RISE SCHOLARSHIP CUM ADMISSION TEST – SAMPLE PAPER

Class – 8th to 9th

Rani Institute of Scholastic Education

Read all the instructions carefully before answering your questions.
You are not allowed to leave the exam hall before the end of the test.

Time Allotted: 2 Hrs | Maximum Marks: 400

GENERAL INSTRUCTIONS

- This booklet is your question paper. Answers are to be marked in the provided OMR sheet.
- This question paper contains FIVE sections.
  - Section- I is **MATHEMATICS**,
  - Section - II is **PHYSICS**,
  - Section - III is **CHEMISTRY**,
  - Section–IV IS **BIOLOGY**,
  - Section – V is **APTITUDE**.
- There are a total of 100 questions.
- All questions are **Multiple Choice questions with single answer correct**.
- Each question carries **+4 marks** for correct answer, **No negative marks**

FILLING OMR SHEET

Ensure all details in the OMR are filled before you start marking your answers.

On the OMR sheet, darken the appropriate bubble with **BALL POINT PEN ONLY**

Name of the Candidate	:		
Roll Number	:		
Date of Examination	:	***Centre :***	

Useful Data

PHYSICS

Acceleration due to gravity	: g = 10 m/s^2
Planck constant	: h = 6.6 × 10^{-34} $J-s$
Charge of electron	: e = 1.6 × 10^{-19} C
Mass of electron	: $m_e = 9.1\times10^{-31} kg$
Permittivity of free space	: $\varepsilon_0 = 8.85\times10^{-12} C^2/N-m^2$
Density of water	: $\rho_{water} = 10^3 kg/m^3$
Atmospheric pressure	: $Pa = 10^5 N/m^2$
Gas constant:	R = 8.314 J K^{-1} mol^{-1}

CHEMISTRY

Gas Constant R	=	8.314 J $K^{-1}mol^{-1}$
	=	0.0821 Lit atm $K^{-1}mol^{-1}$
	=	1.987 ≈ 2 Cal $K^{-1}mol^{-1}$
Avogadro's number N_a	=	6.023 × 10^{23}
Planck's constant h	=	6.625 ×10^{-34} $J.s$
	=	6.625 ×10^{-27} $erg.s$
1 Faraday	=	96500 coulomb
1 calorie	=	4.2 joule
1 amu	=	1.66 ×10^{-27} kg
1 eV	=	1.6 ×10^{-19} J

Atomic No: H = 1, He = 2, Li = 3, Be = 4, B = 5, C = 6, N = 7, O = 8, F = 9, Ne = 10, Na = 11, Mg = 12, Si = 14, Al = 13, P = 15, S = 16, Cl = 17, Ar = 18, K = 19, Ca = 20, Cr = 24, Mn = 25, Fe = 26, Co = 27, Ni = 28, Cu = 29, Zn = 30, As = 33, Br = 35, Ag = 47, Sn = 50, I = 53, Xe = 54, Ba = 56, Pb = 82, U = 92.

Atomic masses: H = 1, He = 4, Li = 7, Be = 9, B = 11, C = 12, N = 14, O = 16, F = 19, Na = 23, Mg = 24, Si = 28, Al = 27, P = 31, S = 32, Cl = 35.5, K = 39, Ca = 40, Cr = 52, Mn = 55, Fe = 56, Co= 59, Ni = 58.7, Cu = 63.5, Zn = 65.4, As = 75, Br = 80, Ag = 108, Sn = 118.7, I = 127, Xe = 131, Ba = 137, Pb = 207, U = 238.

Section – I

MATHEMATICS

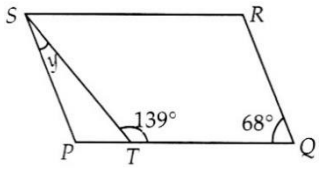
1. There are three poles, A, B and C. The height of pole C is $\frac{2}{3}$ of pole B, the height of pole B is $\frac{4}{3}$ of the pole A. Find the height of pole C, if the height of the pole A is $\frac{97}{3}$ m.

   (a) $15\frac{10}{63}$m (b) $3\frac{17}{27}$m (c) $28\frac{20}{27}$m (d) $4\frac{20}{63}$m

2. Three-fourths of a number is 60 more than its one-third. The number is

   (a) 108 (b) 84 (c) 144 (d) 116

3. If PQRS is a parallelogram, then y equals



   (a) 27° (b) 61° (c) 41° (d) 28°

4. If $a + b = 11$ and $ab = 30$, then find the value of $(a^2 + b^2)$.

   (a) 61 (b) 21 (c) 24 (d) 81

5. Number of seconds in a non-leap year expressed in scientific notation is

   (a) 3.1536×10^{8} (b) 3.1536×10^{6} (c) 3.1536×10^{7} (d) 3.1536×10^{-7}

6. A rational number between $\frac{1}{4}$ and $\frac{1}{3}$ is

   (a) $\frac{7}{24}$ (b) 0.29 (c) $\frac{13}{48}$ (d) All off these

7. Which of the following statements is TRUE?

   (a) $\frac{5}{7}<\frac{7}{9}<\frac{9}{11}<\frac{11}{13}$ (b) $\frac{11}{13}<\frac{9}{11}<\frac{7}{9}<\frac{5}{7}$ (c) $\frac{5}{7}<\frac{11}{13}<\frac{7}{9}<\frac{9}{11}$ (d) $\frac{5}{7}<\frac{9}{11}<\frac{11}{13}<\frac{7}{9}$

