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Answer-key & Solution

SSC JE (Mechanical)
MOCK -(60)
Date 13 / 08/ 2016

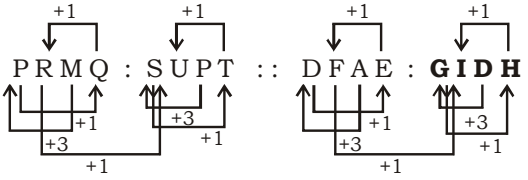
1. B	26. A	51. A	76. A	101. A	126. A	151. C	176. B
2. C	27. C	52. B	77. A	102. B	127. D	152. A	177. B
3. D	28. B	53. D	78. A	103. B	128. A	153. B	178. B
4. A	29. C	54. A	79. B	104. C	129. A	154. A	179. A
5. B	30. D	55. A	80. D	105. B	130. B	155. C	180. C
6. B	31. D	56. A	81. B	106. C	131. D	156. A	181.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

Note : *If your opinion differ regarding any answer, please message the mock test and Question number to 8375805483*

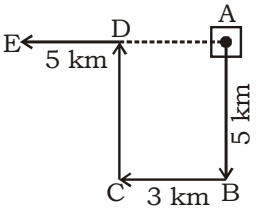
Note : *If you face any problem regarding result or marks scored, please contact : 9313111777*

SOLUTION SSC JE (Mechanical) MOCK TEST no. 60

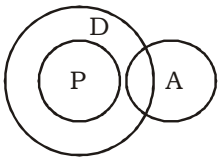
1. (B) By adding the suffix '-ly', the word form may be changed to an adverb and by adding the suffix **'-ful'**, the word form may be changed to an Adjective.
2. (C) 'Fe' is the chemical symbol for Iron and 'Ag' is the chemical symbol for silver.
3. (D) Warm is less intense than hot and Amusing is less intense than hilarious.
4. (A) Careful is a synonym for Alert and Meek is synonym for Subservient.
5. (B) To mount means to get on a horse and to board means to get on a train.
6. (B) A tureen is used to hold soup and a goblet is used to hold wine.
7. (D) Denim is a fabric made from cotton and linen is a fabric made from flax.
8. (A) 'Son' is a homephone for 'sun' and 'so' is a homephone for 'sew'.
9. (A) Number of vowels in Merry Christmas = 3 and $3^2 = 09$
   Number of vowels in Happy New Year = 4 and $4^2 = 16$
10. (B)



11. (B) Figure A, C and D are all rotations of the same shape but figure B is a reflection.
12. (B) Except Nagpur, rest are the capital cities.
13. (C) In (C) we can find five pointed star where as the other stars are all six pointed.
14. (C) X, V and H are all symmetrical about a vertical line.
15. (C) Except girlfriend, rest are males.
16. (A) Except (A), In rest of the options, vowel is followed by consonant repeated twice.
17. (B) Except Q, all other letters occupy the even number position in English alphabet i.e..
    H = 8, Q = 17, T = 20, Z = 26.
18. (B) Except 46, rest of the options are the difference between the cube and square of a number.
    $8^3 - 8^2 = 512 - 64 = 448$
    $12^3 - 12^2 = 1782 - 144 = 1584$
    $2^3 - 2^2 = 8 - 4 = 4$
    $4^3 - 4^2 = 64 - 16 = 48 \neq 46$
19. (C)



