

MOTION

Nurturing potential through education

NATIONAL LEVEL SCIENCE TALENT SEARCH EXAMINATION

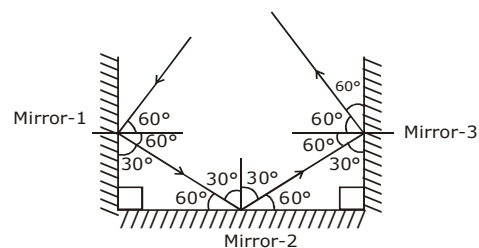
CLASS - VII

ANSWER KEY

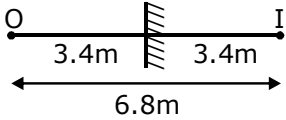
1. (A) 2. (B) 3. (C) 4. (C) 5. (C) 6. (B) 7. (C)
8. (D) 9. (B) 10. (A) 11. (B) 12. (B) 13. (A) 14. (D)
15. (C) 16. (C) 17. (B) 18. (C) 19. (B) 20. (B) 21. (C)
22. (C) 23. (A) 24. (C) 25. (A) 26. (D) 27. (D) 28. (C)
29. (C) 30. (D) 31. (C) 32. (B) 33. (B) 34. (B) 35. (A)
36. (A) 37. (C) 38. (D) 39. (C) 40. (C) 41. (A) 42. (C)
43. (D) 44. (D) 45. (B) 46. (C) 47. (B) 48. (C) 49. (B)
50. (C) 51. (D) 52. (D) 53. (D) 54. (D) 55. (A) 56. (B)
57. (C) 58. (A) 59. (A) 60. (B) 61. (A) 62. (D) 63. (B)
64. (B) 65. (B) 66. (C) 67. (C) 68. (B) 69. (A) 70. (D)
71. (B) 72. (C) 73. (D) 74. (C) 75. (C) 76. (D) 77. (D)
78. (D) 79. (B) 80. (A) 81. (D) 82. (C) 83. (B) 84. (A)
85. (D) 86. (C) 87. (B) 88. (A) 89. (A) 90. (A) 91. (B)
92. (C) 93. (A) 94. (A) 95. (A) 96. (A) 97. (D) 98. (B)
99. (B) 100. (C)

SOLUTIONS

1. $(-2) \div 3 \times (-4) \div 1 = 24$
2. $2\pi r - r = 37$
 $r = 7$
 $2\pi r = 44$
3. $1 + \frac{3}{5} = \frac{8}{5}$
4. Given
 $AB = AC = BC$
 Also $BC = CD = DE = BE$ (square)
 $= 150$
5. $\frac{x}{0.2} = 0.34$
 $x = 0.068$
7. $\angle P = 180 - (100) = 80$
 $\angle P = \angle x = 80$
8. Profit = $48000 \times \frac{15}{100} = 7200$
9. $3 : 4 :: 75 : 100$
10. $\frac{x_1 + x_2 + x_3 + x_4 + x_5}{5} = 27$
 $x_1 + x_2 + x_3 + x_4 + x_5 = 135$
 Also $\frac{x_1 + x_2 + x_3 + x_4}{4} = 25$
 So $x_5 = 135 - 100 = 35$
12. Area = length \times height
 $576 = 24m \times H$
 $H = \frac{576}{24} \Rightarrow H = 24m$
13. 100 (+ve) = 1
 100 (-ve) = -1
 Result = 0
16. 10, 12, 14, 17, 26, 28, 35
 Median = 17
17. $1^5 = 1$
 $5^0 = 1$
18. $0 - 7 \times 8 \div 2 - 10$
 $0 - 56 \div 2 - 10$
 $0 - 28 - 10 = -38$
20. $90 - (4n + 2) = 88 - 4n$
21. Option C is
 $25\% \text{ of } 50 = 50 \times \frac{25}{100} = 12.5$
22. Integer \pm Integer = Integer
26. (D) Metal bar will not bend downward as it can expand in Y-direction.
27. (D) Avg. Speed = $\frac{\text{Total Distance}}{\text{Total Time}}$
28. (C) Bulb produces heat & light energy.
29. (C) The carpet is a poor heat conductor or an insulator.
30. (D) Electric Motor & Electric door-bell have electromagnet inside them.
31. (C) $10:15 \text{ PM} - 7:35 \text{ AM} = 14 \text{ hr } 40 \text{ min}$
32. (B) Periscope & Microscope is used in viewing objects.
33. (B) Distance = Speed \times Time
 $= 3 \times 10^5 \times 500$
 $= 150 \text{ million Km}$
34. (B) The nearer object will melt first.
35. (A) Plane Mirror is used in Periscope.
36. (A) Setup IV will make strong electromagnet as more no. of turns & more no. of cells will make strong electromagnet.
37. (C) Parallel
38. (D) Both fuse and circuit breaker are safety device.
39. (C) Near the ceiling, as cold air goes down & hot air comes up.
40. (C)



As $\angle i = \angle r$
 $\angle r$ at mirror-3 is 60°

41. (A) Heat makes things hot.
42. (C) For Battery, we connect positive terminal to next negative terminal & vice-versa so correct sequence is -
A - B, Q - R, C - S
43. (D) $S = \frac{D}{t}$
 $t = \frac{D}{S} = \frac{15}{120}$
 $= \frac{1}{8} \times 60 = 7.5$ minutes
44. (D) Silvering of inner side will prevent radiation only.
45. (B) 
46. (C) $t = 30 \text{ min} = \frac{1}{2} \text{ hr}$
 $S = \frac{D}{t} = D = S \times t$
 $= 100 \times 0.5$
 $D = 50 \text{ Km}$
47. (B) The road heats up due to radiation only.
48. (C) Size of image = size of the object
49. (B) Time Period = $\frac{\text{Total time}}{\text{No. of oscillation}}$
 $= \frac{16.4}{20} = .82 \text{ sec}$
50. (C) When voltage is high, the current flows more, so bulb glows more bright.
51. (D)
52. (D) Charge air between clouds.
53. (D) $\text{Mg}(s) + 2\text{HCl}(\ell) \longrightarrow \text{MgCl}_2(s) + \text{H}_2(g)$
54. (D)
55. (A) All are compound but O_2 is a element.
56. (B)
57. (C)
58. (A) Pure water pH = 7 and water is neutral substance do not change colour of litmus paper.
59. (A)
60. (B) Evaporation of Alcohol is a physical change.
61. (A)
62. (D) Crystallization of NaCl solution is a physical change.
63. (B) $\text{H}_2\text{O}(\ell) + \text{CO}_2(g) \longrightarrow \text{H}_2\text{CO}_3(\ell)$
pH value 7 to 5.6 approx
64. (B)
65. (B) 10 member use water (ℓ) = 15000 L in 30 days
One member used water in one year
 $\frac{365}{30} \times 15000 = 18,250$ (L)
66. (C) $\text{Na}(s) + \text{Cl}(\ell) \longrightarrow \text{NaCl}(s)$
67. (C)
68. (B) $\text{CaO} + \text{CO}_2 \rightleftharpoons \text{CaCO}_3$
its a reversible reaction so it will be further complete.
69. (A) $\text{NaOH} + \text{HCl} \longrightarrow \text{NaCl} + \text{H}_2\text{O}$
pH = 14 pH = 2
70. (D)