THE RADIANT ACADEMY
Igniting Young Minds
Udaipur

Code - 0

SAMPLE PAPER

Academic Session : 2026-27

Class : X

FOR STUDENTS MOVING IN CLASS (X) IN 2026-27

(PRESENTLY STUDYING IN CLASS-IX IN 2025-26)

Date : 2026-27 | Duration: 1.5 Hours | Max. Marks : 210

R-SAT

Radiant Scholarship cum Admission Test

Note : Make sure that you have filled your Class (Science + Mathematics) % , Mobile No., Medium of Study, Date of Birth, Category, Board of the School in Objective Response Sheet (ORS).

Candidate Name:

Application Form Number

The Radiant Academy

Corporate Office: 7-8, Samta Nagar, Hiran Magri, Sector-3, Udaipur (Rajasthan) | Mob.: +91-9001053989 | +91-9461172001

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Please read the instructions carefully. You are allotted 5 minutes specifically for this purpose.

Name of the Candidate:

Reg. Number :

1	9										

GENERAL INSTRUCTIONS IN EXAMINATION HALL

1. Question paper contains 70 questions of **Mathematics (1 to 25), Physics (26 to 35), Chemistry (36 to 45), Biology (46 to 55) & Mental Ability (56 to 70),** each question carry 3 mark.
2. Blank papers, clip boards, log tables, slide rule, calculators, mobile or any other electronic gadgets in any form is not allowed.
3. Write your Name and Roll No. in the space provided in the bottom of this booklet.
4. Before answering the paper, fill up the required details in the blank space provided in the answer sheet.
5. Do not forget to mention your roll number neatly and clearly in the blank space provided in the answer sheet.
6. There is no negative marks for wrong answer.
7. 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.
8. In case of any dispute, the answer filled in the OMR sheet available with the institute shall be final.

MARKING CRITERIA

No. of Questions	Type	Marks		
		Correct	Incorrect	Blank
1–70	Only one correct	Q. No. 1 to 70 (3 Mark each)	No negative marks	0

IMPORTANT

PROCEDURE OF FILLING UP THE ANSWERS IN OMR SHEET

Wrong Filling		Right Filling	
A B C D	Tick mark	A ● C D	Fully darken with HB Pencil
A B C D	Cross mark	A ● C D	Fully darken with HB Pencil
A ● C D	Half filled or semi dark	A ● C D	Fully darken with HB Pencil
○ B C D	Light filled	● B C D	Fully darken with HB Pencil

Best of Luck

1. MATHEMATICS

Straight Objective Type

This section contains 25 questions. Each question has 4 choices (A), (B), (C) and (D) for its answer, out of which **ONLY ONE** is correct.

1. $\sqrt{ab} = \sqrt{a} \times \sqrt{b}$ is true when

(A) a and b are either +ve or –ve (B) a and b are +ve

(C) a and b both are negative (D) None of these

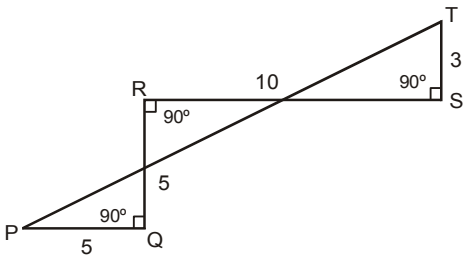
2. The value of $\left(\frac{x^b}{x^c}\right)^{\frac{1}{bc}} \cdot \left(\frac{x^c}{x^a}\right)^{\frac{1}{ca}} \cdot \left(\frac{x^a}{x^b}\right)^{\frac{1}{ab}}$ is :

(A) x (B) $\frac{1}{x}$ (C) – 1 (D) 1

3. If 5x – 2y = k one of answer is (2, – 2), then k =.....

(A) – 40 (B) 6 (C) 14 (D) 10

4. In the given figure $\angle Q = \angle R = \angle S = 90^\circ$ and PQ = QR = 5, RS = 10, ST = 3, then the length of PT will be



(A) 14 (B) 16 (C) 17 (D) 19

5. ABC is a triangle in which $\angle B = 2\angle C$. D is a point on side BC such that AD bisects $\angle BAC$ and AB = CD. Then $\angle BAC$ =

(A) 75° (B) 72° (C) 90° (D) 115°

6. Distance between the parallel lines x = 8 and x + 1 = 0 is

(A) 8 (B) 1 (C) 9 (D) 7

7. The two solutions of the lines $\pi x + y = 9$.

(A) (0, 0), (0, 1) (B) (0, 9), (9/π, 0) (C) (1/π, 1), (–1/π, –10) (D) (–1, 9π), (1, 9+π)

8. The value of $0.\overline{63} + 0.\overline{37}$ is :

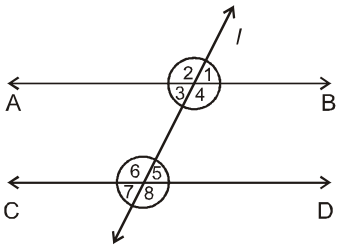
(A) 1 (B) $\frac{100}{99}$ (C) $\frac{100}{90}$ (D) None of these

