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Academic Session: 2023-24

SAMPLE TEST PAPER

ResoNET-2023

(Resonance National Entrance Test for Admission in PCCP Classroom Contact Programmes-PCCPs)

FOR STUDENTS WINNER IN 2023-2024
(PRESENTLY STUDYING IN CLASS - IX IN 2022-2023)

COURSE NAME : WINNER **COURSE CODE : JTT**

Duration: 1½ Hours | Max. Marks: 210

Name : _____ **Application Form Number :** _____

Please read the next & last page of this booklet for the instructions.

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IMPORTANT INSTRUCTIONS

GENERAL INSTRUCTIONS

1. This booklet is your Question Paper.
2. Blank papers, clip boards, log tables, slide rule, calculators, mobile or any other electronic gadgets in any form are not allowed to be used.
3. Write your **Name** & **Application Form Number** in the space provided in the first page of this booklet.
4. No rough sheets will be provided by the invigilators. All the rough work is to be done in the blank space provided in the question paper.
5. No query related to question paper of any type is to be put to the invigilator.

INSTRUCTIONS FOR OPTICAL RESPONSE SHEET (ORS)

- Darken the appropriate bubbles on the original by applying sufficient pressure.
- The original is machine-gradable and will be collected by the invigilator at the end of the examination.
- Do not tamper with or mutilate the ORS.
- Write your name, Application form number and the name of the examination centre and sign with pen in the space provided for this purpose on the original. **Do not write any of these details anywhere else**. Darken the appropriate bubble under each digit of your roll number.
- Before answering the paper, fill up the required details in the blank space provided in the Objective Response Sheet (ORS).
- Do not forget to mention your paper code and **Application Form Number** neatly and clearly in the blank space provided in the Objective Response Sheet (ORS) / Answer Sheet.
- Use a **BLACK BALL POINT** to darken the bubbles in the upper sheet.
- Darken the bubble **COMPLETELY.**
- Darken the bubble **ONLY** if you are sure of the answer.
- The correct way of darkening a bubble is as shown here : ●
- There is **NO** way to erase or "un-darkened bubble.
- The marking scheme given at the beginning of each section gives details of how darkened and **not darkened** bubbles are evaluated.

Marks distribution of questions is as follows.

Reso NET 2023-24

S.No.	Subject	Nature of Questions	Marks to be awarded			
			No. of Questions	Correct	Wrong	Total
1 to 25	PART-I (Maths)	Single Choice Questions (SCQ)	25	3	0	75
26 to 35	PART-II (Physics)	Single Choice Questions (SCQ)	10	3	0	30
36 to 45	PART-III (Chemistry)	Single Choice Questions (SCQ)	10	3	0	30
46 to 55	PART-IV (Biology)	Single Choice Questions (SCQ)	10	3	0	30
56 to 70	PART-V (Mental Ability)	Single Choice Questions (SCQ)	15	3	0	45
		Total	**70**			**210**

Zero marks '0' If none of the options is chosen (i.e. the question is unanswered).

Syllabus of Class-IX_ Reso NET

Physics :

- Motion
- Force and newton's laws
- Gravitation

Chemistry :

- Matter in our surroundings
- Is matter around us pure

Biology :

- Fundamental unit of life
- Tissue
- Improvement in food resources

Mathematics :

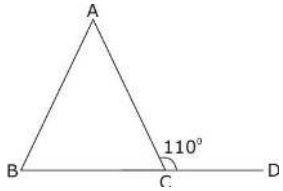
- Number system
- Polynomials
- Coordinate geometry
- Lines and angles
- Congruent triangles
- Linear equations in two variables

Mental Ability :

- Number-series
- Alphabet-series
- Missing term in figures
- Coding-eecoding
- Direction sense test
- Seating arrangement
- Puzzle test
- Syllogism
- Calendar test
- Dice test
- Venn Diagram

1. Which of the following is incorrect?
(A) Euclid fifth postulate imply the existence of parallel lines.
(B) Two points are always collinear.
(C) Two lines perpendicular to the same line are parallel to each other.
(D) None of these.

