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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 (MECH)
Practice Set-15

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

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) Practice Set-15

1. (C) $24 : 288 :: 22 : 242$
 $\frac{24}{24^2 \div 2} \uparrow \quad \frac{22}{22^2 \div 2} \uparrow$

2. (B)

3. (B) $5 : 26 :: 8 : 65$
 $\frac{5}{5^2 + 1} \uparrow \quad \frac{8}{8^2 + 1} \uparrow$

4. (D) $\frac{3}{8} : \frac{12}{32} :: \frac{4}{5} : \frac{16}{20}$
 $\frac{3}{8} \times 4 = \frac{12}{32}$ and $\frac{4}{5} \times 4 = \frac{16}{20}$

5. (C) $N \times O : 14 \times 15 :: G \times S : 7 \times 19$
 (Place value arrows pointing to N, O, G, S)

6. (D)

7. (D) $BMCX : CNDY :: DWEV : EXFW$
 (Arrows showing letter shifts: B to D (+2), M to W (+2), C to E (+2), X to F (+2))

8. (D) Pyorrhea is related to tooth. Similarly, eczema is related to skin.

9. (B) Democracy is always associated with justice.

10. (B) Except peepal, all of them are plant, but peepal is a tree.

11. (A) Except excite, all of them represent development (Growth)

12. (D) (A) Z X W U $\frac{Z}{-2} \uparrow \frac{X}{-1} \uparrow \frac{W}{-1} \uparrow \frac{U}{-2} \uparrow$ (B) Y W V T $\frac{Y}{-2} \uparrow \frac{W}{-1} \uparrow \frac{V}{-1} \uparrow \frac{T}{-2} \uparrow$
 (C) W U T R $\frac{W}{-2} \uparrow \frac{U}{-1} \uparrow \frac{T}{-1} \uparrow \frac{R}{-2} \uparrow$ (D) Z X U R $\frac{Z}{-2} \uparrow \frac{X}{-2} \uparrow \frac{U}{-1} \uparrow \frac{R}{-4} \uparrow$

13. (A) Except (A), All others are the rivers of Northern India.

14. (C) [23-64] is a co-prime pair.

15. (C) Except option (C) all digits are divisible by 3.

16. (A) Except (A), All of them belong to one category.

17. (A) $3 - 8 \Rightarrow 3 + 8 = 11$ (prime no.)

$6 - 8 \Rightarrow 6 + 8 = 14$

$4 - 5 \Rightarrow 4 + 5 = 9$

$5 - 7 \Rightarrow 5 + 7 = 12$

18. (B) Brass is an alloy.

19. (D) pair

20. (C) $\frac{\text{Cell}}{2} \quad \frac{\text{Tissue}}{1} \quad \frac{\text{Organ}}{3}$

21. (B) $Z3A \quad W9D \quad T27G \quad Q81J \quad N243M$
 (Arrows showing $\times 3$ and $+3$ operations)

22. (B) $D F \quad G I \quad J L \quad M O$
 (Arrows showing $+3$ operations)

23. (C) $7 \quad 12 \quad 19 \quad 28 \quad 39 \quad 52$
 $\frac{7}{+5} \uparrow \frac{12}{+7} \uparrow \frac{19}{+9} \uparrow \frac{28}{+11} \uparrow \frac{39}{+13} \uparrow$

24. (D) (D,E) (I,J) (O,P)
 BC, FGH, KLMN, QRSTU, XYZABC

25. (B) $DMP \quad FLN \quad HKL \quad JJJ \quad LIH$
 (Arrows showing $+2$ and -1 operations)

26. (C) $1 \times 1 + 1^2 = 2$
 $2 \times 2 + 2^2 = 8$
 $8 \times 3 + 3^2 = 33$
 $33 \times 4 + 4^2 = 148$
 $148 \times 5 + 5^2 = 765$

27. (B) $9 \times 3 - 4 + 6 = 29$

$27 - 4 + 6 = 29$

$27 + 6 - 4 = 29$

$33 - 4 = 29$

$29 = 29$

28. (B) $7 - 3 \times 6 = 24$ (According to given option)

$4 \times 6 = 24$

$24 = 24$

29. (A) SYDNEY

30. (D) $E \quad V \quad E \quad N \quad T \rightarrow 5 \quad 4 \quad 5 \quad 5 \quad 2$
 $\frac{5}{5} \downarrow \frac{22}{2} \downarrow \frac{5}{5} \downarrow \frac{14}{2} \downarrow \frac{20}{5} \downarrow$
 (Arrows showing $5+0, 2+2, 5+0, 1+4, 2+0$ operations)

Similarly,

$R \quad E \quad V \quad E \quad N \quad G \quad E \rightarrow 9 \quad 5 \quad 4 \quad 5 \quad 5 \quad 7 \quad 5$
 $\frac{18}{5} \downarrow \frac{5}{5} \downarrow \frac{22}{2} \downarrow \frac{5}{5} \downarrow \frac{14}{2} \downarrow \frac{7}{7} \downarrow \frac{5}{5} \downarrow$
 (Arrows showing $1+8, 5+0, 2+2, 5+0, 1+4, 7+0, 5+0$ operations)

31. (B) $\frac{\text{Area of smaller circle}}{\text{Area of larger circle}} = \frac{\pi(a)^2}{\pi(2a)^2} = \frac{1}{4}$

32. (A) $7x - 5y = 20$ (i)

$12x + 5y = 75$ (ii)

Adding equation (i) & (ii)