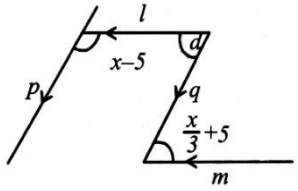
8. The root of equation $\frac{4}{2z-3}=\frac{5}{3z-2}$ is

   (a) – 7/2 (b) 7/2 (c) 3/2 (d) – 3/2

9. The sum of two numbers is 45 and their ratio is 7 : 8 then one of the numbers is

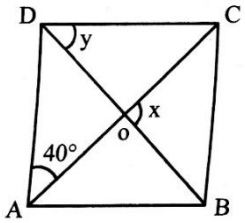
   (a) 26 (b) 24 (c) 25 (d) 20

10. In the given figure lines p and q are parallel. Then the value of x is so that lines l and m be parallel.



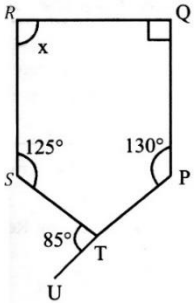
   (a) 185° (b) 125° (c) 135° (d) 155°

11. In the diagram, ABCD is a rhombus. The value of $x - y$ is:



(a) 50° (b) 40° (c) 30° (d) 20°

12. In the figure given below, PTU is a straight line.



What is the value of x?

(a) 100° (b) 110° (c) 120° (d) 130°

13. The expanded form of $(x + y)^2$ is a _____

(a) monomial (b) binomial (c) trinomial (d) cubic

14. Simplify: $(0.8\,m + 1.1\,n)(0.8\,m - 1.1\,n)$

(a) $0.64m^2 + 1.12n^2$ (b) $0.64m^2 + 1.21n^2$ (c) $0.64m^2 - 1.21n^2$ (d) $0.64m^2 - 11.2n^2$

15. If $xy = 1$, then $\frac{1}{1+x^{-1}} + \frac{1}{1+y^{-1}} =$

(a) 1 (b) xy (c) $\frac{1}{xy}$ (d) None of these

16. The solution of $3^{3x-5} = \frac{1}{9^x}$ is

(a) 1 (b) 3 (c) 9^x (d) 3^2

17. One fruit salad recipe requires $\frac{1}{2}$ cup of sugar. Another recipe for the same fruit salad requires 2 tablespoons of square. If 1 tablespoon is equivalent to $\frac{1}{16}$ cup, how much more sugar does the first recipe require?

(a) $\frac{1}{2}$ cup (b) $\frac{1}{8}$ cup (c) $\frac{5}{8}$ cup (d) $\frac{3}{8}$ cup

18. The length of a rectangle exceeds its breadth by 4 cm. If length and breadth are each increased by 3 cm. The area of the new rectangle will be 81 cm^2 more than that of the given rectangle. Then the length and breadth of the given rectangle is _____

(a) 14 cm, 10 cm (b) 10 cm, 6 cm (c) 16 cm, 12 cm (d) 18 cm, 14 cm

19. If $x+\frac{1}{x}=2$ then $x^3-\frac{1}{x^3}=?$

(a) 8 (b) 6 (c) 4 (d) 0

20. If $2^{x-1}+2^{x+1}=320$, then the value of x is

(a) 6 (b) 8 (c) 5 (d) 7

Section – II

PHYSICS

21. The pressure which is exerted by the air around us is known as

(a) force (b) atmospheric pressure

(c) muscular force (d) friction

22. When two forces act in opposite directions, then the magnitude of net force acting is the

(a) sum of two forces (b) difference between the magnitudes of the two forces

(c) both of these (d) none of these

23. Frictional force acts in which direction?

(a) On any direction (b) Along the direction of motion

(c) Perpendicular to the direction of motion (d) Opposite to the direction of motion

24. A force of 40 N acts over an area of $8m^2$, find the value of pressure.

(a) 5 Nm^{-2} (b) 50 Nm^{-2} (c) 8 Nm^{-2} (d) 80 Nm^{-2}

25. A force acting on an object of mass 500g changes its speed from 2 ms^{-1} to 0.2 ms^{-1}. The change in momentum is

(a) Increase by 0.90 Ns (b) decrease by 0.90

(c) increase by 90gcm/s (d) decrease by 90 g cm/s

26. Which of the following statements is correct about rolling and sliding friction?

(a) Rolling friction is greater than sliding friction

(b) Rolling friction is lesser than sliding friction

(c) Rolling and sliding frictions acting on a body are equal

(d) None of these

27. What can be done to reduce the force of friction on an object?

(a) Lubricate the surface

(b) Streamline the body shape

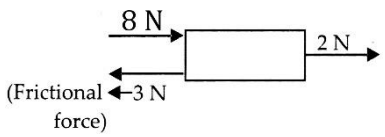
(c) Reduce the surface area in contact of two bodies