Space for Rough Work

9. If quotient = $3x^2 - 2x + 1$, remainder = $2x - 5$ and divisor = $x + 2$, then the dividend is :
(A) $3x^3 - 4x^2 + x - 3$ (B) $3x^3 - 4x^2 - x + 3$
(C) $3x^3 + 4x^2 - x + 3$ (D) $3x^3 + 4x^2 - x - 3$

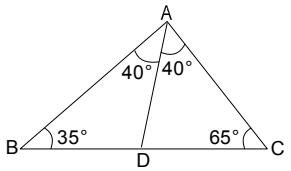
10. The value of $\sqrt{27} - \frac{9}{\sqrt{3}} - 4\sqrt{\frac{1}{9}} + 4\sqrt[3]{\frac{1}{27}}$ will be –
(A) $\sqrt{3}$ (B) $2\sqrt{3}$ (C) 0 (D) 3

11. In the given figure, AB||CD. If $\angle 1 = (2x + y)^\circ$ and $\angle 6 = (3x - y)^\circ$, then the measure of $\angle 2$ in terms of y is



(A) $(108 - y)^\circ$ (B) $(2 - y)^\circ$ (C) $(1 - y)^\circ$ (D) $(100 + y)^\circ$

12. In ΔABC, $\angle B = 35°$, $\angle C = 65°$ and the bisector AD of $\angle BAC$ meets BC at D. Then, which of the following is true ?



(A) AD > BD > CD (B) BD > AD > CD (C) AD > CD > BD (D) None of these

13. Find the perimeter of the figure obtained by joining points A (5, 3), B(5,7), C(–2, 7) and D(–2, 3).
(A) 11 unit (B) 22 unit (C) 33 unit (D) 44 unit

14. A father is 7 times as old as his son. Two years ago, the father was 13 times as old as his son. Father's present age is
(A) 24 years (B) 28 years (C) 30 years (D) 32 years

15. If $\frac{4+3\sqrt{3}}{\sqrt{7+4\sqrt{3}}} = x + \sqrt{y}$, $x \in z$, $y \in z$ (where z is the set of integers) then
(A) x = – 1, y = 12 (B) x = 1, y = – 12 (C) x = 1, y = 12 (D) x = – 1, y = – 12

16. P(x) = (x – 1) (x + 1) is ..... polynomial.
(A) Linear (B) Quadratic (C) Cubic (D) Invariant

Space for Rough Work

17. If the perimeter of a rectangle is 'p' and its diagonal is 'd', then the difference between the length & width of the rectangle is

(A) $\sqrt{\frac{8d^2 - p^2}{4}}$ (B) $\sqrt{\frac{8d^2 + p^2}{4}}$ (C) $\sqrt{\frac{6d^2 - p^2}{4}}$ (D) $\sqrt{\frac{6d^2 + p^2}{4}}$

18. ABCD is a square and P, Q, R are points on AB, BC and CD respectively such that AP = BQ = CR and $\angle PQR = 90^\circ$, then $\angle QPR$:

(A) 45º (B) 50º (C) 60º (D) 70º

19. In a ΔXYZ, LM || YZ and bisectors YN and ZN of $\angle Y$ & $\angle Z$ respectively meet at N on LM. Then YL+ZM=

(A) YZ (B) XY (C) XZ (D) LM

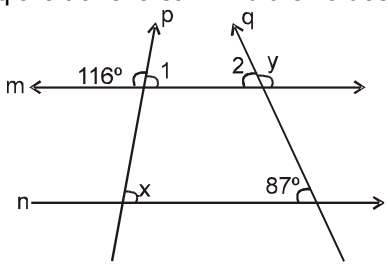
20. If $x^4 + \frac{1}{x^4} = 47$, find the value of $x^3 + \frac{1}{x^3}$.

(A) ± 18 (B) ± 36 (C) ± 20 (D) ± 27

21. Linear equation y = 2x + 3 cuts the y-axis at :

(A) (0, 3) (B) (0, 2) (C) $\left(\frac{3}{2},0\right)$ (D) $\left(\frac{2}{3},0\right)$

22. In the Figure, m || n and p and q are transversal. Find the values of x and y.



(A) 62º, 90º (B) 64º, 93º (C) 60º, 89º (D) 65º, 95º

23. Two sides of a triangle are of lengths 5 cm and 1.5 cm. The length of the third side of the triangle cannot be:

(A) 3.6 cm (B) 4.1 cm (C) 3.8 cm (D) 3.4 cm

24. The solution of $(25)^{x-2} = (125)^{2x-4}$ is

(A) $\frac{3}{4}$ (B) 0 (C) 2 (D) – 2

25. If $x^2 - 4$ is a factor of $2x^3 + ax^2 + bx + 12$, where a and b are constant. Then the values of a and b are :

(A) – 3, 8 (B) 3, 8 (C) –3, – 8 (D) 3, – 8

Space for Rough Work

2. PHYSICS

Straight Objective Type

This section contains 10 questions. Each question has 4 choices (A), (B), (C) and (D) for its answer, out of which **ONLY ONE** is correct.