2. In the given figure AB = AC and $\angle ACD = 110°$, then the value of $\angle A$ is



(A) 20°. (B) 30°.
(C) 40°. (D) 50°.

3. Choose the rational number which does not lie between rational numbers $-\frac{2}{5}$ and $-\frac{1}{5}$

(A) $-\frac{1}{4}$ (B) $-\frac{3}{10}$

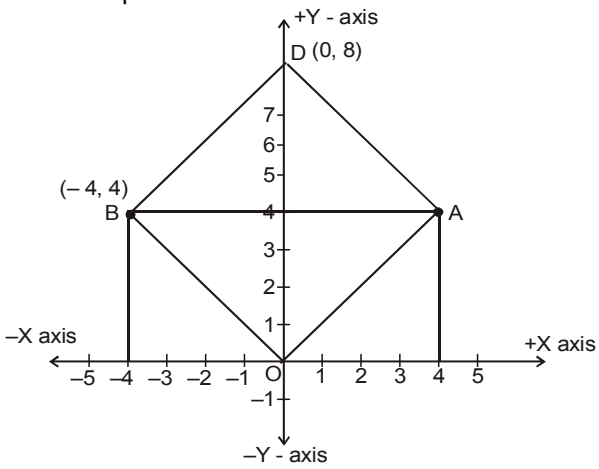
(C) $\frac{3}{10}$ (D) $-\frac{7}{20}$

4. x and x + y are the square of two consecutive natural number. What is the square of the next natural number ?
(A) x + 2y (B) x + 2y + 2
(C) x + 3y (D) $x + y^2$

5. If $\frac{3x+6}{8} - \frac{11x-8}{24} + \frac{x}{3} = \frac{3x}{4} - \frac{x+7}{24}$, then the value of x is
(A) x = 3 (B) x = 2
(C) x = 1 (D) x = 4

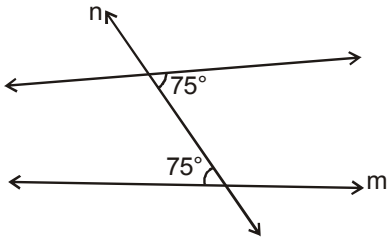
6. If $8^{x-1} = 2^{x+3}$, value of x will be
(A) 2 (B) 4
(C) 1 (D) 3

7. If AOBD is a square then find the coordinates of point A.



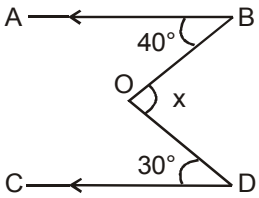
(A) $(4,4\sqrt{2})$ (B) (4, 4)
(C) $(4\sqrt{2},4)$ (D) None of these

8. Given two lines ℓ and m, these lines :



(A) Will intersect on left side of line n
(B) Will intersect on right side of line n
(C) are parallel
(D) None of these

9. In the given figure, AB || CD, $\angle ABO = 40°$ and $\angle CDO = 30°$. If $\angle DOB = x°$, then the value of x is :

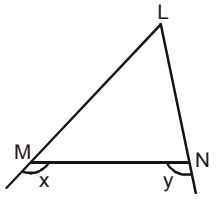


(A) 35 (B) 110
(C) 70 (D) 140

(Space For Rough Work)

10. A man born in the first half of the 19th century was x years old in the year x^2. He was born in:
(A) 1849 (B) 1806
(C) 1812 (D) 1825

11. In the given figure, x > y. Hence



(A) LM = LN
(B) LM < LN
(C) LM > LN
(D) None of these

12. If 'm' and 'n' are natural numbers such that $\sqrt{7+\sqrt{48}} = \sqrt{m} + \sqrt{n}$ then $m^2 + n^2$ equals :
(A) 25 (B) 37
(C) 29 (D) 41