(d) All of these

28. When the applied force is doubled, the object is still at rest, the static friction becomes

(a) doubled (b) halved (c) quadrupled (d) zero

29. Find the net force acting on an object whose mass is 2 kg, as shown in the figure.



(a) 7 N (b) 8 N (c) 6 N (d) 5 N

30. A rocket driven sled is moving at a constant speed against a frictional force of 25000 N when the thrust of the engine is 30,000 N. Calculate the magnitude of drag force acting on the rocket.
(a) 15000 N (b) 10,000 N (c) 5000 N (d) 45000 N

31. While walking on ice one should take small steps to avoid slipping. This is because smaller steps ensure
(a) Large friction (b) Small friction (c) Small normal force (d) None of these

32. A toy car released with the same initial speed will travel farthest on
(a) muddy surface (b) polished marble surface
(c) cemented surface (d) brick surface

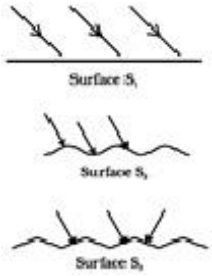
33. A coin flicked across a table will stop, because
(a) it is heavy (b) no force is acting on it
(c) earth attracts the coin (d) table exerts a frictional force

34. A ray of light strikes the surface of mirror at an angle of 30^0 with the mirror. The angle of reflection is:
(a) 30^0 (b) 60^0 (c) 45^0 (d) none.

35. The splitting of light into its component colours is called
(a) refraction (b)spectrum (c) dispersion (d) diffraction

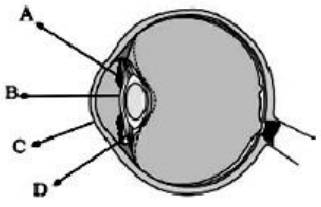
36. Which of the following is not an example of muscular force?
(a) A porter carrying a load on a wheel-barrow (b) A child riding a bicycle
(c) An apple falling from a tree (d) A man pushing a cart

37. Light is falling on surface S1, S2, S3 as shown in Fig



Surfaces on which the angle of incidence is equal to the angle of reflection is/are
(a) S1 only (b) S1 and S2 only (c) S2 and S3 (d) all the three surfaces

38. In the figure of the human eye, the cornea is represented by the letter



(a) A (b) B (c) C (d) D

39. Refractive index of diamond with respect to vacuum is 2.5, and then the velocity of light in diamond is.
(a) 25×10^8 m/s (b)2.5×10^8 m/s (c)1.2×10^8 m/s (d)2.1×10^8m/s

40. When the angle between two plane mirrors is 60°, how many images will be formed by the mirrors?
(a) 10 (b) 12 (c) 5 (d) 8

Section – III

CHEMISTRY

41. The correct order of metals in the activity series is
    (a) Cu > Zn > Mg > Ca (b) Ca > Zn > Cu > Mg
    (c) Zn > Mg > Cu > Ca (d) Ca > Mg > Zn > Cu
42. Which of the following metals has no reaction even with steam?
    (a) Sodium (b) Calcium (c) Iron (d) Silver
43. Antimony and Arsenic can be classified as
    (a) Metals (b) Non-metals (c) Metalloids (d) Any one of these
44. When CaO (calcium oxide) is dissolved in water, $Ca(OH)_2$ (calcium hydroxide) is obtained. A red litmus paper dipped in this solution turns_____, this shows that the solution is _____ in nature.
    (a) blue, acidic (b) red, acidic (c) blue, basic (d) red, basic
45. Which of the following statements is false?
    (a) Metals are good conductors of heat and electricity
    (b) Gold, silver and Zinc are most malleable metals
    (c) Mercury is the only liquid metal
    (d) Bromine is the only liquid non-metal
46. Which of the following statement regarding non-metals is true?
    (a) Non-metals are of two types only solids and gases
    (b) Non-metals reacts with oxygen to form basic oxides generally
    (c) Non-metals are mostly non-lustrous with dull appearance.
    (d) Non-metals replace hydrogen from acids
47. Gasoline is obtained from crude petroleum oil by
    (a) fractional distillation (b) vacuum distillation
    (c) steam distillation (d) pyrolysis
48. The side of the matchbox has a rubbing surface where we strike the match. Which of the following statement is false regarding this
    (a) The rubbing surface has powdered glass and red phosphorous
    (b) when struck red phosphorous converts to shite phosphorous
    (c) White phosphorous is present in the rubbing surface
    (d) The glass powder in the rubbing surface provides friction
49. Water gas is ____
    (a) $CO + CO_2$ (b) $CO + N_2$ (c) $CO + H_2$ (d) $CO + N_2 + H_2$
50. Select the true statement
    (a) the innermost zone of the flame is hottest.
    (b) luminous part of the flame, is hottest due to complete combustion
    (c) Outermost zone of the flame, is hottest due to partial combustion
    (d) Outermost part of flame is hottest, due to complete combustion

