

All India Aakash Test Series (Junior) - 2019 (Class IX)

TEST - 6

Test Date : 24-02-2019

ANSWERS**SECTION-I (Code-A)**

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

SECTION-II (Code-B)

1. (1)	7. (3)	13. (2)	19. (1)	25. (1)
2. (2)	8. (1)	14. (2)	20. (1)	26. (1)
3. (1)	9. (2)	15. (2)	21. (4)	27. (2)
4. (3)	10. (3)	16. (3)	22. (2)	28. (3)
5. (2)	11. Delete	17. (1)	23. (2)	29. (2)
6. (1)	12. (4)	18. (2)	24. (4)	30. (3)

SECTION-III (Code-C)

1. (2)	4. (4)	7. (2)	10. (3)	13. (2)
2. (2)	5. (2)	8. (1)	11. (4)	14. (2)
3. (1)	6. (4)	9. (4)	12. (2)	15. (1)



All India Aakash Test Series (Junior) - 2019 (Class IX)

TEST - 6**Hints to Selected Questions****SECTION-I (Code-A)**

1. Answer (3)

Slope is always increasing.

2. Answer (3)

$$s = \frac{1}{2}gt^2$$

$$s = 5 \text{ m}$$

3. Answer (3)

4. Answer (1)

Free falling

5. Answer (4)

6. Answer (3)

$$a = \left(\frac{2m - m}{2m + m} \right) g$$

$$a = \frac{g}{3}$$

7. Answer (1)

8. Answer (4)

9. Answer (1)

10. Answer (4)

11. Answer (2)

$$x = ut - \frac{1}{2}at^2$$

$$20 = u \times 2 - \frac{1}{2} \times 10 \times 4$$

$$20 = 2u - 20$$

$$2u = 40$$

$$u = 20 \text{ ms}^{-1}$$

12. Answer (2)

Acceleration is constant = 3 ms^{-2}
 distance travelled by particle in 6 s

$$s = ut + \frac{1}{2}at^2$$

$$s = 15 \times 6 + \frac{1}{2} \times 3 \times (6)^2$$

$$s = 90 + 54$$

$$s = 144 \text{ m}$$

13. Answer (4)

$$F = \frac{GM \cdot m}{(2R)^2}$$

$$F' = \frac{GM' \cdot m}{(2R)^2}$$

$$M_1 = \frac{M}{\frac{4}{3}\pi R^3} \cdot \frac{4}{3}\pi \cdot \frac{R^3}{8} = \frac{M}{8}$$

$$M' = M - M_1 = \frac{7}{8}M$$

$$\frac{F'}{F} = \frac{M'}{M} = \frac{7}{8}$$

$$F' = \frac{7}{8}F$$

14. Answer (1)

For, $h \ll R$

$$g_h = g \left(1 - \frac{2h}{R} \right)$$

$$= g \left(1 - \frac{40}{6400} \right)$$

$$= g \left[1 - \frac{1}{160} \right] = \frac{159}{160}g$$

15. Answer (2)

$$a = \frac{10 - 4}{m} = \frac{10 - 4}{2}$$

$$\Rightarrow 3 \text{ ms}^{-2}$$

16. Answer (4)

$$T_1 = (20)(g + a)$$

$$T_1 = 20(12) = 240 \text{ N}$$

$$T_2 = 4(g + a) = 48 \text{ N}$$

17. Answer (3)

Gross weight = mg

$$ma = mg - F$$

$$F = mg - ma$$

$$= mg \left(1 - \frac{a}{g}\right)$$

$$F = W \left(1 - \frac{a}{g}\right)$$

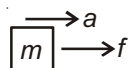
18. Answer (1)

$$T = mg + ma$$

$$T = 20(10 + 1)$$

$$T = 220 \text{ N}$$

19. Answer (3)

 f = Force on small mass m

$$f = ma = \frac{Fm}{M + m}$$

$$\text{Work done on } m = \frac{Fms}{M + m}$$

20. Answer (2)

From graph $f_Q = 2f_P$

$$\therefore \frac{I_P}{I_Q} = \frac{A^2}{\left(\frac{3}{2}A\right)^2} \times \frac{f^2}{(2f)^2}$$

$$\frac{I_P}{I_Q} = \frac{4}{9} \times \frac{1}{4} = \frac{1}{9}$$

21. Answer (4)

22. Answer (2)

23. Answer (2)

24. Answer (4)

25. Answer (3)

26. Answer (1)

27. Answer (2)

Isotopes have same number of protons

28. Answer (4)

29. Answer (2)

30. Answer (4)

31. Answer (1)

Mass of reactant = Mass of product.