    AE = AD + DE
    = (3 + 5) kms = 8 kms
20. (C) $27 = 3 \times 3 \times 3$
    Two years ago
    $27 - 2 = 25 = 5 \times 5$
    Next perfect cube number
    $64 = 4 \times 4 \times 4$
    $\therefore$ 64 – 27 = 37 years
    So, he should wait for another 37 years.
21. (A) G E R M A N Y
    ↓ ↓ ↓ ↓ ↓ ↓ ↓
    7 5 18 13 1 14 25
    Therefore,
    F R A N C E
    ↓ ↓ ↓ ↓ ↓ ↓
    6 18 1 14 3 5
22. (A) **y**zy/**x**zx/y**z**y/xzx/**y**zy/x**z**x/y
23. (A) (40 × 30)/100 = 1200/100 = 12
    (60 × 50)/100 = 3000/ 100 = 30
    (80 × 60)/ 100 = 4800/100 = 48
24. (B) $\frac{7\times4}{2} = 14 \quad \frac{9\times8}{3} = \mathbf{24} \quad \frac{10\times6}{4} = 15$
25. (D) 93 – (27 + 3) = 63
    79 – (38 + 4) = 37
    $\therefore$ 67 – (16 + x) = 42 $\Rightarrow$ $x = \mathbf{9}$
26. (A)



    1. 3 2. 5
27. (C) Let varun's current age be x
    Then, Varun's age after 1 year
    = (x + 1) years.
    ATQ,
    $x + 1 = 2(x - 12) \Rightarrow x + 1 = 2x - 24$
    $\Rightarrow 2x - x = 25$
    $\Rightarrow x = 25$.
28. (B) Meaningful order of words in ascending order :
    2. Daily

1. Weekly
↓
4. Fortnightly
↓
3. Monthly
↓
5. Bimonthly

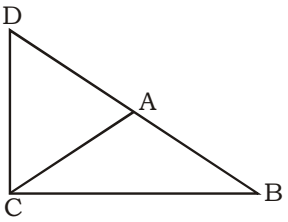
29. (C) P = Q
S > R > T > P = Q
S is the eldest.

30. (D) There is only one 'E' in the given word. Therefore, the word RELATE cannot be formed.

31. (D) $(3)^2 = 9$ $(4)^2 = 16$
$(5)^2 = 25$ $(6)^2 = 36$
$(7)^2 = 49$ $(8)^2 = 64 \neq 61$

32. (B) Only son of Neha grand father means father of Neha. Therefore, Neha is sister of Vivek.

33. (B) DAUGH TER
TER DAUGH
Therefore,
APTIT UDE
UDE APTIT

34. (B)


So, with reference to A, B is located in South-East direction.

35. (B) $15 \times 5 \div 3 = 25$
$\text{LHS} = \frac{15 \times 5}{3} = 25 = \text{RHS}$

36. (C)

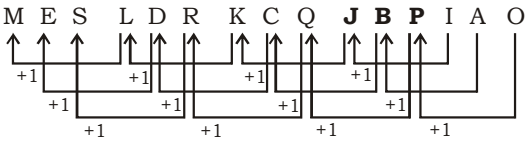
Number of dots on top face	•	••	⁘
Number of dots on bottom face	•	⁘	::

So, we can find 3 points opposite to the face with 4 points.

37. (D) Let salary = ₹ x, then tips = ₹ $\left(\frac{5}{4}x\right)$.
Total income = ₹ $\left(x + \frac{5}{4}x\right)$ = ₹ $\left(\frac{9x}{4}\right)$.
$\therefore$ Required fraction = $\left(\frac{5x}{4} \times \frac{4}{9x}\right) = \frac{5}{9}$.

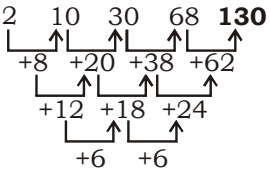
38. (A) F3M → F is the wife of M
M5K → M is the father of K
$\therefore$ F is the mother of K = **F3M5K**

39. (D) The digits are removed one by one from the beginning and the end in order alternately so as to obtain the subsequent terms of the series.
So, ? = 96542

40. (D)


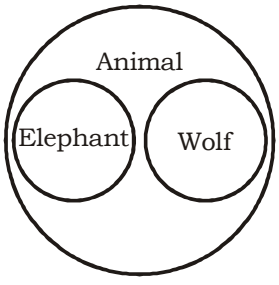
41. (D) I $\xrightarrow{+4}$ M $\xrightarrow{+4}$ **Q** $\xrightarrow{+4}$ U
P $\xrightarrow{+3}$ S $\xrightarrow{+3}$ **V** $\xrightarrow{+3}$ Y
M $\xrightarrow{+2}$ O $\xrightarrow{+2}$ **Q** $\xrightarrow{+2}$ S
D $\xrightarrow{+1}$ E $\xrightarrow{+1}$ **F** $\xrightarrow{+1}$ G