13. If $N = \frac{\sqrt{\sqrt{5}+2}+\sqrt{\sqrt{5}-2}}{\sqrt{\sqrt{5}+1}} - \sqrt{3-2\sqrt{2}}$
then the value of N is :
(A) $2\sqrt{2}-1$ (B) 2
(C) 1 (D) $\sqrt{5}-\sqrt{2}$

14. Which is the greatest number amongst $2^{1/2}$, $3^{1/3}$, $8^{1/8}$ and $9^{1/9}$?
(A) $9^{1/9}$ (B) $8^{1/8}$
(C) $3^{1/3}$ (D) $2^{1/2}$

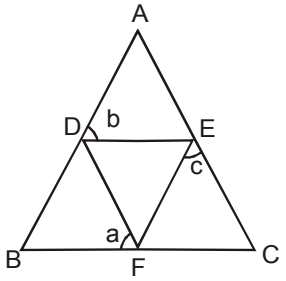
15. What is the remainder when the polynomial $p(x) = x^{200} - 2x^{199} + x^{50} - 2x^{49} + x^2 + x + 1$ is divided by (x – 1) (x – 2) ?
(A) 1 (B) 7
(C) 2x + 1 (D) 6x – 5

16. If $\frac{p}{a}+\frac{q}{b}+\frac{r}{c} = 1$ and $\frac{a}{p}+\frac{b}{q}+\frac{c}{r} = 0$ then the value of $\frac{p^2}{a^2}+\frac{q^2}{b^2}+\frac{r^2}{c^2}$ is :
(A) 0 (B) –11
(C) 9 (D) 1

17. If x,y are positive real numbers satisfying the system of equations $x^2 + y\sqrt{xy} = 336$, $y^2 + x\sqrt{xy} = 112$, then x + y equals
(A) $\sqrt{448}$ (B) $\sqrt{224}$
(C) 20 (D) 40

18. x and y are real numbers such that $7^x - 16y = 0$ and $4^x - 49y = 0$, then the value of (y – x) is
(A) $\frac{5}{2}$ (B) $\frac{19}{5}$
(C) $\frac{4115}{2013}$ (D) $\frac{1569}{784}$

19. In the adjoining figure AB = AC and DEF is an equilateral triangle . Then



(A) a + b + c = 180° (B) a + b = 2c
(C) $a = \frac{b+c}{2}$ (D) a + c = 2b

(Space For Rough Work)

20. The number of squares on a coordinate plane with one vertex at A(–2, 2) and at least one of the coordinate axes as axis of symmetry of the square is
(A) 3 (B) 5
(C) 6 (D) 7

21. How many number of lines does pass through two distinct points.
(A) 3 (B) 2
(C) 1 (D) 4

22. In Δ ADE, $\angle$ ADE = 140°. B and C are points on AD and AE respectively. A,B,C,D,E are all distinct. If AB = BC = CD = DE then $\angle$ EAD is equal to
(A) 10° (B) 20°
(C) 70° (D) None of these

23. Find the value of

$$\left(1-\frac{1}{2^2}\right)\left(1-\frac{1}{3^2}\right)\left(1-\frac{1}{4^2}\right).....\left(1-\frac{1}{2007^2}\right)$$

(A) $\frac{2008}{2007}$ (B) $\frac{1004}{2007}$

(C) $\frac{2007}{2008}$ (D) 1

24. The value of x which satisfy $\frac{6x+5}{4x+7}=\frac{3x+5}{2x+6}$ is :
(A) –1 (B) 2
(C) 1 (D) –2

25. One fourth of one third of one half of a number is 12, then number is :
(A) 284 (B) 286
(C) 290 (D) 288

26. The unit of change in momentum is :
(A) N × s (B) N/s

(C) N (D) $\frac{kg\,xs}{m}$

27. If a force is conservative :
(A) work is path independent
(B) it will be central
(C) potential energy remains constant
(D) none of these

28. A body goes from A to B with a velocity of 20 m/s and comes back from B to A with a velocity of 30 m/s. The average velocity of the body during the whole journey is :
(A) Zero (B) 24 m/s
(C) 25 m/s (D) None of these