32. Answer (4)

33. Answer (2)

5 g of A reacts with 4 g of B

30 g of A reacts with 24 g of B

34. Answer (4)

35. Answer (1)

36. Answer (4)

$$\text{Concentration of solution (\%V/V)} = \frac{4}{60} \times 100 = 6.67\%$$

37. Answer (4)

38. Answer (4)

39. Answer (2)

Molar mass = Mass of 1 mole of substance

$$= \frac{64}{4} = 16 \text{ g}$$

Molar mass of CH_4 is 16 g

40. Answer (2)

$$\text{Average atomic mass} = \frac{90 \times 16 + 10 \times 18}{100}$$

$$= \frac{1440 + 180}{100} = 16.20 \text{ u}$$

41. Answer (3)

Amphibians require water for the completion of their life cycle as the eggs are laid in water and the larval form is aquatic.

42. Answer (3)

43. Answer (4)

Rice is a kharif crop, rest are rabi crops.

44. Answer (1)

45. Answer (4)

46. Answer (4)

Maize is a kharif crop while barley is a rabi crop.

47. Answer (3)

48. Answer (4)

49. Answer (1)

50. Delete

51. Answer (3)



- 52. Answer (3)
- 53. Answer (2)
- 54. Answer (1)
- 55. Answer (1)
- 56. Answer (2)
- 57. Answer (4)
- 58. Answer (1)

In gymnosperms, xylem lacks vessels and phloem is devoid of companion cells.

- 59. Answer (2)
- 60. Answer (1)
- 61. Answer (3)
- 62. Answer (2)
- 63. Answer (3)
- 64. Answer (4)
- 65. Answer (4)
- 66. Answer (2)
- 67. Answer (3)
- 68. Answer (4)
- 69. Answer (2)

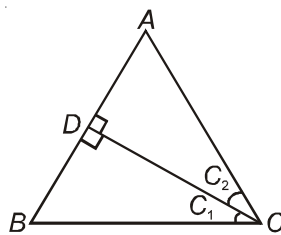
$$\begin{aligned}
 &= x^2 - (y^2 - 2yz + z^2) + x + y - z \\
 &= x^2 - (y - z)^2 + x + y - z \\
 &= (x + y - z)(x - y + z)(x + y - z) \\
 &= (x + y - z)(x - y + z + 1)
 \end{aligned}$$

- 70. Answer (2)
- 71. Answer (1)
- 72. Answer (2)

$$\begin{aligned}
 \angle B + \angle C_1 &= 90^\circ \quad \dots(i) \\
 \angle A + \angle C_2 &= 90^\circ \quad \dots(ii)
 \end{aligned}$$

From (i) and (ii)

$$\begin{aligned}
 \angle B + \angle C_1 &= \angle A + \angle C_2 \\
 \angle B - \angle A &= \angle C_2 - \angle C_1
 \end{aligned}$$



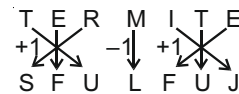
- 73. Answer (3)
- 74. Answer (2)

$$\begin{aligned}
 2^{5555} &= 32^{1111} \\
 3^{3333} &= 27^{1111} \\
 6^{2222} &= 36^{1111} \\
 27 &< 32 < 36 \\
 \Rightarrow 3^{3333} &< 2^{5555} < 6^{2222}
 \end{aligned}$$

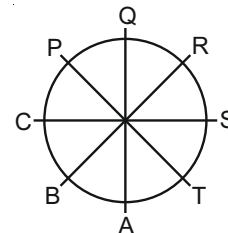
- 75. Answer (4)
- 76. Answer (4)
- 77. Answer (2)
- 78. Answer (2)
- 79. Answer (3)
- 80. Answer (2)
- 81. Answer (2)
- 82. Answer (4)
- 83. Answer (3)
- 84. Answer (1)

Each letter is coded to a letter at the same position from the last in alphabetical order.