51. Which of the following is example of spontaneous combustion?

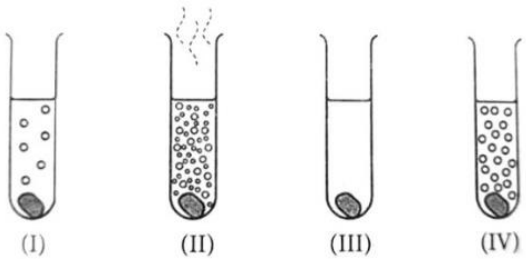
(a) Burning of match stick (b) Combustion of fuel by motor vehicles

(c) Lightning of kerosene lamp (d) Combustion of coal dust in coal mines

52. Select the fuel with highest calorific value?

(a) LPG (b) Kerosene oil (c) Wood (d) Hydrogen gas

53. Pieces of copper, lead, aluminium and zinc are added to dilute hydrochloric acid. Look at the observations keenly. The metal present in test tube (iii) reacts with which of the following.



(a) dil. Hydrochloric acid (b) H_2O (steam)

(c) aqueous solution of silver nitrate (d) aqueous solution of zinc sulphate

54. Coal is a fossil fuel and it cannot be prepared in a laboratory or industry because the formation of coal

(i) is a very slow process

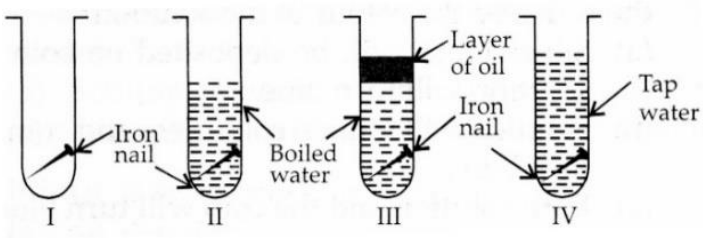
(ii) needs very low pressure and low temperature

(iii) needs very high pressure and high temperature

(iv) causes air pollution

(a) (i) and (ii) (b) (ii) and (iv) (c) (i) and (iii) (d) (iii) and (iv)

55. In which of the following test tubes, the rusting of iron nails will take place?



(a) II and III (b) I , II and IV (c) I, II and III (d) I, III and IV

56. A highly reactive element X which is stored under kerosene and burns explosively in presence of air and water and an another highly reactive element Y, which is stored under water and burns in presence of air are taken in consideration. If both X and Y reacts with oxygen and then treated with water.

What is their influence on litmus?

(a) both turns blue litmus to red

(b) both turns red litmus to blue

(c) product of X turns red litmus blue and product of Y turns blue litmus to red

(d) product of X turns blue litmus red and product of Y turns red litmus to blue

57. Study the below table and choose the appropriate option.

Element	Solid state	Malleability	Conduction of electricity
P	✓	×	×
Q	✓	×	✓
R	✓	×	✓
S	×	×	×

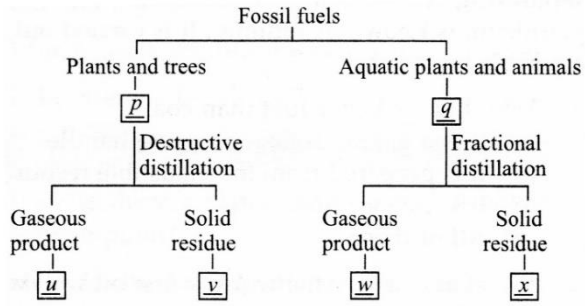
	P	Q	R	S
(a)	Iodine	Potassium	Sodium	Mercury
(b)	Iodine	Sodium	Graphite	Bromine
(c)	Sodium	Mercury	Graphite	Iodine
(d)	Graphite	Aluminium	Iron	Bromine

58. The layer containing petroleum and gas is _____.

(a) above that of water (b) below water

(c) between water and sand (d) below sand

59. Fill in the blanks left in the classification of the fossil fuels.



	p	*q*	*u*	*v*	*w*	*x*
(a)	Petroleum	Coal	Petroleum	Bitumen	Coal gas	Coke
(b)	Coal	Petroleum	Coal gas	Coke	Petroleum gas	Bitumen
(c)	Coal	Petroleum	Coal gas	Charcoal	Gasoline	Coal tar
(d)	Petroleum	Coal	Gasoline	Bitumen	Natural gas	Coke

60. Which of these fuels can produce the maximum heat?

Fuel	Calorific value (KJ/kg)	Mass of fuel given (kg)
A	8000	5
B	45000	2
C	60000	1.5
D	10000	4

