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PRINCE SAINIK SCHOOL

ADMISSION TEST - 2021

Date : 21 March, 2021 (Sunday)

Time : 10:00 AM to 12:00 Noon

1. If the HCF of 144 and 90 is expressible in the form 144x +90y, then value of x–y= :

(a) 3 (b) 2
(c) 5 (d) 1

2. How many prime factors are there in prime factorization of 5005.

(a) 2 (b) 4
(c) 6 (d) 7

3. F(x) is a polynomial in x. When F(x) is divided by (x–2), the remainder obtained is 3, when the same polynomial is divided by (x–3), the remainder obtained is 2. What is the remainder when F(x) is divided by (x–3) (x–2)

(a) – x + 5 (b) $-\frac{5}{3}x + 7$
(c) 0 (d) 5

4. On dividing $x^3 - 3x^2 + x + 2$ by a polynomial g(x), the quotient and remainder were x – 2 and –2x +4, respectively. Find g(x)

(a) $g(x) = x^2 + x + 1$ (b) $g(x) = -x^2 - x + 1$
(c) $g(x) = x^2 - x + 1$ (d) $g(x) = x^2 - x - 1$

5. On solving $\frac{25}{x+y} - \frac{3}{x-y} = 1, \frac{40}{x+y} + \frac{2}{x-y} = 5\, we\, get$:

(a) x = 8, y = 6 (b) x = 4, y = 6
(c) x = 6, y = 4 (d) None of these

6. If x = 2 and x =3 are roots of the equation $3x^2 - 2kx+2m=0$ then (k, m) = :

(a) $(\frac{15}{2}, 9)$ (b) $(9, \frac{15}{2})$
(c) $(\frac{9}{2}, 15)$ (d) (15,8)

7. Solve the quadratic equation: $\frac{x-1}{x-2} - \frac{x-2}{x-3} = \frac{x-5}{x-6} - \frac{x-6}{x-7}$

(a) $\frac{9}{2}$ (b) $\frac{3}{2}$
(c) $\frac{7}{2}$ (d) $\frac{1}{2}$

8. The difference between two numbers is 5 and difference in their squares is 65. The larger number is:

(a) 9 (b) 10
(c) 11 (d) 12

9. Find the quadratic equation whose roots are half of the reciprocal of the roots of the equation $ax^2 + bx + c = 0$

(a) $4ax^2 + 2bx + c = 0$ (b) $4cx^2 + 2bx + a = 0$
(c) $2cx^2 + bx + a = 0$ (d) $2ax^2 + bx + c = 0$

10. The sum of three numbers in AP. is 12 and the sum of their cubes is 288. Find the numbers.

(a) 3, 4, 5 (b) 2, 4, 6
(c) 2, 5, 8 (d) 3, 6, 9

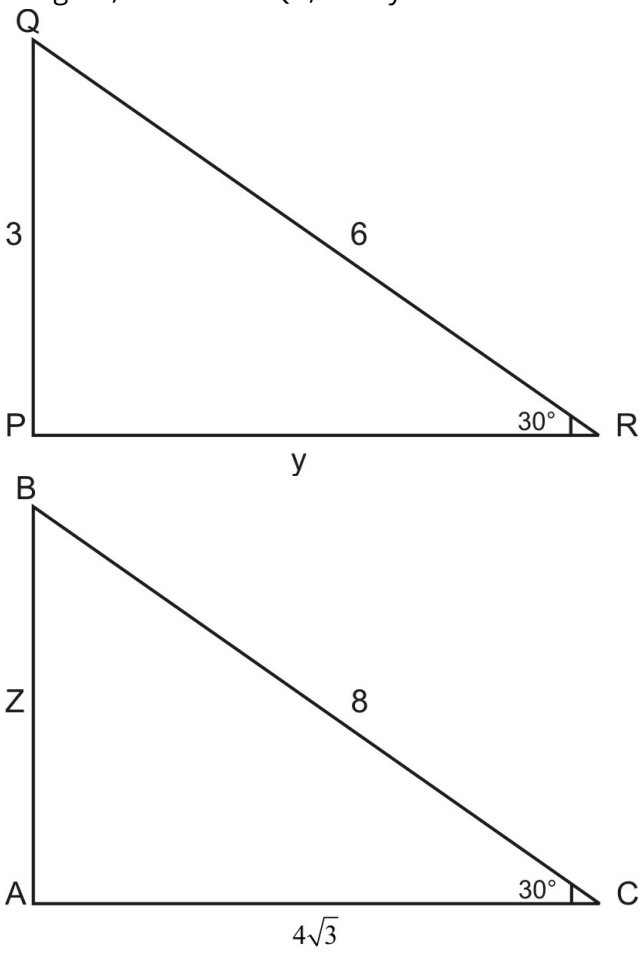
11. If sum of n terms of a sequence is given by $S_n = 2n^2 + 3n$, find its 50^{th} term.

