

# All India Aakash Test Series (Junior) - 2019 (Class X)

## TEST - 6

Test Date : 24-02-2019

### ANSWERS

#### SECTION-I (Code-D)

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

#### SECTION-II (Code-E)

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

#### SECTION-III (Code-F)

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



# All India Aakash Test Series (Junior) - 2019 (Class X)

## TEST - 6

### Hints to Selected Questions

#### SECTION-I (Code-D)

1. Answer (3)
2. Answer (1)
3. Answer (4)
4. Answer (4)
5. Answer (3)

The lens must be convex lens

$$m = \frac{f-v}{f}$$

$$-4 = \frac{f-20}{f}$$

$$-4f = f - 20$$

$$f = 4 \text{ cm}$$

6. Answer (1)

$$\frac{1}{v} - \frac{1}{u} = \frac{1}{f}$$

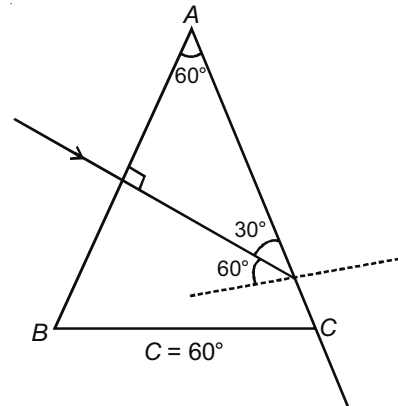
$$\frac{1}{-100} + \frac{1}{50} = \frac{1}{f}$$

$$\frac{-2+1}{100} = \frac{1}{f}$$

$$f = 1 \text{ D}$$

7. Answer (2)
8. Answer (2)
9. Answer (2)
10. Answer (2)
11. Answer (1)
12. Answer (1)

13. Answer (2)



14. Answer (2)

$$V = \frac{I R_V R}{R_V + R}$$

$R_V$  = Resistance of voltmeter

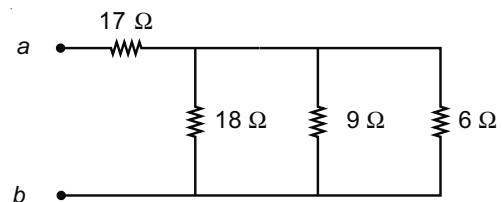
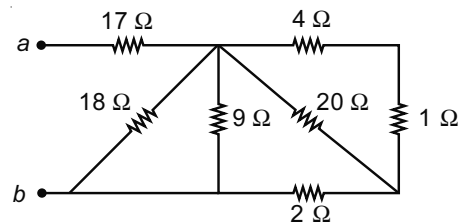
$$96 = \frac{5 \times 480 \times R}{480 + R}$$

$$25 R = R + 480$$

$$R = 20 \Omega$$

15. Answer (4)

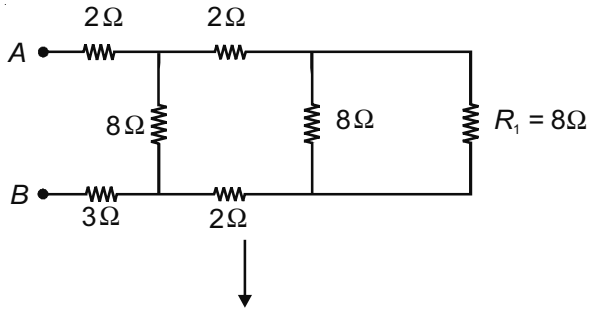
16. Answer (2)



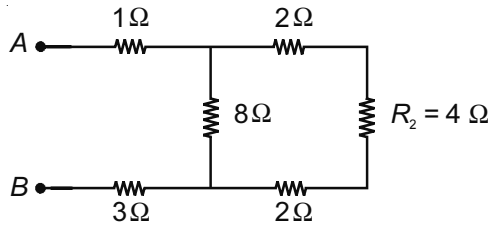
17. Answer (1)