(a) A, B (b) A, D

(c) B, C (d) B, D

Section – IV

Biology

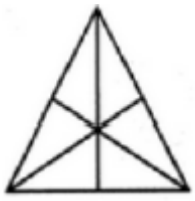
61. Virus behaves as microorganism at
    (a) Inside the cell of the host (b) Outside the cell of the host
    (c) Inside and outside of the host (d) It is not a microorganism
62. A helpful virus is called
    (a) Phage Virus (b) Bacterium
    (c) Vector (d) The virus never helps us
63. Tiny black rounded structure found on spoiled bread pieces are
    (a) Bacteria (b) Fungi (c) Virus (d) Protozoa
64. Which microorganism is used in the bakery industry?
    (a) Yeast (b) Rhizobium (c) Lactobacillus (d) All of these
65. Which Microorganism used to make antibiotics
    (a) Rhizobium (b) Penicillium (c) Aspergillus (d) All of these
66. The cell formed after fertilisation is called
    (a) Foetus (b) Zygote (c) Embryo (d) None of these
67. Foetus is the
    (a) Well developed embryo (b) Developing embryo
    (c) A zygote (d) Male gamete
68. Cloning is a mode of
    (a) Sexual production (b) Asexual production
    (c) Both (a) and (b) (d) None of these
69. How many modes of reproduction are there in animals?
    (a) One type (b) Two types (c) Three types (d) Four types
70. In which of the following organisms does metamorphosis take place?
    (a) Silkworm (b) Frogs (c) Butterfly (d) All of these
71. If you were a farmer, which of the following methods would you use to separate good quality and viable grains from a heap of grains after harvest?
    (a) Checking the weight of grains (b) Checking grains under sunlight for pores
    (c) Immersing the grains in water (d) Sowing seeds and waiting for germination
72. Which of the following is not a kharif crop?
    (a) Paddy (b) Maize (c) Groundnut (d) Peas
73. Which of the following is INCORRECT?
    (a) Freshly harvested grains must be dried before storing
    (b) Rhizobium present in root nodules of leguminous plants to fix nitrogen
    (c) All crop plants need transplantation
    (d) None of the above

74. Which of the following organic manure is considered better than fertilizers, because
    (a) It enhances the water holding capacity of the soil
    (b) It makes the soil porous
    (c) It improves the texture of the soil
    (d) All the above
75. Which of the following nutrients replenishes the soil after growing leguminous plants?
    (a) Nitrogen (b) Oxygen (c) Phosphorus (d) Potassium
76. The number of chromosomes present in human cell
    (a) 22 pairs (b) 23 pairs (c) 24 pairs (d) 26 pairs
77. The male hormone is _____
    (a) Estragon (b) Progesterone (c) Testosterone (d) All of these
78. The unfertilised egg always has _____ chromosome.
    (a) X (b) Y (c) XY (d) XX
79. Reproductive phase in women continues for how many decades?
    (a) One (b) Two (c) Three (d) Four
80. Which of the following glands secretes oil?
    (a) Thyroid gland (b) Pituitary gland (c) Sebaceous gland (d) Endocrine gland

Section – V

Aptitude

81. In certain code 'FROZEN' is written as 'OFAPSG'. Then how would 'MOLTEN' be written in that code?
    (a) OFPOMN (b) OFSMPN (c) OFUMPN (d) OFUNPM
82. Find the number of triangles in the given figure.



    (a) 16 (b) 13 (c) 9 (d) 7
83. Find the missing number 1, 8, 27, 64, 125, 216, ?
    (a) 354 (b) 343 (c) 392 (d) 245
84. Find the missing number 15, 31, 63, 127, 255, ?
    (a) 513 (b) 511 (c) 517 (d) 523
85. A two-digit number is such that the product of the digits is 8. When 18 is added to that number, then the digits are reversed. The number is ____.
    (a) 18 (b) 24 (c) 42 (d) 81
86. In a certain code 'ROAR' is written as 'URDU'. How is 'URDU' written in that code?
    (a) V X D Q (b) X U G X (c) R O A R (d) V S O V

87. Identify the figure that completes the pattern?

(1)  (2)  (3)  (4) 

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

88. One evening, before sunset, Rekha and Hema were talking to each other face to face. If Hema's shadow was exactly to the right of Hema. In which direction was Rekha facing?

(a) North (b) South (c) East (d) West

89. If × means ÷, − means ×, ÷ means + and + means – then $(3 - 15 \div 19) \times 8 + 6 = ?$

(a) – 1 (b) 2 (c) 4 (d) 8

90. Identify the figure that completes the pattern.

(1)  (2)  (3)  (4) 

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

91. Pick out the wrong the number in the sequence 125, 127, 130, 135, 142, 153, 165

(a) 130 (b) 142 (c) 153 (d) 165

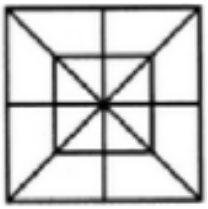
92. Pick out the wrong number in the sequence 6, 13, 18, 25, 30, 37, 40