(a) 250 (b) 225
(c) 201 (d) 205

12. Sum of n terms of the series $\sqrt{2} + \sqrt{8} + \sqrt{18} + \sqrt{32} + \ldots\ldots\ldots\ldots\ldots\ is$:

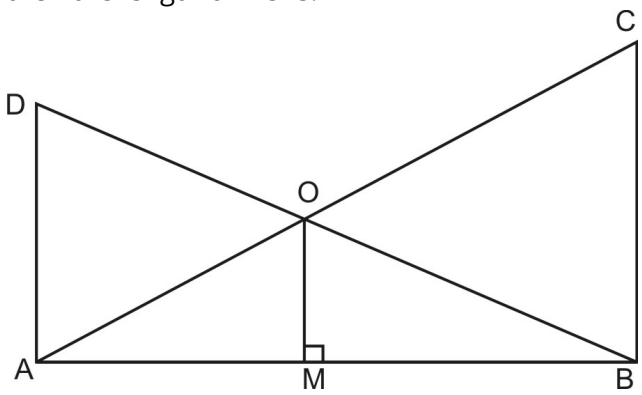
(a) $\frac{n(n+1)}{2}$ (b) 2n (n + 1)
(c) $\frac{n(n+1)}{\sqrt{2}}$ (d) 1

13. In figure, ΔABC ~ ΔPQR, then y + z is:



(a) $8\sqrt{3}cm$ (b) $4 + 3\sqrt{3}\,cm$
(c) $5 + 4\sqrt{3}\,cm$ (d) $6 + 3\sqrt{3}cm$

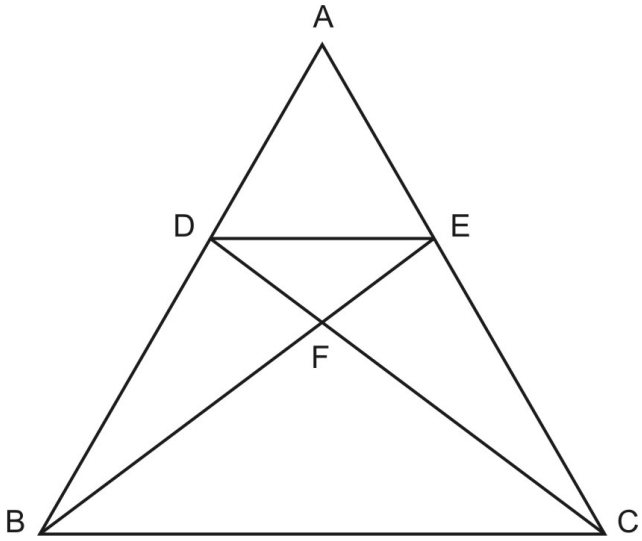
14. In the given figure DA ⊥ AB, CB ⊥ AB and OM ⊥ AB. If AO = 5.4 cm, OC = 7.2 cm. and BO = 6cm., then the length of DO is.



(a) 4.5 cm. (b) 4 cm.
(c) 5 cm. (d) 6.5 cm.