Circuit can be redrawn as

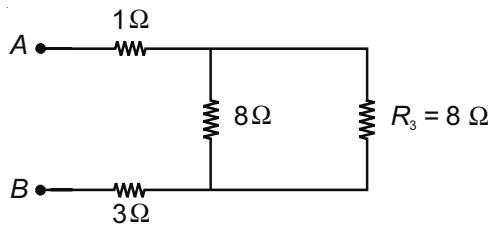
$$R_1 = 2 + 4 + 2 = 8 \Omega$$



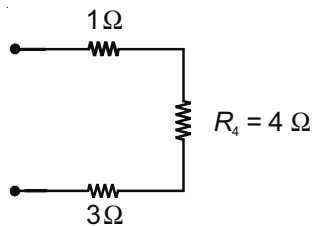
$$R_2 = \frac{8 \times 8}{8 + 8} = 4 \Omega$$



$$R_3 = 4 + 2 + 2 = 8 \Omega$$



$$R_4 = \frac{8}{2} = 4 \Omega$$



$$R_{\text{net}} = 1 + 4 + 3 = 8 \Omega$$

18. Answer (1)

19. Answer (2)

The voltage drop across the bulb should be 2 volt.

$$R_{\text{eq}} = \frac{2}{3} + 1 = \frac{5}{3}$$

$$I = \frac{V}{R_{\text{eq}}} = \frac{5 \times 3}{5} = 3 \text{ A}$$

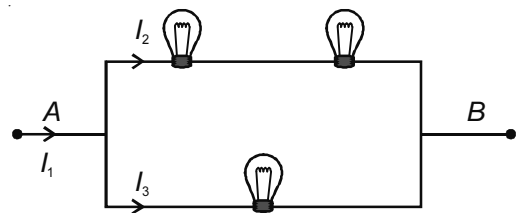
20. Answer (4)

Since  $P_3 = P_2 = P_4 = P_1 = P$

$$P_2 = P_3 = I^2 R_3 = I^2 R_2$$

$$R_3 = R_2 = 3 \Omega$$

let voltage drop across AB is V



$$\frac{V^2}{R_4} = \left(\frac{V}{2}\right)^2 \frac{1}{R_3}$$

$$\frac{V^2}{R_4} = \frac{V^2}{4R_3}$$

$$R_4 = 4R_3$$

$$R_4 = 12 \Omega$$

$$I_2 = 2I_3 \text{ and } I_1 = I_2 + I_3 = \frac{3}{2}I_2$$

$$I_1^2 R_1 = I_2^2 R_2$$

$$\frac{9}{4} I_2^2 R_1 = I_2^2 R_2$$

$$R_1 = \frac{4}{9} \times 3 = \frac{12}{9} = \frac{4}{3} \Omega$$

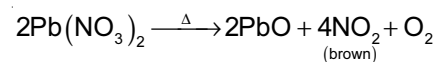
21. Answer (4)

AgCl is precipitated out on mixing aqueous solutions of NaCl & AgNO<sub>3</sub>.

22. Answer (4)

23. Answer (3)

24. Answer (1)



25. Answer (1)

26. Answer (4)

27. Answer (4)

Galena – PbS

Cinnabar – HgS

Zinc blende – ZnS

Malachite –  $\text{CuCO}_3 \cdot \text{Cu(OH)}_2$

28. Answer (1)

29. Answer (4)

30. Answer (2)

31. Answer (4)

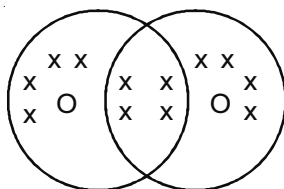
X is Gypsum.

32. Answer (4)

33. Answer (4)

34. Answer (3)

35. Answer (2)



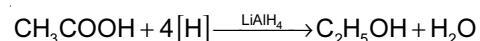
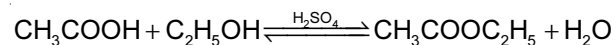
36. Answer (3)

37. Answer (3)

38. Answer (3)

39. Answer (3)

40. Answer (3)



41. Answer (3)

42. Answer (3)

43. Answer (4)

44. Answer (3)

45. Answer (4)

46. Answer (2)

47. Answer (1)

48. Answer (3)

49. Answer (4)

50. Answer (2)

51. Answer (1)

52. Answer (3)

53. Answer (2)

54. Answer (3)

55. Answer (3)

Prolactin is responsible for milk production and oxytocin is responsible for milk ejection.