(a) 25 (b) 30 (c) 37 (d) 40

93. The average of 20 numbers is zero. Of them, at the most, how many may be greater than zero?

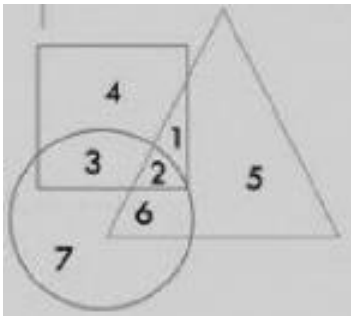
(a) 0 (b) 1 (c) 10 (d) 19

94. Find the number of squares in the given figure.



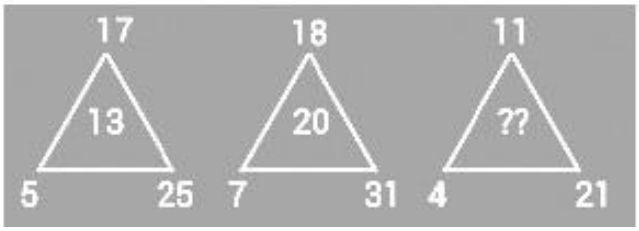
(a) 10 (b) 8 (c) 9 (d) 12

95. In the given figure, the circle represents rural population, square represents educated youth and triangle represents employed people. Identify the letter showing rural educated youth who are not employed?



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

96. Find the missing number



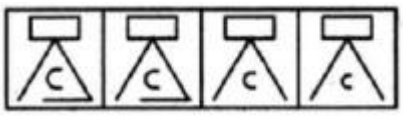
(a) 14 (b) 16 (c) 22 (d) 12

97. If day before yesterday was Thursday, then what day will be four days after tomorrow?

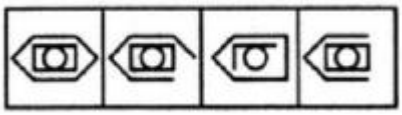
(a) Saturday (b) Thursday (c) Sunday (d) Tuesday

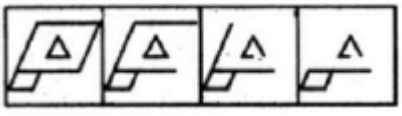
98. Choose the set of figures which follow the given rule.

RULE: Closed figure losing their sides and open figures gaining their sides.

(a) 

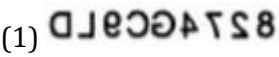
(b) 

(c) 

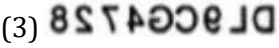
(d) 

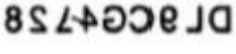
99. Choose the alternatives which is closely resembles the mirror images of the given combination.

DL9CG4728

(1) 

(2) 

(3) 

(4) 

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

100. Two numbers are in the ratio 5 : 4. Aman subtracts 12 from each, then number is in the ratio of 4 : 3. Find the smaller number.

(a) 48 (b) 60 (c) 54 (d) 50

Keys

Q. No.	Key	Q. No.	Key	Q. No.	Key	Q. No.	Key	Q. No.	Key
1	C	21	B	41	D	61	A	81	C
2	C	22	B	42	D	62	C	82	A
3	A	23	D	43	C	63	B	83	B
4	A	24	A	44	C	64	A	84	B
5	C	25	B	45	B	65	D	85	B
6	D	26	B	46	C	66	B	86	B
7	A	27	D	47	A	67	A	87	A
8	A	28	A	48	C	68	B	88	B
9	B	29	A	49	C	69	B	89	B
10	C	30	C	50	D	70	D	90	D
11	B	31	A	51	D	71	C	91	D
12	A	32	B	52	D	72	D	92	D
13	C	33	D	53	C	73	D	93	D
14	C	34	A	54	C	74	D	94	A
15	A	35	C	55	B	75	A	95	D
16	A	36	C	56	C	76	B	96	A
17	D	37	D	57	B	77	C	97	B
18	A	38	C	58	D	78	A	98	B
19	D	39	C	59	B	79	D	99	C
20	D	40	C	60	C	80	C	100	A

RISE SCHOLARSHIP – ADMISSION TEST – SAMPLE PAPER

CLASS - 8

Rani Institute of Scholastic Education

Section – I

MATHEMATICS

1. On subtracting the reciprocal of $\frac{5}{7}$ from the additive inverse of $\left(\frac{-3}{4}\right)$ we get

   (a) $\frac{11}{20}$ (b) $\frac{13}{20}$

   (c) $\frac{-11}{20}$ (d) $\frac{-13}{20}$

2. If $\sqrt{x} + \sqrt{49} = 8.2$, then the value of x is _____.

   (a) 1.20 (b) 1.40

   (c) 1.44 (d) 1.89

3. The smallest number by which 2560 must be multiplied so that the product is a perfect cube is _____.

   (a) 25. (b) 15.

   (c) 10. (d) 5.

