VELAMMAL

KNOWLEDGE PARK

BODHI CAMPUS - PONNERI

MERIT

SCHOLARSHIP TEST

SAMPLE PAPER

Class : (VIII – IX)

MATHEMATICS

1. If $x=5+2\sqrt{6}$, then $\frac{(x-1)}{\sqrt{x}}$ is equal to

   A) $\sqrt{2}$ B) $2\sqrt{2}$ C) $\sqrt{3}$ D) $2\sqrt{3}$

2. Number of diagonals in a decagon is

   A) 42 B) 35 C) 28 D) 34

3. From a bag containing 15 red balls, 12 green balls, 18 black balls and 9 blue balls, a ball is drawn at random. If the probability of drawing that specific coloured ball is 0.28, then ball of which colour has been drawn?

   A) Red B) Green C) Black D) Blue

4. Which is the largest among the following?

   $\sqrt[4]{6}$, $\sqrt{2}$, $\sqrt[3]{4}$, $\sqrt[8]{25}$

   A) $\sqrt[8]{25}$ B) $\sqrt[3]{4}$ C) $\sqrt{2}$ D) $\sqrt[4]{6}$

5. What rate percent is one minute 12 seconds to an hour?

   A) 2% B) 3% C) 4% D) 5%

6. The difference between compound interest and simple interest on the sum of Rs. 7500 for 2 years at the same rate of interest is Rs. 108. The rate of interest per annum is

   A) 6% B) 8% C) 12% D) 15%

7. The value of $\sqrt{214+\sqrt{130-\sqrt{88-\sqrt{44+\sqrt{25}}}}}$

   A) 14 B) 15 C) 16 D) 17

8. If x = 1, y = -1, and z = -1, then the value of $\frac{x^2yz^2}{3}$ is

   A) $\frac{1}{3}$ B) $-\frac{1}{3}$ C) 1 D) -1

9. The area of a square is 225 sqm. Then, the perimeter of the square is :

   A) 50 m B) 15 m C) $15\sqrt{2}m$ D) 60 m

10. If the perimeter of a rhombus is 52 cm and it's longer diagonal is 24 cm then length of another diagonal is :

    A) 10 cm B) 12 cm C) 14 cm D) 16 cm

11. If the selling price of 12 articles is equal to the cost price of 15 articles, then the percentage gain or loss is

    A) 25% gain B) 25% loss C) 30% gain D) 30% loss

12. Out of 50 observations the mean of 25 observations is 30 and mean of rest 25 observation is 32, Then mean of 50 observation is .

    A) 34 B) 33 C) 32 D) 31

13. Two numbers are respectively 25% and 40% less than a third number. What percent is the second of the first ?

    A) 90% B) 80% C) 70% D) 60%

14. If a room has dimensions 50 m by 30 m, a square carpet 20 m is laid on the floor, then the area not carpeted is

    A) 1100 m^2 B) 110 m^2 C) 1100 cm^2 D) 220 cm^2

15. Standard form of $\frac{117}{-52}$ is

    A) $\frac{-117}{52}$ B) $\frac{9}{-4}$ C) $\frac{-9}{4}$ D) $\frac{3}{2}$

16. The area of a rectangle is the same as the area of a square of side 12 cm, then the perimeter of the rectangle if its length is 24 cm is _____ .

A) 72 cm B) 48 cm C) 60 cm D) 70 cm

17. Solve the equation : $\frac{x}{4}-\frac{x}{5}=1$.

A) 20 B) 9 C) 1 D) $\frac{2x}{9}=1$

18. If the ratio of the areas of two circles is 100 : 1, then the ratio of their radii is :

A) 1 : 100 B) 100 : 1 C) 10 : 1 D) 1 : 10

19. Evaluate : $\sqrt{41-\sqrt{21+\sqrt{19-\sqrt{9}}}}$.

A) 3 B) 6 C) 5 D) 6.4

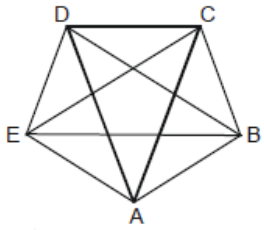
20. If x/y = 6/5 then $\frac{x^2+y^2}{x^2-y^2}$ is :