29. The value of g on earth surface is 9.8 m/s^2, then the value of g at earth's centre in m/sec^2 is :
(A) 9.8 (B) 19.6
(C) 4.9 (D) zero

30. The weight of a boy on the surface of moon is 300 N. The weight of this boy on the surface of earth is :
(A) 300 N (B) 5 N
(C) 50 N (D) 1800 N

31. A body is thrown up with an initial velocity u and covers a maximum height of h, then h is equal to :
(A) $\frac{u^2}{2g}$ (B) $\frac{u}{2g}$
(C) 2 ug (D) None of these

32. The value of g on moon is 1 / 6 th of the value of g on earth . A man can jump 1.5 m high on the earth.He can jump on the moon upto a height of :
(A) 9 m (B) 7.5 m
(C) 6 m (D) 4.5 m

33. Weightlessness experienced while orbitting in a space ship is the result of :
(A) Inertia (B) Zero gravity
(C) Centre of gravity (D) Acceleration

(Space For Rough Work)

34. Two blocks, one of iron (i) and the other of wood (w) are dropped from a height at the same time. If the time taken by the blocks to reach the ground is T_i and T_w respectively, then :
(A) $T_i < T_w$ (B) $T_i = T_w$
(C) $T_i > T_w$ (D) $T_i = 1/2\ T_w$

35. When a space ship is at a distance of two earth's radius from the centre of the earth, the gravitational acceleration is :
(A) 19.6 ms^{-2} (B) 9.8 ms^{-2}
(C) 4.9 m/s^2 (D) 2.45 ms^{-2}

36. What happens to the volume of the aqueous solution when small amount of sugar is dissolved in it ?
(A) Volume increases
(B) Volume decreases
(C) Volume first increases then decreases.
(D) No change in volume.

37. Which of the following is not correct for gases ?
(A) Gases have definite mass.
(B) Gases have definite shape.
(C) Gases have definite volume.
(D) Both (B) and (C)

38. On changing which of the following, the states of matter will change ?
(A) Temperature (B) Pressure
(C) (A) & (B) both (D) None of these

39. Melting & freezing point of water -
(A) are same.
(B) have large difference between them.
(C) have close difference between them.
(D) None of these

40. During evaporation, particles of a liquid change into vapours only -
(A) from the surface.
(B) from the bulk.
(C) from both surface and bulk.
(D) neither from surface nor from bulk.

41. Rate of evaporation depends upon -
(A) temperature (B) surface area
(C) humidity (D) All of these

42. Air is regarded as a -
(A) compound (B) mixture
(C) element (D) electrolyte

43. Colloids which is not possible
(A) Gas in liquid (B) Liquid in liquid
(C) Solid in solid (D Gas in Gas

44. Which of the following provides an example of a true solution ?
(A) Blood (B) Milk
(C) Starch solution (D) Sugar solution

45. Which of the following will show Tyndall effect ?
(A) Starch solution
(B) Sodium chloride solution
(C) Copper sulphate solution
(D) Sugar solution

46. The endomembrane system of the cell includes
(A) mitochondria. (B) plastids.
(C) nucleus. (D) ER

47. The membrane bound structures of the golgi apparatus are called
(A) plastids. (B) vacuoles.
(C) cisternae. (D) ribosomes

48. The fluid content of the vacuoles is called
(A) water. (B) cell sap.
(C) cytoplasm. (D) nucleoplasm.

49. Chromosomes are made of:
(A) DNA only
(B) DNA and fats
(C) DNA and proteins
(D) DNA and carbohydrates

(Space For Rough Work)

50. Part of body which is not exclusively supplied with involuntary muscles
(A) muscular coats of blood vessels.
(B) muscles of limbs
(C) muscles of iris.
(D) muscles of urethra.

51. Mast cells secrete
(A) histidine. (B) histamine.
(C) antibodies. (D) troponin

52. Protein present in the matrix of cartilage is known as
(A) chondrin (B) chitin.
(C) cellulase. (D) casein.

53. Plants take up nitrogen in the form of
(A) free nitrogen.
(B) molecular nitrogen.
(C) amino acids.
(D) nitrates and nitrites.