56. Answer (2)

$$\text{Energy available to vegetation} = \frac{1}{100} \times 10000 = 100 \text{ J,}$$

$$\text{Energy available to mice} = \frac{10}{100} \times 100 = 10 \text{ J,}$$

$$\text{Energy available to snake} = \frac{10}{100} \times 10 = 1 \text{ J and}$$

$$\text{Energy available to hawk} = \frac{10}{100} \times 1 = 0.1 \text{ J.}$$

57. Answer (2)

Father × Mother  
 Parental Genotype =  $I^B i$  ×  $I^A I^B$   
 Gametes =  $I^B i$  ×  $I^A I^B$

Blood group of Progeny =

	$I^A$	$I^B$
$I^B$	$I^A I^B$	$I^B I^B$
$i$	$I^A i$	$I^B i$

∴ 25% of the progeny have blood group genotype  $I^B i$ .

58. Answer (3)

59. Answer (1)

60. Answer (4)

Parietal cells secrete HCl (Hydrochloric acid) and Castle's intrinsic factor.

61. Answer (3)

62. Answer (2)

63. Answer (3)

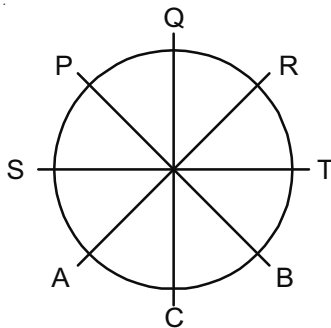
64. Answer (4)

65. Answer (3)

66. Answer (2)

- 67. Answer (4)
- 68. Answer (2)
- 69. Answer (2)
- 70. Answer (2)
- 71. Answer (4)
- 72. Answer (1)
- 73. Answer (2)
- 74. Answer (2)
- 75. Answer (3)
- 76. Answer (1)
- 77. Answer (3)
- 78. Answer (2)
- 79. Answer (2)
- 80. Answer (4)

Sol. for Q.81 to Q. 85



- 81. Answer (4)
- 82. Answer (3)
- 83. Answer (2)
- 84. Answer (4)
- 85. Answer (1)
- 86. Answer (4)
- 87. Answer (3)
- 88. Answer (2)
- 89. Answer (3)
- 90. Answer (4)
- 91. Answer (3)

$$20 + 33 = 28 + 25, 98 + 55 = 79 + 74$$

- 92. Answer (1)

- 93. Answer (2)
- 94. Answer (4)
- 95. Answer (2)  
 $(4 + 5)^2 + 4 + 5 = 90, (10 + 9)^2 + 10 + 9 = 380$
- 96. Answer (3)
- 97. Answer (4)
- 98. Answer (1)  
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.
- 99. Answer (2)  
a b c d e | a b c d e | a b c d e
- 100. Answer (3)

---

**SECTION-II (Code-E)**

---

- 1. Answer (2)
- 2. Answer (2)
- 3. Answer (2)
- 4. Answer (2)
- 5. Answer (3)
- 6. Answer (3)
- 7. Answer (2)
- 8. Answer (1)
- 9. Answer (2)
- 10. Answer (3)
- 11. Answer (4)
- 12. Answer (4)
- 13. Answer (3)
- 14. Answer (2)
- 15. Answer (4)
- 16. Answer (4)  
P is somatostatin, X is insulin and Y is glucagon.
- 17. Answer (4)  
Herbivores are the key industry animals in any food chain.
- 18. Answer (3)
- 19. Answer (3)  
In female the correct sequence from pre zygotic to post zygotic phase is Oogenesis → Ovulation → Syngamy → Cleavage → Implantation → Parturition.



20. Answer (3)

21. Answer (2)

*Archaeopteryx* had some avian characters like long feathered tail and presence of feathered wings.

22. Answer (3)

23. Answer (1)

24. Answer (3)

Here P is oxygen and R is ozone.

25. Answer (3)

26. Answer (1)

**Case I :** Plant A when crossed with dwarf plant →

TT × tt

↓

Gametes	T	T
t	Tt	Tt
t	Tt	Tt

All tall

**Case II :** Plant B when crossed with dwarf plant

Tt × tt

↓

Gametes	T	t
t	Tt	tt
t	Tt	tt

50% tall and 50% dwarf

Plant A and Plant B were crossed

⇒

Gametes	T	T
T	TT	TT
t	Tt	Tt

27. Answer (2)

28. Answer (1)

Proteins are digested by trypsin and pepsin, fats are digested by steapsin and lipases and carbohydrates are digested by ptyalin and invertase.