15. In the given figure, DE || BC and AD : DB = 5 : 4.

Find $\frac{ar(\Delta DEF)}{ar(\Delta CFB)}$



(a) 25 : 16 (b) 25 : 81
(c) 5 : 4 (d) 4 : 5

16. If (3, –4) and (–6, 5) are the extremities of the diagonal of a parallelogram and (–2, 1) is its third vertex, then its fourth vertex is:

(a) (–1, 0) (b) (0, –1)
(c) (–1, 1) (d) None of these

17. If the points A (1, 2), O (0, 0) and C (a, b) are collinear, then:

(a) a = b (b) a = 2b
(c) 2a = b (d) a = –b

18. If 5 $\tan\theta$= 4, then value of $\frac{5\sin\theta - 3\cos\theta}{5\sin\theta + 2\cos\theta}$ is :

(a) $\frac{1}{3}$ (b) $\frac{1}{6}$
(c) $\frac{4}{5}$ (d) $\frac{2}{3}$

19. As x increases from 0° to 90°, the value of cos x is :

(a) Increases
(b) Decreases
(c) Remains constant
(d) Increases, then decreases

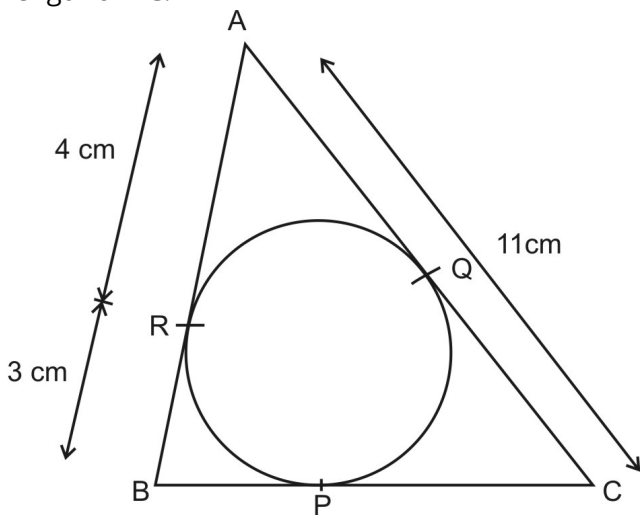
20. From a lighthouse 100 m high, its is observed that two ships are approaching it from west and south. If angles of depression of the two ships are 30° and 45° respectively the distance between the ships, in meters, is:

(a) $100(\sqrt{3}+1)$ (b) $100(\sqrt{3}+1)^2$
(c) 200 (d) 400

21. A person walking along a straight road observes that at the consecutive kilometre stones, the angles of elevation of a hill in front of him are 30° and 75°. Find the height of the hill. $\left(Given\ sin\ 75^\circ = \frac{\sqrt{3}+1}{2\sqrt{2}}\right)$

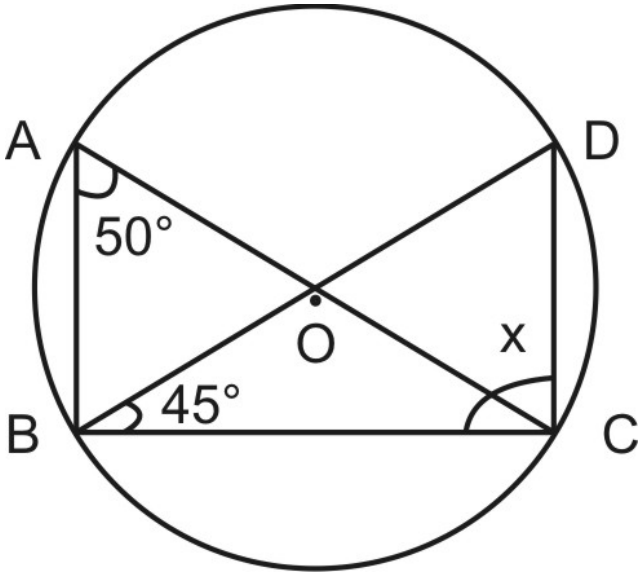
(a) $\frac{\sqrt{3}+1}{4}km$ (b) $\frac{\sqrt{3}-1}{4}km$
(c) $\frac{\sqrt{3}+1}{2}km$ (d) None of these