54. The most common species of honey bee maintained for collecting honey and wax is
(A) *Apis dorasata.* (B) *Apis florae.*
(C) *Apis indica.* (D) *Apis mellifera*

55. The practice concerned with the improvement of animals is
(A) poultry.
(B) animal husbandry.
(C) bee keeping.
(D) fishery.

Direction : (56 to 59) Find the missing terms.

56. 7,19, 55, 163, _
(A) 387 (B) 329
(C) 527 (D) 487

57. 5, 3, 6, 2, 7, 1, ?
(A) 0 (B) 2
(C) 8 (D) 4

58. ZGL, XHN, VIQ, TJU, ?
(A) RKX (B) RKY
(C) RLZ (D) RKZ

59.

	4	2	
5	80	99	8
1	63	?	6
	7	7	

(A) 169 (B) 168
(C) 85 (D) 706

Direction : (60) Which sequence of letters when placed at the blanks one after the other will complete the given letter series ?

60. a – b a a – a a – – a b
(A) a a a a (B) b a a a
(C) b b a a (D) a b b a

61. If **MERCHANT** is **NDSBIZOS**, then **CANCER** is
(A) BZMBDQ (B) BBMBDQ
(C) DBODFS (D) DZOBFQ

62. **DRAMA** is coded as **37** and **STAGE** as **52**. How will you code **ACTOR** ?
(A) 56 (B) 50
(C) 57 (D) 67

63. If the alphabets were written in the reverse order, which letter will be the fifth letter to the left of the fourteenth letter from the left.
(A) R (B) I
(C) S (D) H

64. How many pairs of letters are there in the word, '**EXPERIENCED** 'which have as many letters between them in the word as in alphabet ?
(A) One (B) Three
(C) Four (D) More than four

65. Which interchange of signs will make the following equation true ?
12 – 3 × 2 ÷ 18 + 6 = 9
(A) ÷, – (B) ÷, +
(C) ×, – (D) +, –

(Space For Rough Work)

66. Pointing to a person, Rohit said to Neha, "His mother is the only daughter of your father. "How is Neha related to that person ?

(A) Aunt (B) Mother
(C) Daughter (D) Wife

Direction : (67) Read following information carefully and answer the questions given below it :

(i) A and B are good in Biology & Chemistry.
(ii) A & C are good in Biology & Physics.
(iii) C,D & E are good in Physics & History.
(iv) C & E are good in Physics & Mathematics.
(v) D & B are good in Chemistry & History.

67. Who is good in Physics, History & Mathematics but not in Biology ?

(A) D (B) C
(C) A (D) E

Direction : (68) Study the given information and answer the questions that following.

(i) P, Q, R, S T, U and V are sitting in a row facing East.
(ii) R is on the immediate right of S.
(iii) Q is at left extreme and has T as his immediate neighbour.
(iv) V is exactly between T and U.
(v) S is sitting third from the South end.

68. Who is sitting to the immediate right of T ?

(A) P (B) V
(C) S (D) U

69. In a queue of boys Sohan is **9th** from the back. Ramesh's place is **8th** from the front. Radhey is standing in between the two. What could be the minimum number of boys standing in the queue?

(A) 8 (B) 10
(C) 12 (D) 14

70. A man starts from his house and walks 3 km. towards South, then he turns left and walks 5 km. In which direction he is from his house ?

(A) South (B) East
(C) South East (D) North

ANSWER KEY

Ques.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Ans.	D	C	C	B	A	D	B	C	C	B	C	A	C	C	D
Ques.	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Ans.	D	C	D	C	B	C	A	B	C	D	A	A	A	D	D
Ques.	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
Ans.	A	A	B	B	D	D	D	C	A	A	D	B	D	D	A
Ques.	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Ans.	D	C	B	C	B	B	A	D	D	B	D	C	D	B	D
Ques.	61	62	63	64	65	66	67	68	69	70					
Ans.	D	C	A	D	B	B	D	B	B	C					