- 85. Answer (2)
- 86. Answer (3)



Solutions for Q.87 to Q.90



- 87. Answer (4)
- 88. Answer (3)
- 89. Answer (1)
- 90. Answer (2)
- 91. Answer (3)

Pattern of prime numbers skipping one prime number.

- 92. Answer (2)

$$22^2, 8^3, 23^2, 9^3, 24^2, 10^3, 25^2$$

- 93. Answer (4)

$$a \ b \ c \ d \ | \ d \ a \ b \ c \ | \ c \ d \ a \ b \ | \ b \ c \ d \ a$$

- 94. Answer (1)

$$A \ I \ A \ T \ S \ | \ A \ I \ A \ T \ S \ | \ A \ I \ A \ I \ S$$

- 95. Answer (1)

Antonyms of each other.

96. Answer (2)
abcde : ecdba
97. Answer (3)
 $a \pi b = (a - b)^3$
98. Answer (4)
99. Answer (3)
100. Answer (2)

SECTION-II (Code-B)

1. Answer (1)
Cells plasmolysed due to exosmosis and plant dies.
2. Answer (2)
3. Answer (1)
4. Answer (3)
5. Answer (2)
Zidovudine or AZT (3'-Azido 3, 3'-dideoxythymidine was the first drug used for the treatment of AIDS)
6. Answer (1)
7. Answer (3)
8. Answer (1)
9. Answer (2)
10. Answer (3)
11. **Delete**
12. Answer (4)
13. Answer (2)
14. Answer (2)
15. Answer (2)
16. Answer (3)
17. Answer (1)
18. Answer (2)
19. Answer (1)
20. Answer (1)
21. Answer (4)
22. Answer (2)
23. Answer (2)
24. Answer (4)
25. Answer (1)
26. Answer (1)
27. Answer (2)

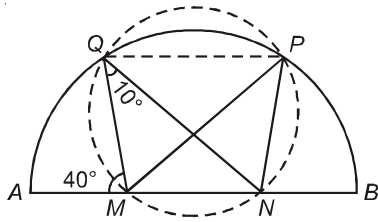
28. Answer (3)
29. Answer (2)
30. Answer (3)

SECTION-III (Code-C)

1. Answer (2)
2. Answer (2)
3. Answer (1)
4. Answer (4)
5. Answer (2)
6. Answer (4)
 $x^9 - x = x(x^8 - 1) = x(x^4 + 1)(x^4 - 1)$
 $= x(x^4 + 1)(x^2 + 1)(x + 1)(x - 1)$
7. Answer (2)
8. Answer (1)
9. Answer (4)
10. Answer (3)
11. Answer (4)
 $2x + 3y = 373$
 $\Rightarrow x = \frac{373 - 3y}{2}$
 $\therefore 373 - 3y$ must be a positive even integer and y must be a positive odd integer such that $3y \leq 373$.
There are 124 multiples of 3 less than 373.
 \therefore The number of solutions are 62.
12. Answer (2)
 $(x + 9)^{1/3} - (x - 9)^{1/3} = 3$
On cubing both sides, we get
 $(x + 9) - 3(x + 9)^{2/3}(x - 9)^{1/3}$
 $+ 3(x + 9)^{1/3}(x - 9)^{2/3} - x + 9 = 27$
 $\Rightarrow 9 = -3(x + 9)^{1/3}(x - 9)^{1/3}[(x + 9)^{1/3} - (x - 9)^{1/3}]$
 $= -3(x^2 - 81)^{1/3}(3)$
 $\therefore (x^2 - 81)^{1/3} = -1$
 $\Rightarrow x^2 = 80$



- 13. Answer (2)
- 14. Answer (2)
- 15. Answer (1)



$$\angle QNM + \angle MQN = 40^\circ$$

$$\therefore \angle QNM = 30^\circ$$

$$\angle QNM = \angle QPM = 30^\circ$$

(\because $MNPQ$ is a cyclic quadrilateral)

$$\therefore \angle MPN = 10^\circ$$

$$\therefore \angle NQP = 20^\circ$$

[$\because MQ = MP$]

$$\Rightarrow \angle PMN = 20^\circ$$