22. In figure, ΔABC is circumscribing a circle. Find the length of BC.



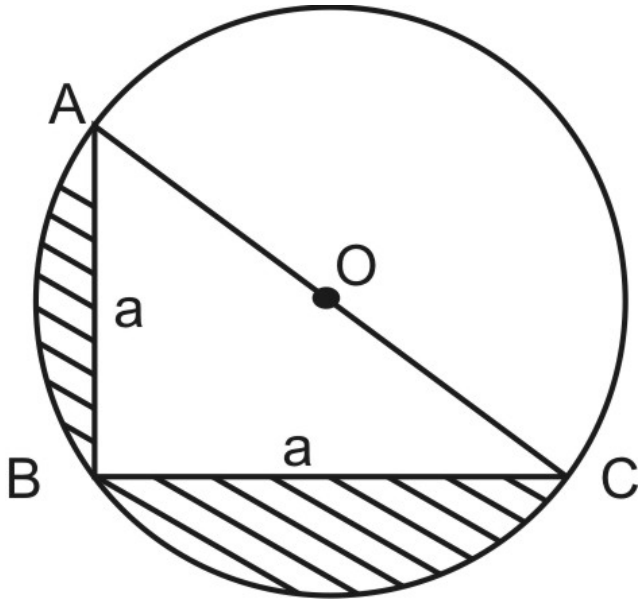
(a) 8 cm (b) 10 cm
(c) 12 cm (d) 14 cm

23. In the following figure. O is the centre of the circle. The value of x is



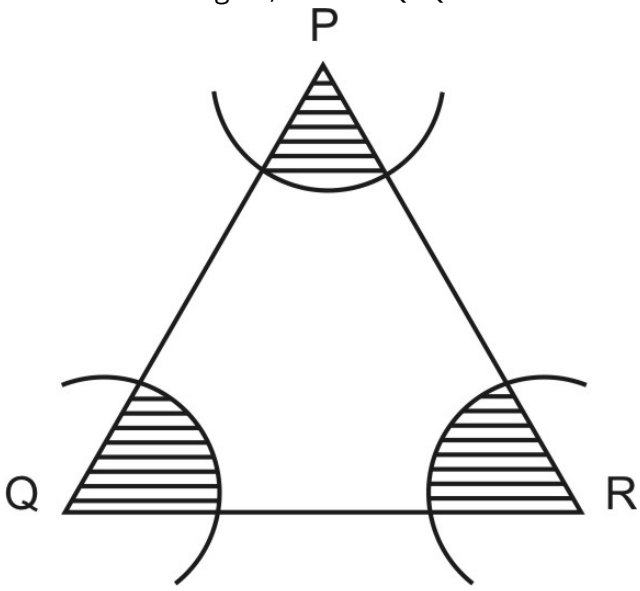
(a) 45° (b) 65°
(c) 85° (d) 95°

24. If AC passes through the centre of the circle, then the area of the shaded region in the given figure is



(a) $\frac{a^2}{2}(3-\pi)$ (b) $a^2\left(\frac{\pi}{2}-1\right)$
(c) $2a^2(\pi-1)$ (d) $\frac{a^2}{2}\left(\frac{\pi}{2}-1\right)$

25. In figure, arcs have been drawn with radii 14 cm each and with centres, P, Q and R. Find the area of the shaded region, where PQ=QR=RP



(a) 204 cm^2 (b) 308 cm^2
(c) 320 cm^2 (d) None of these

26. The radius of a sphere is increases by P% its surface area increase by:

(a) P % (b) P^2%
(c) $\left(2P+\frac{P^2}{100}\right)\%$ (d) $\frac{P^2}{2}\%$

27. Twelve solid spheres of the same size are made by melting a solid metallic cylinder of base diameter 2cm and height 16cm. The diameter of each sphere is:

(a) 4 cm (b) 3 cm
(c) 2 cm (d) 6 cm

28. If the arithmetic mean of the distribution x, 2x, 2x + 1, 2 is 7, then the value of x is:

(a) $\frac{5}{6}$ (b) $\frac{27}{5}$
(c) $\frac{26}{5}$ (d) $\frac{25}{5}$

29. A die is thrown twice. The probability of the sum being odd, is

(a) $\frac{1}{2}$ (b) $\frac{1}{3}$
(c) $\frac{1}{4}$ (d) $\frac{1}{6}$

30. From a pack of playing cards all cards whose numbers are multiple of 3 are removed. A card is now drawn at random. Then the probability that the card drawn is an even number is red card:

(a) $\frac{10}{52}$ (b) $\frac{1}{4}$
(c) $\frac{1}{5}$ (d) $\frac{3}{13}$

31. Bipin ..... to market. (Correct form of verbs)
(a) Go (b) Going
(c) Is go (d) Is going

32. If she ..... her own clothes, she wouldn't have to buy them. (Conditionals sentence)
(a) Makes (b) Made
(c) Had made (d) Have made

33. Neither Michelle nor Paul ..... registered yet. (Subject- verb- Concord)
(a) Is (b) Has
(c) Have (d) Are

34. Mathematics ..... difficult for Sally.
(a) Is (b) Has
(c) Have (d) Are

35. How ..... milk is available in the bowl? (Choose the determiners.)
(a) Some (b) Much
(c) A few (d) Any

36. I have been waiting for you for ..... hour. (Choose the article)
(a) a (b) an
(c) the (d) a few

37. My hand writing was not legible, My teacher (using appropriate modals.)
(a) Said, "You should pay a little more attention to your handwriting."
(b) Said, "you may pay a little more attention to your hand writing."
(c) Said, "You can pay a little more attention to your hand writing".
(d) Said. "You shall pay a little more attention to your handwriting."

38. Our boss was pleased with our work, he
(a) Promised, "You shall get a bonus"
(b) Promised "you can get a bonus."
(c) Promised, "You might get a bonus."
(d) Promised, "You could get a bonus".

39. Choose Suitable active and passive verb forms.
The robbers ..... by the police.
(a) have arrested (b) have been arrested
(c) was arrested (d) had arrested

40. The injured ..... to the hospital in an ambulance.

(a) were taking (b) was taking
(c) were taken (d) have taken

41. I told him ..... his face that he was a liar. (Choose the suitable prepositions)

(a) on (b) in
(c) out (d) back

42. Ravana was killed ..... Ram ..... a arrow.

(a) With, With (b) With, by
(c) by, with (d) by, by

43. The committee rejected the proposal ..... they did not think it was practical (Choose suitable connectors)

(a) or (b) but
(c) though (d) because

44. His fans think that he is ..... talented ..... handsome

(a) either ..... or
(b) not only ..... but also
(c) neither ..... nor
(d) so ..... that

45. Implied comparision between two things of unlike nature like and as are omitted. (literary terms)

(a) metaphor (b) simile
(c) Personification (d) Irony

46. Use of sounds that suggest the meaning of the word.

(a) Personification (b) Simile
(c) Onomatopoeia (d) Pun

47. Farmers ..... in the filed. (Choose form of verbs)

(a) are working (b) work
(c) working (d) is working

48. The shopkeepers ..... much money.

(a) earns (b) was earning
(c) have been earned (d) earned

49. Dhoni will have .....

(a) Slept (b) Sleep
(c) Sleeps (d) Sleeping

50. She ..... to me for more than a year.

(a) is not speaking
(b) has not spoken
(c) has not been speaking
(d) did not speak

51. When one unit electric charge moves from one point to another point in an electric circuit, then the amount of work done in joule is known as?

(a) Electric Current
(b) Electric resistance
(c) Electric conductance
(d) Potential difference

52. Point to be kept in mind for verification of ohm's law is:

(a) Ammeter and voltmeter should be connected in series.
(b) Ammeter should be connected in series and voltmeter in parallel.
(c) Ammeter should be connected in Parallel and voltmeter in Series.
(d) Ammeter should be connected in Parallel.

53. Which of the following colour is least scattered by fog, dust or smoke?

(a) Violet (b) Blue
(c) Red (d) Yellow

54. Focal length of plane mirror is.

(a) Infinite (b) Zero
(c) One (d) None of these

55. Who has stated the right hand thumb rule?

(a) Oersted (b) Fleming
(c) Einstein (d) Maxwell

56. Which reagent is able to dissolve gold and platinum?

(a) Nitric acid (b) Aqua-regia
(c) Hydrochloric acid (d) sulphuric acid

57. 10^{-3} mole of KOH is added to 10 litres of pure water at 25°C, The pH will change by (assume no change in volume occurs)