$19x = 95$

$x = 5$

Putting the value of $x = 5$ in equ. (i)

$7 \times 5 - 5y = 20$

$5y = 15$

$y = 3$

Now, $xy = 5 \times 3 = 15$

33. (A)

34. (B) $B \quad A \quad C \quad T \quad E \quad R \quad I \quad A \rightarrow A \quad B \quad I \quad A \quad R \quad C \quad E \quad T$
 $\frac{1}{1} \downarrow \frac{2}{2} \downarrow \frac{3}{3} \downarrow \frac{4}{4} \downarrow \frac{5}{5} \downarrow \frac{6}{6} \downarrow \frac{7}{7} \downarrow \frac{8}{8} \downarrow$
 $\frac{8}{8} \downarrow \frac{1}{1} \downarrow \frac{7}{7} \downarrow \frac{2}{2} \downarrow \frac{6}{6} \downarrow \frac{3}{3} \downarrow \frac{5}{5} \downarrow \frac{4}{4} \downarrow$

Similarly,

$P \quad R \quad O \quad T \quad O \quad Z \quad O \quad A \rightarrow A \quad P \quad O \quad R \quad Z \quad O \quad O \quad T$
 $\frac{1}{1} \downarrow \frac{2}{2} \downarrow \frac{3}{3} \downarrow \frac{4}{4} \downarrow \frac{5}{5} \downarrow \frac{6}{6} \downarrow \frac{7}{7} \downarrow \frac{8}{8} \downarrow$
 $\frac{8}{8} \downarrow \frac{1}{1} \downarrow \frac{7}{7} \downarrow \frac{2}{2} \downarrow \frac{6}{6} \downarrow \frac{3}{3} \downarrow \frac{5}{5} \downarrow \frac{4}{4} \downarrow$

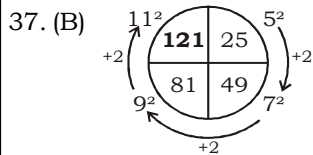
35. (C) $3 \times 5 \times 2 \div 3 = 10$

$4 \times 7 \times 3 \div 4 = 21$

Similarly,

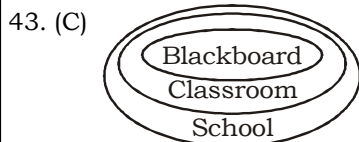
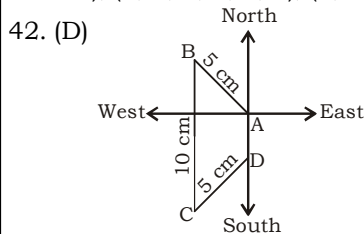
$5 \times 9 \times 4 \div 5 = 36$

36. (B) $51 \Rightarrow 7^2 + 2$
 $66 \Rightarrow 8^2 + 2$
 $83 \Rightarrow 9^2 + 2$
 $102 \Rightarrow 10^2 + 2$
 $123 \Rightarrow 11^2 + 2$
 $146 \Rightarrow 12^2 + 2$



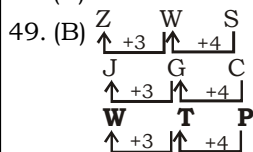
38. (B)
- $$AE = \sqrt{AB^2 + BC^2} + \sqrt{CD^2 + DE^2}$$
- $$= \sqrt{3^2 + 4^2} + \sqrt{3^2 + 4^2}$$
- $$= \sqrt{9 + 16} + \sqrt{9 + 16}$$
- $$= \sqrt{25} + \sqrt{25}$$
- $$= 5 + 5 = 10 \text{ cm}$$
39. (C) 40. (A)

41. (A)
- There are 13 triangles are in the given figure:- 1, 2, 3, 4, 5, 6, (1, 2), (3, 4), (1, 3), (2, 4), (1, 2, 3, 4, 5, 6), (1, 3, 5) and (2, 4, 6)



44. (A)
 45. (D) (F) (C) (Sn) (SI) t

46. (B) 47. (C) 48. (B)



50. (A)

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

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

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

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

157. (C) Thermal diffusivity, $\alpha = (\text{m}^2/\text{s})$
 Kinematic viscosity, $\bar{\nu} = (\text{m}^2/\text{s})$
 Dynamic viscosity, $\mu = (\text{Pa}\cdot\text{s})$
 Mass diffusivity = (m^2/s)
159. (B) As a ship enters into a river from sea, one can expect that it sinks a little because of some Buoyancy force acts.
162. (B) Bernoulli's equation is applicable for non-viscous flow. At boundary layer viscous force acts. Due to this Bernoulli's equation can be used only inside the boundary layer.
163. (B) Euler's equation of motion is conservation of momentum and is applicable to steady, compressible as well as incompressible flow of non-viscous fluid.
164. (A) $L = 4$
 $J = 5$
 $\text{DOF} = 3(4 - 1) - 2 \times 5$
 $= 9 - 10 = -1$
169. (D) $h = \frac{895}{N^2}$
 $h \propto \frac{1}{N^2}$
195. (D) Initial stretch of spring is 10 cm
 Force in spring = $1000 \times 0.1 = 100\text{N}$
 To further stretch it by 10 cm,
 New force will be 200 N.
 Work to stretch by 10 cm
 $= \frac{100 + 200}{2} \times 0.1\text{m} = 15\text{Nm}$.
198. (B) Fettling: Fettling is used to trim or clean the rough edges of a metal casting.
199. (A) Bentonite: Bentonite is the type of clay.

Correction From
Mock Test 52

105 (A)