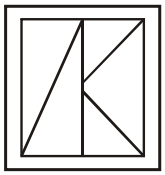
42. (B) $(2)^2 = 4$.
$(2 + 4)^2 = (6)^2 =$ **36**
$(6 + 6)^2 = (12)^2 = 144$
$(12 + 8)^2 = (20)^2 = 400$
$(20 + 10)^2 = (30)^3 = 900$
$(30 + 12)^2 = (42)^2 = 1764$

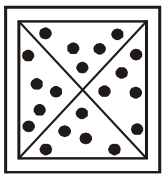
43. (B)


44. (A) A has advised B about the route to Jammu. This means that B wishes to go to Jammu. So, I is implicit. The statement mentions only A's advice to B. So, II is not implicit.

45. (A) Elephant is different from Wolf. But both are animals.



46. (C) 

47. (C) 

107. (D) $\tau = \sigma_{max} = 140\ Mpa$

108. (C) $s_t = \frac{\pi}{16} \times \frac{\left(D^4 - d^4\right)}{10}$

$$s_t = \frac{\pi}{16} \times \frac{\left(10^4 - 5^4\right)}{10} = 184.15\ cm^3$$

109. (C) First ball has travelled for 3 seconds under gravity with acceleration g and initial velocity = 0
2nd ball has travelled for 2 seconds under gravity with acceleration g and initial velocity = 0. Distance between the 2 balls at the end of 3 secs after the first ball is dropped is given by

$$= \frac{1}{2} g(t_1^2 - t_2^2) = \frac{1}{2} \times 10(3^2 - 2^2) = 25m$$

110. (C) Mass, m = 2 kg
Initial Velocity, V_1 = 20m/s
Rebounce Velocity, V_2 = 10m/s
(opposite direction)
Impulse = Change in momentum
$P = mV_1 - (-mV_2)$
$= m(V_1 + V_2)$
$= 2(20+10) = 60$ Ns.

114. (D) $P_e = \frac{\pi^2 EI}{l^2} \Rightarrow I = \frac{\pi d^4}{64}$

$$P_e \propto d^4$$

$$\frac{P_2}{P_1} = \left(\frac{0.8}{1}\right)^4 = 0.4096$$

$$\frac{P_1 - P_2}{P_1} = \frac{1 - 0.4096}{1} = 0.59 = 59\%$$

154. (A) $T_1 = 900K$

$T_2 = ?$

$T_3 = 400K$

$T_2 = \sqrt{T_1 . T_3}$

$= \sqrt{900 \times 400}$

$= \sqrt{360000}$

$= 600K$

157. (C) Useful Work = 60 kW
η = 60%
1kW = 1%
100kW = 100%
Heat rejected = 100 kW - 60 kW = 40kW

160. (B) $\eta_{ideal} = 1 - \frac{T_L}{T_H} = 1 - \frac{280}{560} = 50\%$

$$\eta_{real} = 1 - \frac{840}{1120} = 25\%$$

It shows engine operates on irreversible cycle.

163. (D) $\eta_{th} = 0.3$

$$1 - \frac{T_L}{T_H} = 0.3$$

$$\frac{T_L}{T_H} = 0.7$$

$$(COP)_{H.P} = \frac{T_H}{T_H - T_L} = \frac{1}{1 - \frac{T_L}{T_H}} = \frac{1}{1 - 0.7} = 3.33$$

181. (D) COP = 4

$$(COP)_{Ref} = \frac{T_L}{T_H - T_L}$$

$$4 = \frac{1}{\frac{T_H}{T_L} - 1}$$

$$\frac{T_H}{T_L} - 1 = \frac{1}{4}$$

$$\frac{T_H}{T_L} = \frac{1}{4} + 1 = 1.25$$