A) $\frac{36}{25}$ B) $\frac{25}{36}$ C) $\frac{11}{61}$ D) $\frac{61}{11}$

21. If $\left(1^3+2^3+3^3+4^3\right)^{3/2}=\frac{1}{x}$, then x is

A) 100 B) 1/100 C) 1000 D) 1/1000

22. ABCDE is a regular pentagon. A star of five points ACEBDA is formed to join their alternate vertices. The sum of all five vertex angles of this star is



A) Two right angle
B) Three right angle
C) Four right angle
D) Five right angle

23. If a + b = 12, ab =17 then the value of (4 + a) (4 + b) is .

A) 61 B) 64 C) 81 D) 74

24. In a class, the number of boys is more than the number of girls by 12% of the total strength. The ratio of boys to girls is :

A) 11 : 14 B) 14 : 11 C) 25 : 28 D) 28 : 25

25. Six more than one-fourth of a number is two fifth of the same number. Then the number is :

A) 30 B) 40 C) 50 D) 60

26. The value of $\frac{(4.7)^3-(2.7)^3}{(4.7)^2+4.7\times2.7+(2.7)^2}$ is

A) 2 B) 7.4 C) 5 D) 84.14

27. Each side of a square is 5 cm. The perimeter of the equilateral triangle formed on the diagonal of the square would be

A) 15 cm B) 20 cm C) $20\sqrt{2}$ cm D) $15\sqrt{2}$ cm

28. The average age of two brothers is 13. It is increased by 11 years when their mother's age is also included. The age of the mother is :

A) 45 years B) 46 years C) 47 years D) 48 years

29. Reduce to lowest terms, $\frac{a^2-b^2}{ab}-\frac{ab-b^2}{ab-a^2}$ is equal to :

A) $\frac{a}{b}$ B) $\frac{a^2-2b^2}{ab}$ C) a^2 D) a – 2b

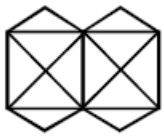
30. Find the missing term in the following table :

1	7	6
3	3	?
5	4	8
35	74	104

A) 1 B) 2 C) 3 D) 4

31. If **RENT** is written as **÷ + × –**, **SAND** is written as **# / × <** then how can **START** be written in that code?
A) + – / ÷ – B) # – / ÷ – C) × ÷ / – + D) × – / ÷ –

32. Find the number of triangles in this figure?



A) 12
B) 20
C) 22
D) 24

33. If x + y = 5 and xy = 6 the value of $\left(x^3 - y^3\right)$ is
A) 39 B) 19 C) -63 D) 63

34. Which of these numbers is the average of the remaining three ?
A) 26 B) 39 C) 30 D) 61

35. If a number is divisible by 9 and 15, then it is always divisible by
A) 30 B) 45 C) 135 D) 27

36. Area of a trapezium is 220 cm^2 and its height is 4 cm. If one of the parallel sides is 97 cm, then other parallel side is
A) 47 cm B) 13 cm C) 20 cm D) 23 cm

37. Working hours of 10 days of an employee are as follows
10, 5, 7, 4, 8, 6, 7, 6, 4, 3
The average working hours of the employee are
A) 4.9 B) 5.9 C) 6.1 D) 6

38. If x = 0.235, then the value of 12x + 1 is
A) 3.8 B) 3.82 C) 3.7 D) 3.72

39. If each interior angle of a regular polygon is 120°, then the polygon is
A) Triangle B) Pentagon C) Hexagon D) Nonagon

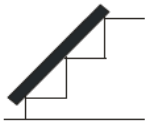
40. The curved surface area of a cylinder whose diameter is 42 cm and height is 5 cm, is
A) 330 cm^2 B) 660 cm^2 C) 1320 cm^2 D) 2640 cm^2

PHYSICS

41. In which of the following cases, does a net zero force act on the object?
A) A ball rolling on the ground B) A car taking a turn
C) A speeding bus
D) A bicycle moving straight with constant speed

42. A wooden box is given horizontal push of same strength on leveled surfaces of different nature. It travels shortest before coming to rest on
A) Marble floor B) Glass floor
C) Polished wooden floor D) Cotton bed