(a) 3 (b) 4
(c) 7 (d) 11

58. Nature of Al_2O_3 is

(a) Acidic (b) Basic
(c) Amphoteric (d) Neutral

59. The element X on reacting with chlorine forms a water soluble compound having high melting point, Element X is.

(a) Magnesium (b) Argon
(c) Carbon (d) Neon

60. When silver is exposed to air it gets a black coating of

(a) $AgNO_3$ (b) Ag_2S
(c) Ag_2O (d) Ag_2CO_3

61. In a neuron conversion of electrical signal to a chemical signal occurs at/ in

(a) cell body (b) axonal end
(c) dendritic end (d) axon

62. The movement of shoot towards light is-

(a) Geotropism (b) hydrotropism
(c) Chemotropism (d) phototropism

63. Which part of alimentary canal receives bile from the liver?

(a) Stomach (b) Small intestine
(c) Large intestine (d) Oesophagus

64. Characters transmitted from parents to off spring are present in

(a) Cytoplasm (b) Ribosome
(c) Golgi bodies (d) Genes

65. The number of pair (s) of sex chromosome in the zygote of human is

(a) 1 (b) 2
(c) 3 (d) 4

66. Why did general dyer open fire at the peaceful gathering at Jalliawala Bagh on 13 April 1919.

(a) General Dyer. wanted to enforce martial law.
(b) he wanted to create a feeling of terror and awe in the minds of satyagrahis.
(c) He wanted to demoralise the local congress leaders.
(d) He wanted to gain prominence into the eye of British government.

67. Why did Gandhi ji begin fast unto death when Dr. BR Ambdedkar demanded separate electorate for Dalits?

(a) separate electrorate would creat division in the society
(b) Separate electrorates would slow down the process of integration into society
(c) With separate electorates. dalits would gain respect in Society
(d) The condition of dalits would become better

68. Which one of the following is a major reason that prevents the poor from getting loans from the banks?

(a) Lack of Capital
(b) Absence of mediators
(c) Not affordable due to high rate of interest
(d) Absence of collateral

69. Following is not a challenge for indian democracy:-

(a) Social and economic inequality
(b) Regionalism
(c) Universal adult franchise
(d) Casteism

70. Champaran movement was launched by GandhiJi in favour of

(a) high revenue demands
(b) indigo planters
(c) Mill oweners
(d) Salt tax

71. Which system has been replaced by" money as a medium of exchange:-

(a) Exchange system
(b) Commodity System
(c) Barter system
(d) double coincidence of wants.

72. What is the guiding philosophy of the Bhartiya Janta Party?

(a) Bahujan Samaj
(b) Minority
(c) Revolutionary Democracy.
(d) Modernity

73. Satyagraha was

(a) Pure soul focre
(b) Physical force
(c) Weapon of the weak
(d) forces of arms

74. Which one of the following is the oldest oil producing state of India?

(a) Gujrat (b) Maharashtra
(c) West Bengal (d) Assam

75. Who was responsible for the unification of Germany

(a) Bismarck (b) Garibaldi
(c) Cavour (d) Mazzini

76. The resolution of poorn swaraj was adopted at which congress session?

(a) Karachi (b) Lucknow
(c) Lahore (d) Haripur

77. Iron ore is sent through pipelines in the form of

(a) Liquid (b) Gas
(c) Slurry (d) Solid

78. Khetri is famous for

(a) Chemical Fertilizers (b) iron smelting
(c) Copper smelting (d) aluminium smelting

79. In which year did Gandhi ji return to India from South Africa?

(a) January 1915 (b) February 1916
(c) January 1916 (d) February 1915

80. Who among the following is the founder of the Bahujan Samaj Party

(a) Kanshi Ram (b) Shahu Maharaj
(c) BR Ambedkar (d) Jyotiba Phule

81. Directions: (Q:1 to Q:4) Choose the letters group that best represents a relationship similar to one expressed in original pair of letters-
CIRCLE : RICELC :: SQUARE : ?

(a) QSUERA (b) QUSERA
(c) UQSAER (d) UQSERA

82. EVTG : HSQJ :: CXVE :?

(a) EVUF (b) FSUH
(c) FUSH (d) FUTG

83. ACFJ : ZXUQ :: EGJN : ?

(a) DBYU (b) VTQM
(c) VTRP (d) VUSQ

84. PALE : LEAP :: POSH : ?

(a) HSOP (b) POHS
(c) SHOP (d) None of these

85. Directions: (Q:5 to Q:6) Which number completes the second pair in same way as first pair?
3 : 11 :: 7 : ?

(a) 22 (b) 29
(c) 41 (d) 51

86. 10 : 3 :: 50 : ?

