = $x^3 = 4^3 = 64$

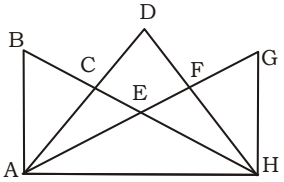
42.(A) 43.(A)

44.(D)



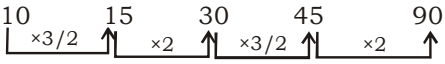

45.(C) 46.(D)

47.(C)




There are 14 traingles in the above diagram- ABC, ACE, AEH, EFH , FGH, ABE, ACH, EGH, ADF, CDH, AFH, ABH, ADH and AGH.

48.(B)




50.(C) The numerical groups of the given word-
H- 03, 10, 22, **34**, 41
E- 00, **12**, 24, 31, 43
N- 57, 69, 76, **88**, 95

103. (D) For Air,

$\gamma = 1.4$

$\boxed{C_p = 1.008 kJ/kg-K}$

$C_V$ = 0.728 kJ/kg–K
R = 0.287 kJ/kg–K

104. (C) $R = C_p - C_V$

105. (D) $\gamma = 1.4$

106. (C) $W = \int P(V_2 - V_1)$

$= \int P(0) = 0$

107. (B)Does not depend on path history (T, P, V)

108. (B) $\eta = 1 - \frac{T_L}{T_H} = 1 - \frac{0}{T_H} = 1 = 100\%$

(When $T_L$ = 0)

108. (D)It is the heat content of a body. Its unit is joule.

H = U + PV.

110. (C)For isothermal process dU = 0
U is the function of T only, for ideal gas.

130. (A) E = 2G (1 + μ)

μ = 0.5
E = 3G

131. (B) E = 2G (1 + μ)

120 = 2 × 50 (1 + μ)

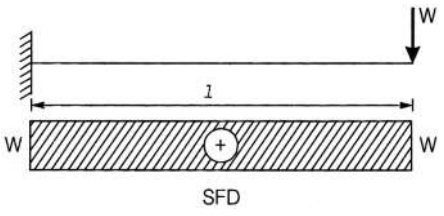
μ = 0.2

132. (B) Shearing area = πDt

$(\pi Dt)\tau = P \times \frac{\pi D^2}{4}$

$\tau = \frac{PD}{4t} = \frac{1.5 \times 1250}{4 \times 12} = 39.06\ MPa$

133. (C)




134. (C) Bending moment at $B = \frac{W}{2} \times \frac{L}{2} = \frac{WL}{4}$

135. (A) Bending moment at fixed end

$= \frac{2}{3} \times 37.5 \times 1000 \times 2 \times 1000$

$= 50 \times 10^6$ N-mm

136. (A) In reverted gear train, first and last gear is on the same axis such an arrangement has application on speed reducers, clocks and machine tools.

139. (B) y-axis : Controlling force
x-axis : radius of rotation

141. (C) Coefficient of friction for Ball and Roller bearings are very low hence they are known as antifriction bearing.

142. (B) Ball bearing may deform at heavy loads.

146. (d) The pressure at any point in a fluid at rest has the same magnitude in all directions. In other words, when a certain pressure is applied at any point in a fluid at rest, the pressure is equally transmitted in all the direction and to every other point in the fluid. It is known as Pascal's Law.

148. (C) Dynamic viscosity, $\mu = \rho\nu$
$= (0.9 \times 1000) \times (0.28 \times 10^{-4})$
$= 0.0252$ Ns/m$^2$

150. (A) Hydrostatic law states that the pressure varies with the depth, in a static fluid.

151. (D) $P = P_0 + \frac{4s}{r} = P_0 + \frac{8s}{D}$

153. (A) $P = \rho gH$
$= 13.6 \times 10^3 \times 9.812 \times 20 \times 10^{-2}$
$= 26.68$ kPa

155. (A) At inlet of reaction turbine water is admitted with high pressure head (above atmospheric pressure) with some kinetic energy. The pressure head of water gradually decreases from inlet to exit. Finally water leaves the runner with low pressure and small kinetic energy to tail race.

156. (B) $Pu = \frac{P}{(H)^{3/2}}$

$P \propto (H)^{3/2}$

$\frac{1000}{P} = \left(\frac{40}{20}\right)^{3/2}$

$P = \frac{1000}{(2)^{3/2}} = 353.55\ kW$

157. (C) Head loss in a turbulent flow
$H_L = V^{1.7 \text{ to } 2}$

159. (A) $V = \frac{Q}{A} = \frac{6 \times 10^{-3}}{40 \times 10^{-4}} = 1.5 m/s$

162. (C) Q = Quarternary Joint
T = Ternary Joint
B = Binary Joint
1Q = 3 B
1 T = 2 B

164. (A) L = 4
J = 5
DOF = $3(4 - 1) - 2 \times 5$
$= 9 - 10 = -1$

169. (D) $h = \frac{895}{N^2}$

$h \propto \frac{1}{N^2}$

171. (C) Friction at the sleeve makes the governor less sensitive.

173. (B) $\frac{T_1}{T_2} = e^{\mu\theta}$

176. (D) Gun Metal: It is an alloy of copper, Tin and Zinc.
Phosphorous Bronze: It is most important alloy of Copper and Tin.
White Metal: it is also called Babbitt.

181. (B) Due to production of long continuous chips in case of soft material, continuous chips forced to enter into the space between the abrasive grains and leads to frequent clogging of wheel.

186. (C) Spot facing is similar to counter boring, but removes only a very small portion of material around the existing hole to provide a flat surface square to the hole axis. This is normally done to provide a bearing surface for a washer or a nut or the head of a bolt.

190. (A) Centre-less grinding is used for grinding cylindrical workpieces without actual fixing the workpiece.

**CORRECTION FROM MOCK TEST 54**

125. B