43. A plank is supported on the steps of a stair case as shown in figure, How many forces are acting on the plank ?



A) 1 B) 5 C) 6 D) 7

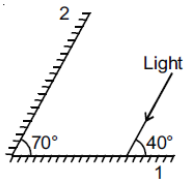
44. Rocket works on the principle of conservation of :
A) Mass B) Linear momentum C) Energy D) Angular momentum

45. An athlete completes one round of a circular track of radius R in 40 s. His displacement at the end of 2 minutes will be :
A) 2πR B) 6 πR C) 2R D) zero

46. The numerical ratio of displacement to distance is :
A) always less than one B) always equal to one
C) always more than one D) equal to or less than one

47. Four bodies are of m, 2m, 3m, 4m masses. In which body acceleration produced will be maximum on applying equal amount of force an each one of them.
A) m B) 2m C) 3m D) 4m

48. Two plane mirrors are inclined at an angle of 70°. For a ray of light, incident on mirror 1 as shown, its angle of reflection from mirror 2 is



A) Greater than its angle of reflection at mirror 1
B) Lesser than its angle of reflection at mirror 1
C) Equal to 70° D) Greater than 40°

49. Choose the correct alternative where should an object to placed so that a real and inverted image of the same size is obtained by a convex lens.
A) At the focus of the lens B) At twice the focal length
C) At infinity
D) Between optical centre and focus of a lens

50. We can see the objects only when :
A) The object absorb all the light B) Scattered light reaches our eyes
C) The objects allow all the light pass through them
D) None of these

51. Hypermetropia is :
A) An eye defect in which image of an object is formed behind the retina.
(B) An eye defect in which image of an object is formed before the retina
(C) A lens defect in which image is not formed sharply on a single point.
(D) Lens defect in which a parallel beam of light does not exactly pass through the focus of the lens.

52. At a given temperature, sound travels fastest in
A) solids B) Gases C) Liquids D) Vaccuum

53. If I is the current through a wire and e is the charge of electron, then the number of electrons in t sec. will be given by
A) $\frac{le}{t}$ B) lte C) $\frac{e}{lt}$ D) $\frac{lt}{e}$

54. If two ends of a wire connected to a battery, are dipped in distilled water, the compass needle brought near the circuit :
A) would keep moving in anticlockwise direction continuously.
B) would keep moving in clockwise direction continuously.
C) would remain still.
D) would show deflection.

55. The circuit is discontinuous :
A) when the switch is in 'OFF' mode
B) when the switch is in 'ON' mode
C) without any source of current D) without a bulb

56. The angle between particle velocity and wave velocity in a transverse wave is :
A) zero B) π/4 C) π/2 D) π

57. The cause of formation of cyclones is :
A) Air rotates at low pressure with high speed
B) Air rotates at high pressure with high speed
C) Air rotates at high pressure with low speed
D) Air rotates at low pressure with low speed

58. Which is not true for a wave?
A) Wave velocity, v = nλ B) Energy is transferred during wave motion
C) Unit of wave velocity is m/s D) All waves can pass through vacuum

59. An explosion takes place on moon. The sound of explosion will reach the earth-
A) after eight minutes B) after eight hours
C) never D) at once

60. A sound wave is travelling from east to west. In which direction do the molecules in the air vibrate ?
A) West – east B) North – south C) Up – down D) None of these

CHEMISTRY

61. The correct increasing order of chemical reactivities of the given metals is
A) Fe < Cu < Zn B) Zn < Fe < Cu C) Cu < Zn < Fe D) Cu < Fe < Zn

62. Match the following :

	Column I		Column II
a.	Paraffin wax	(i)	Naphthalene
b.	Coal tar	(ii)	Extraction of metals
c.	Coke	(iii)	Fire extinguisher
d.	Sodium bicarbonate	(iv)	Ointments

A) a (iv), b (i), C (ii), d (iii) B) a (ii), b (iii), c (iv), d (i)
C) a (i), b (iv), C (ii), d (iii) D) a (iv), b (iii), c (ii), d (i)