(a) 6 (b) 7
(c) 8 (d) 9

87. Directions: (Q:7 to Q:10) In the given series, find the next missing term.
AZ, BY, CX, ?

(a) EF (b) GH
(c) IJ (d) DW

88. AZ, CX, FU, ?

(a) IV (b) JQ
(c) KS (d) HR

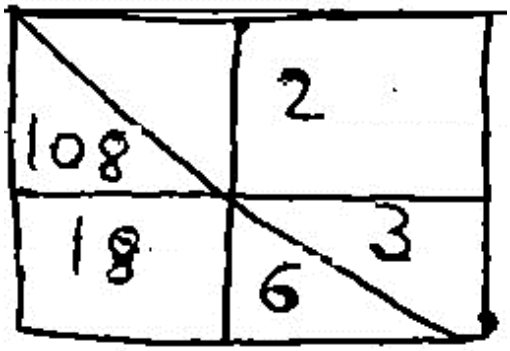
89. 1, 9, 25, 49, ?

(a) 81 (b) 64
(c) 72 (d) 63

90. B 6, D 12, F 18, H 24, ?

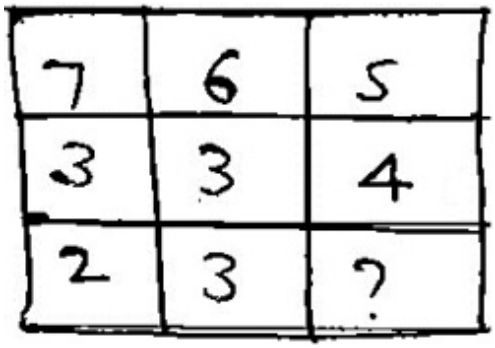
(a) J 36 (b) I 30
(c) I 36 (d) J 30

91. Directions: (Q:11 to Q:13) Find missing term in figure-



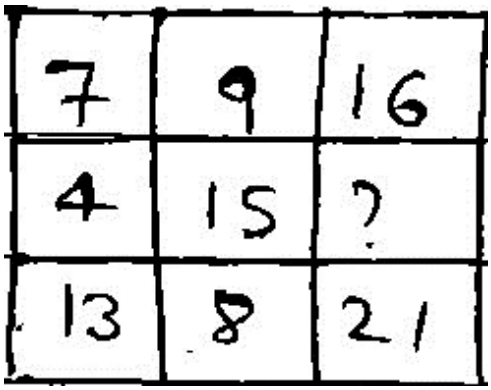
(a) 1 (b) 36
(c) 216 (d) 1944

92.



(a) 12 (b) 3
(c) 4 (d) 5

93.



(a) 29 (b) 19
(c) 23 (d) 25

94. Directions: (Q:14 to Q:16) Find the word which cannot be made from the letters of given word-
SEQUENTIAL

(a) QUEEN (b) LATE
(c) NEST (d) SQUARE

95. TEMPERAMENT

(a) METER (b) PETER
(c) TENTER (d) TESTER

96. CONSTRUCTION

(a) SUCTION (b) COINS
(c) CAUTION (d) NOTION

97. Arrange the given words in the order they occur in dictionary-
1. SIGN 2. SOLID 3. SCENE 4. SIMPLE

(a) 3,1,2,4 (b) 3,1,4,2
(c) 3,4,1,2 (d) 3,4,2,1

98. Which letter will be sixth to the right of the nineteenth letter from right end of alphabets.

(a) N (b) M
(c) Y (d) F

99. Arrange the letters to form a meaningful word-
P N O A C L M I
1 2 3 4 5 6 7 8

(a) 2, 7, 8, 6, 4, 3, 1, 5 (b) 4, 7, 5, 2, 6, 8, 1, 3
(c) 5, 3, 7, 1, 6, 4, 8, 2 (d) 7, 1, 8, 5, 6, 2, 4, 3

100. If MALE = 31 and PLAY = 54 then CLASS = ?

(a) 35 (b) 31
(c) 54 (d) 45

Prince Sainik School Admission Test *Final Answer Key* *Class - XI* *Date : 21-03-2021*

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