4. If the ratio of two sides of a parallelogram is 4: 5 and its perimeter is 90 cm, its sides are _____.

   (a) 5 cm and 18 cm (b) 20 cm and 25 cm

   (c) 25 cm and 20 cm (d) 40 cm and 50 cm

5. The solution of the equation $\frac{6x+7}{3x+2} = \frac{4x+5}{2x+3}$ is ____

   (a) $-\frac{11}{9}$ (b) $-\frac{13}{4}$

   (c) $-\frac{9}{14}$ (d) $-\frac{2}{13}$

6. The value of $\frac{1}{2} \div \left(\frac{1}{3} \div \frac{2}{5}\right)$ is ____

   (a) $-\frac{5}{3}$ (b) $-\frac{3}{5}$

   (c) $-\frac{5}{12}$ (d) $\frac{3}{5}$

7. 25 times the square of 125 is same as _____

   (a) square of 625 (b) 5 times the square of 25

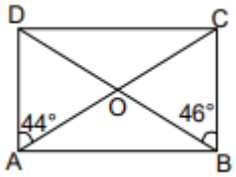
   (c) 125 times the square of 25 (d) 25 times the square of 5

8. Cube of an even number _____

   (a) is always even (b) is always odd

   (c) is sometimes even and sometimes odd (d) always end with 0

9. In parallelogram ABCD, $\angle DAC = 44°$ and $\angle CBD = 46°$ then $\angle AOB =$



(a) 80° (b) 90°

(c) 60° (d) 45°

10. What is the value of $3(x^2 - 4x)$ when $x = 4$?

(a) 5 (b) 0

(c) 30 (d) 55

Section – II

PHYSICS

11. Pressure is measured in _____

(a) Pa (b) N

(c) Nm^{-2} (d) both (a) and (c)

12. Which of the following is NOT a correct statement?

(a) A force can change the state of rest or motion of a body

(b) A force can change the direction of a body

(c) A force can change the chemical properties of a body

(d) A force can change the dimension of a body

13. The impact which a body can produce due to the combined effect of mass and velocity is called –

(a) momentum (b) force

(c) moment of force (d) pressure

14. Equal and opposite forces acting on a body which do not change its state of rest or motion are called –

(a) null forces (b) unlike parallel force

(c) balanced force (d) all to these

15. Pressure of water ____

(a) increases with depth (b) decreases with depth

(c) remains same with depth (d) none of these

16. A batsman hits a cricket ball which then rolls on a level ground. After covering a short distance, the ball comes to rest. The ball slows down to stop because ___

(a) The batsman did not hit the ball hard enough

(b) velocity is proportional to the force exerted on the ball

(c) there is a force on the ball opposing the motion

(d) there is no unbalanced force on the ball, so the ball would come to rest

17. Equal forces $\vec{F}$ act on isolated bodies A and B as shown. The mass of B is three times that of A. The magnitude of the acceleration of A is _____

(a) three times that of B
(b) 1/3 that of B
(c) nine time that B
(d) 1/9 that of B

18. Friction can be increased by _____
(a) making the surface smooth
(b) lubricating the surface
(c) using ball bearing
(d) making the surface rough

19. It is difficult to walk on ice because ___
(a) Pressure is high
(b) pressure is low
(c) friction is high
(d) friction is low

20. Friction is _____
(a) always a disadvantage
(b) always an advantage
(c) sometimes a disadvantage and sometimes an advantage
(d) neither a disadvantage nor an advantage

Section – III

CHEMISTRY

21. Metal A – Highly malleable and ductile, reacts easily with air, water and acids.
Metal B – Highly malleable and ductile, non-reactive
Metal C – Malleable and ductile, forms very strong alloys
Metal D – Has a melting point below room temperature
Which of the following statement is false?
(a) Metal A can be used to make electrical wires
(b) Metal B can be used to make jewellery
(c) Metal C can be used in constructions
(d) Metal D can be used in thermometers

22. A brown-colored metal on exposure to air reacts with components of air to form a green coloured compound. The composition of this substance is _____
(a) $Cu(OH)_2$
(b) $CuO.\ CuCO_3$
(c) $Cu(OH)_2.CuCO_3$
(d) $CuO.Cu(OH)_2.CuCO_3$

23. Which of these was used earlier in railway engines to produce steam from water?
(a) Petroleum
(b) Diesel
(c) Kerosene
(d) Coal

24. The composition of the chemicals on the head of the match stick is _____
(a) Antimony disulphide + Potassium Chlorate + Red Phosphorous
(b) Antinomy trisulphide + Potassium chlorate + Red Phosphorous
(c) Antinomy trisulphide + Potassium chlorate + White Phosphorous
(d) Antimony disulphide + Potassium Chlorate + White Phosphorous

25. Salt of metal A, ASO_4 is blue. Salt of metal B, BSO_4 is green. When B is added to ASO_4, the color changes to green. This shows that _____

    (a) A is more reactive than B
    (b) B is more reactive than A
    (c) Both are equally reactive
    (d) Can't be predicted

26. A magician wanted to perform a show. He got out a powder from inside water which immediately caught fire on exposure to air. This substance must be ___

    (a) Sulphur
    (b) Phosphorous
    (c) Carbon
    (d) Mercury

27. Which of these can be used to make thin long wires?

    (a) Copper
    (b) Mercury
    (c) Sulphur
    (d) Sodium

28. Basu was cooking potatoes using LPG while Veena was using CNG. Basu finished cooking faster than Veena. Which could be the correct calorific value of LPG and CNG respectively?