63. Metal which can not store in pouches ?
A) sodium B) calcium C) magnesium D) zinc

64. Metals react with acid to form -
A) basic oxides B) salts and hydrogen C) acidic oxides D) hydrides

65. Which of the following is/are fire-resistant fibres?
A) Asbestos B) Nomex C) Kermel D) All of these

66. **Statement - 1 :** Graphite is used as an electrode in an electrolytic cell.
Statement - 2 : Graphite is an example of non-metal .
Choose the correct statement :
A) Statement 1 and 2 are true and statement 2 is the correct explanation of statement 1
B) Statement 1 and 2 are true but statement 2 is not the correct explanation of statement 1.
C) Statements 1 and 2 are false
D)Statement 1 is true and statement 2 is false

67. Some common changes are classified in given table :
(i) Stritching a shirt – Irreversible
(ii) Breaking of an egg . Chemical change
(iii) Lighting an electric bulb . Reversible
(iv) Occurance of new moon . Non-periodic
(v) Dissolving sugar in water . Physical
Which of the following are correctly matched
A) ii, iv, v B) i , iii , v C) ii , v D) All

68. An example of a non-biodegradable substance is :
A) tin can B) vegetable can C) cotton D) paper

69. Which of the following is used for making magnetic recording tapes in audio cassettes , video cassettes and floppy discs ?
A) Mylar B) Orlon C) PVC D) Lycra

70. The non metal which is a liquid at room temperature is -
A) chlorine B) nitrogen C) bromine D) hydrogen

71. Percentage of carbon present in the sample of anthracite is :-
A) 94 - 98% B) 27 - 30% C) 78 - 86 % D) 27 %

72. Which of the following is an example of thermosetting plastic?
A)Melamine B) Polythene C) PVC D)All the above

73. CO_2 gas when bubbled through limewater, produces white precipitate. This dissolves on passing CO_2 gas in excess. The compounds 'A' and 'B' formed are respectively :
A) 'A' is $CaHCO_3$ and 'B' is $Ca(HCO_3)_2$
B) 'A' is $CaCO_3$ and 'B' is $Ca(OH)HCO_3$
C) 'A' is $Ca(OH)HCO_3$ and 'B' is $Ca(HCO_3)_2$
D) 'A' is $CaCO_3$ and 'B' is $Ca(HCO_3)_2$

74. The metal which can displace zinc from its salt solution is -
A) Mg B) Fe C) Pb D)Cu

75. Which of the following is an example of amphoteric oxide ?
A) ZnO B) CO C) Fe_2O_3 D) FeO

76. Fabric polycot is prepared by mixing :
A) polyester with silk B) polyester with nylon
C) polyester with cotton D) polyester with silk and cotton

77. In displacement reactions -
(A) a less active metal displaces a more active metal.
(B) a more active non- metal is displaced by a less active non metal.
(C) a less active non-metal displaces hydrogen from dilute acids.
(D) a more active metal displaces hydrogen from dilute acids.

78. Separation of fractions of petroleum is done by-
A) simple distillation B) destructive distillation
C) fractional distillation D) sedimentation

79. Which of the following statements regarding pure water is correct ?
A) Pure water acts as an insulator when 6V battery is used.
B) Pure water has maximum density at 4°C and minimum at 0°C.
C) Pure water is neutral to litmus.
D)All are correct

80. The flame of candle has three zones. The outer zone is blue, the middle zone is yellow and the inner zone is black. Which is correct regarding this ?
A) The outer zone is least hot. B) The middle zone is hottest.
C) The inner zone is least hot. D)All the zones have same temperature.

BIOLOGY

81. Person known for his pioneering efforts in promoting the green revolution world wide is ....
A) Benjamin Franklin B) Noman Borlaug
C) Robert Brown D) Albert Einstein

82. Which of the following crops would enrich the soil with nitrogen ?
A) Apple B) Rice C) Beans D) Potato

83. Conjoined twins are known as .....
A) Fraternal twins B) Dizygotic twins
C) Non identical twins D) Siamese twins

84. Identify the "incorrect statement" from the following
A) Fertilization that takes place outside the female body is called external fertilization.
B) Cows, hens are example for internal fertilization
C) Small number of eggs are produced in animals which perform internal fertilization
D) Chances of survival of offspring are more in animals performing external fertilization