29. Answer (1)

Parental combinations → I<sup>A</sup>I<sup>B</sup> × I<sup>A</sup>i

↓

Gametes	I <sup>A</sup>	I <sup>B</sup>
I <sup>A</sup>	I <sup>A</sup> I <sup>A</sup>	I <sup>A</sup> I <sup>B</sup> → 25% AB blood group
i	I <sup>A</sup> i	I <sup>B</sup> i → 25% B blood group

50% A  
Blood group

30. Answer (2)

**SECTION-III (Code-F)**

1. Answer (4)

2. Answer (4)

3. Answer (4)

4. Answer (2)

5. Answer (2)

6. Answer (2)

7. Answer (1)

8. Answer (4)

9. Answer (4)

10. Answer (2)

$$\tan(\theta + x) \cdot \tan(\theta - x) = 1$$

$$\Rightarrow \frac{\tan\theta + \tan x}{1 - \tan\theta \cdot \tan x} \times \frac{\tan\theta - \tan x}{1 + \tan\theta \cdot \tan x} = 1$$

$$\Rightarrow \frac{\tan^2\theta - \tan^2 x}{1 - \tan^2\theta \cdot \tan^2 x} = 1$$

$$\Rightarrow \tan^2\theta - \tan^2 x = 1 - \tan^2\theta \cdot \tan^2 x$$

$$\Rightarrow \tan^2\theta - \tan^2 x - 1 + \tan^2\theta \cdot \tan^2 x = 0$$

$$\Rightarrow \tan^2\theta (1 + \tan^2 x) - 1(\tan^2 x + 1) = 0$$

$$\Rightarrow (\tan^2 x + 1) \neq 0 \text{ or } \tan^2\theta = 1$$

$$\tan^2 x \neq -1 \quad \Rightarrow \tan^2\theta = 1 \Rightarrow \theta = 45^\circ$$

11. Answer (2)

12. Answer (4)

Sum of first five even terms = 25

$$a + d + a + 3d + a + 5d + a + 7d + a + 9d = 25$$

$$5a + 25d = 25$$

$$a + 5d = 5 \quad \dots(i)$$

and  $S_3 = -13$

$$\Rightarrow \frac{3}{2}(2a + 2d) = -13$$

$$\Rightarrow a + d = \frac{-13}{3} \quad \dots(ii)$$

$$\Rightarrow 4d = 5 + \frac{13}{3} \quad [\text{Subtracting (ii) from (i)}]$$

$$\Rightarrow d = \frac{28}{3} \times \frac{1}{4} = \frac{7}{3}$$

Using  $d = \frac{7}{3}$  in (ii), we get

$$a = \frac{-13}{3} - \frac{7}{3} = \frac{-20}{3}$$

$$S_{10} = \frac{10}{2} \left( 2 \times \frac{-20}{3} + (9) \frac{7}{3} \right)$$

$$= 5 \left( \frac{-40}{3} + \frac{63}{3} \right) = 5 \left( \frac{23}{3} \right) = \frac{115}{3}$$

13. Answer (4)

$$\frac{\cos 4\theta + 4 \cos 2\theta + 3}{\cos 4\theta - 4 \cos 2\theta + 3}$$

$$\text{As } \cos 4\theta = 2\cos^2 2\theta - 1$$

$$= \frac{2\cos^2 2\theta - 1 + 4 \cos 2\theta + 3}{2\cos^2 2\theta - 1 - 4 \cos 2\theta + 3}$$

$$= \frac{\cos^2 2\theta + 2 \cos 2\theta + 1}{\cos^2 2\theta - 2 \cos 2\theta + 1}$$

$$= \frac{(\cos 2\theta + 1)^2}{(\cos 2\theta - 1)^2} = \frac{(2\cos^2 \theta)^2}{(-2 \sin^2 \theta)^2}$$

$$= \cot^4 \theta.$$

14. Answer (3)

15. Answer (3)