    (a) 10,000 and 8000
    (b) 8000 and 10,000
    (c) both 10,000
    (d) both 8000

29. Increased levels of carbon dioxide causes global warming because _____.

    (a) carbon dioxide is a hot gas
    (b) carbon dioxide can trap the heat waves in the atmosphere
    (c) carbon dioxide reacts with other gases and liberates heat
    (d) none of the above

30. Water can be used to extinguish fire because _____.

    (a) It decreases the ignition temperature of the burning substance
    (b) It converts to water vapour and surrounds the burning substance
    (c) Both (a) and (b)
    (d) It absorbs the fire and extinguishes it

Section – IV
BIOLOGY

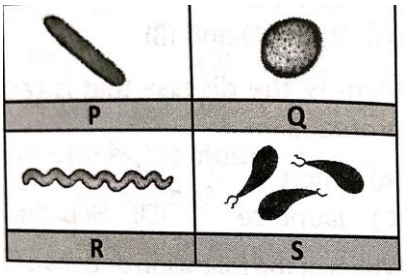
31. Which part within the uterus prevents the mixing of the blood of the foetus with that of the mother?

    (a) Umbilical cord
    (b) Uterus wall
    (c) Placenta
    (d) Water sac

32. AIDS is a deadly disease which is caused by

    (a) a protozoan
    (b) a fungus
    (c) a bacterium
    (d) a virus

33. What causes the dough to rise when yeast is added to it?
    (a) An increase in temperature
    (b) An increase in the amount of substance
    (c) An increase in the amount of released water by yeast cells
    (d) The release of carbon dioxide gas
34. Which of the following bacteria causes Cholera?
    (a) *Streptococcus* (b) *Clostridium*
    (c) *Pasteurella* (d) *Vibrio*
35. Which of these is the correct sequence of steps to develop a new plant variety?
    P – Evaluation
    Q – Multiplication of improved seeds
    R – Selection
    S – Distribution of improved seeds
    T – Development of gene variation
    (a) T, R, P, Q, S (b) R, T, P, Q, S
    (c) S, Q, P, R, T (d) P, Q, R, T, S
36. Which of the following methods of cultivation causes salinization of soil?
    (a) Transplantation (b) Crop rotation
    (c) Excessive irrigation (d) Broadcasting
37. Observe the given figure and identify P, Q, R and S.



    (a) P – Coccus, Q – Bacillus, R – Vibrio, S – Spirillum
    (b) P –Bacillus, Q – Coccus, R –Spirillum, S – Vibrio
    (c) P –Bacillus, Q – Vibrio, R –Coccus, S – Spirillum
    (d) P –Bacillus, Q – Spirillum, R –Vibrio, S –Coccus
38. Which of the following statements are correct about menstrual cycle?
    (a) A girl who has reached puberty will menstruate throughout her life
    (b) Menstruation occurs every 28 days
    (c) During every menstrual cycle, one mature ovum will be released by the ovary
    (d) Both (b) and (c)
39. Which of the following is an oviparous mammal?
    (a) Echidna (b) Kangaroo (c) Rabbit (d) Bat

40. Which of the following processes refers to the casting away of the skin by a caterpillar to allow a larger caterpillar to emerge?

(a) Metamorphosis (b) Chrysalis

(c) Moulting (d) Development

Section – V

Aptitude

41. Find the missing number/letter.

65, 91, 143, 169?

(a) 231 (b) 241 (c) 221 (d) 233

42. Find the missing number/letter.

16, 48, 52, 260, 266, ?

(a) 1896 (b) 1826 (c) 1862 (d) 1962

43. Find the missing number/letter.

7, 15, 22, 37, 59, 96, ?

(a) 165 (b) 125 (c) 123 (d) 155

44. Find the missing number/letter.

– qr – rp – p q p – r – r p r p q

(a) p q r q q (b) q q q r r (c) q p r q p (d) p q q r r

45. Find the missing number/letter.

m m n – m m – n nn – m mm – n nn

(a) m n n m (b) n m m n (c) m mm n (d) m n m n

46. Find the missing number/letter.

a b c a – b c a a b – c a – b b c –

(a) c c a a (b) b b a a (c) a b a c (d) a b b a

47. Find the missing number/letter.

J2Z, K4X, I7V, ?, H16R, M22P

(a) I11T (b) L 11S

(c) L 12 T (d) L 11 T

48. Find the odd-number.

(a) 1345 (b) 5675

(c) 3675 (d) 4578

49. Find the odd-number.

(a) 1234 (b) 5678

(c) 4567 (d) 4272

50. Find the odd-number.

(a) 216 (b) 343

(c) 960 (d) 125

RISE SCHOLARSHIP – ADMISSION TEST – SAMPLE PAPER

CLASS - 8

ANSWER KEY:

1. D	2. C	3. A	4. B	5. A	6. D	7. A	8. A	9. B	10. B
11. D	12. C	13. A	14. C	15. A	16. C	17. A	18. D	19. D	20. C
21. A	22. C	23. D	24. B	25. B	26. B	27. A	28. A	29. B	30. C
31. C	32. D	33. D	34. A	35. A	36. C	37. B	38. D	39. A	40. C
41. C	42. C	43. D	44. A	45. B	46. C	47. D	48. D	49. D	50. C