85. Identify the odd one from the following:
A) Fallopian duct B) Ovaries C) Birth canal D) Vas defference

86. Which of the following hormone is responsible for ovulation ?
A) LH B) Testosteron C) Estrogen D) Adrenaline

87. Rhizobium can live in the root nodules of
A) Lemon B) Lettuce C) Soyabean D) Pine

88. Mosquitoes are vectors for some diseases. Some diseases are caused by protozoans, leading to fever and anaemia. The above information describes the disease
A) Cholera B) Malaria C) Filariasis D) Hepatitis B

89. Environment in which animal lives is called its
A) Home B) Reservior C) Habitat D) Resort

90. The totality of genes, species and ecosystems of a region is known as
A) Biosphere B) Biocommunity C) Bioconservation D) Biodiversity

91. Paddy can not be grown in the winter season because it requires .....
A) A lot of nutrients B) More temperature and less nutrients
C) A lot of water D) Less water

92. The shape of bacteria responsible for curdling of milk is
A) Spherical B) Rod shaped C) Comma shaped D) Spiral

93. The study of algae is .....
A) Mycology B) Phycology C) Microbiology D) Agronomy

94. Identify the endemic fauna of Pachmarhi Biosphere Reserve
A) Bison B) Indian giant squirrel
C) Flying squirrel D) All the above

95. Identify the correct statement from the following.
A) An embryo is composed of a single cell
B) Dolly was produced from the udder cell nucleus of the female – Finn Dorsett sheep
C) Viviparous animals lay eggs
D) In human females each ovary produces many ova in a month.

96. The massive step taken to augment food production by adapting modern agricultural practices in India is .....
    A) Silver revolution B) White revolution
    C) Blue revolution D) Green revolution
97. Which of the transgenic crop may help in solving the problem of night blindness in developing countries
    A) Bt.corn B) Flavr savr tomato
    C) Golden rice D) Bt cotton
98. Vani is supposed to face an interview. During the first five minutes before the interview she experiences sweating, increased rate of heart beat, increased rate of respiration etc., Which of the following hormones has increased in her blood and is responsible for her restlessness/tension.
    A) STH B) Oestrogen C) Insulin D) Adrenaline
99. "VAM" represent
    A) Saprophytic fungi B) Symbiotic fungi
    C) Saprophytic bacteria D) Symbiotic bacteria
100. In Mitochondria, ATP is synthesized at
    A) Matrix B) F_1 particles C) Ribosomes D) Outer membrane

********** THE END **********

VELAMMAL KNOWLEDGE PARK, PONNERI

VKP MERIT SCHOLARSHIP TEST 2017-18

Class VIII - IX

Answer Key

Mathematics & Reasoning

Q.No	Key	Q.No	Key	Q.No	Key	Q.No	Key
1	**B**	11	**A**	21	**D**	31	**B**
2	**B**	12	**D**	22	**A**	32	**C**
3	**A**	13	**B**	23	**C**	33	**B**
4	**B**	14	**A**	24	**B**	34	**B**
5	**A**	15	**C**	25	**B**	35	**B**
6	**C**	16	**C**	26	**A**	36	**B**
7	**B**	17	**A**	27	**D**	37	**D**
8	**B**	18	**C**	28	**B**	38	**B**
9	**D**	19	**B**	29	**A**	39	**C**
10	**A**	20	**D**	30	**B**	40	**B**

Physics

Q.No	Key	Q.No	Key
41	**B**	51	**A**
42	**B**	52	**B**
43	**D**	53	**D**
44	**B**	54	**A**
45	**D**	55	**A**
46	**D**	56	**C**
47	**A**	57	**A**
48	**B**	58	**D**
49	**B**	59	**C**
50	**B**	60	**A**

Chemistry

Q.No	Key	Q.No	Key
61	**D**	71	**D**
62	**C**	72	**A**
63	**A**	73	**D**
64	**B**	74	**A**
65	**D**	75	**A**
66	**B**	76	**C**
67	**B**	77	**D**
68	**A**	78	**C**
69	**A**	79	**D**
70	**C**	80	**C**

Biology

Q.No	Key	Q.No	Key
81	**B**	91	**C**
82	**C**	92	**B**
83	**D**	93	**B**
84	**D**	94	**D**
85	**D**	95	**B**
86	**C**	96	**D**
87	**C**	97	**C**
88	**B**	98	**D**
89	**C**	99	**B**
90	**D**	100	**B**

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