26. Assertion:- When a body is subjected to a uniform acceleration, it always in a straight line.
Reason: Straight line motion is the natural tendency of the body.
(A) If assertion is true and reason is a correct explanation of assertion.
(B) If assertion is true and reason is not a correct explanation of assertion.
(C) If assertion is true but reason is false.
(D) If both assertion and reason are false.

27. A stationary ball weighing 0.25 kg acquires a speed of 10 m/s when hit by a hockey stick. The impulse imparted to the ball is :
(A) 0.25 N × S (B) 2.5 N × S (C) 2 N × S (D) 0.5 N × s

28. The ratio of inertial mass to gravitational mass is:
(A) Zero (B) Less than 1 (C) Equal to 1 (D) More than 1

29. A train passes over a 800 m long bridge. If the speed of the train is 36 m/s and the train takes 28 s to cross the bridge, the length of the train is:
(A) 200 m (B) 600 m (C) 800 m (D) 208 m

30. A bullet of mass 10 g is fired with a rifle. The bullet takes 0.003 s to move through its barrel and leaves with a velocity of 300 ms^{-1}. The force exerted on the bullet by the rifle :
(A) 10^3 N (B) 10^4 N (C) 10^5 N (D) zero

31. At which of the following locations, the value of g is largest:
(A) At equator (B) On the top of Qutub Minar
(C) On the top of Mount Everest (D) A camp site of America

32. The speed of a body is 1 ms^{-1}. The angle between distance-time graph of the body and the time axis is:
(A) 0º (B) 30º (C) 45º (D) 60º

33. 9.8 N is equal to:
(A) 1 kgf (B) 1 kgwt (C) A and B both (D) Neither A nor B

34. The value of g on moon is $\frac{1}{6}$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

35. A bullet of mass 0.01 kg is fired from a gun weighing 5.0 kg. If the speed of the bullet is 250 m/s, calculate the speed with which the gun recoils:
(A) 0.50 m/s (B) – 0.25 m/s (C) + 0.05 m/s (D) + 0.25 m/s

Space for Rough Work

3. CHEMISTRY

Straight Objective Type

This section contains 10 questions. Each question has 4 choices (A), (B), (C) and (D) for its answer, out of which **ONLY ONE** is correct.

36. How can we separate Benzene from water
(A) by Centrifugation (B) By using separating funnel
(C) by Chromatography (D) By sublimation

37. Which process occurs when Ammonium chloride heated.
(A) Boiling (B) Melting (C) Sublimation (D) Condensation

38. A gas can be best liquefied
(A) by increasing the temperature
(B) by lowering the pressure
(C) by increasing the pressure and reducing the temperature
(D) none of these is correct

39. **Statement I** : A separating funnel is used to separate immiscible liquids.
Statement II : We can separate Ammonium chloride and common salt by using separating funnel.
(A) Both statement I and II are correct.
(B) Both statement I and II are incorrect.
(C) Statement I is correct and statement II is incorrect.
(D) Statement I is incorrect and statement II is correct

40. The temperature at which celsius and fahrenheit scales shows the same reading is
(A) 40° K (B) 100° F (C) – 40° C (D) – 100° C

41. A mixture
(A) has a fixed composition. (B) does not have a fixed melting point.
(C) has a fixed melting point. (D) is a pure substance

42. The fifth state of matter is formed by
(A) condensation of water vapours. (B) evaporation of liquids.
(C) sublimation of substance. (D) cooling of gas at super low temperature

43. The principle used in diagnostic laboratories for blood and urine tests is
(A) sublimation. (B) evaporation. (C) filtration (D) centrifugation

44. The chemical substance used to keep within the clothes to protect from the insects and moths are
(A) sodium chloride (B) naphthalene (C) iodine (D) ammonium chloride.

45. The mass % of a solvent in a solution is recorded as 82. The mass % of the solute will be
(A) 21 (B) 19 (C) 18 (D) 16

Space for Rough Work

4. BIOLOGY

Straight Objective Type

This section contains 10 questions. Each question has 4 choices (A), (B), (C) and (D) for its answer, out of which **ONLY ONE** is correct.

46. Omnis cellula e cellula is generalisation given by:
(A) Lamarck (B) Dutrochet (C) Leeuwenhoek (D) Virchow

47. The meristematic cells have
(A) thin walls (B) Active nucleus (C) absence of vacuoles (D) all of the above

48. Apiculture is related to
(A) birds (B) hen (C) honey bee (D) fishes

49. Cells are autonomous because:
(A) they synthesise components of living protoplasm from nonliving materials
(B) they are able to grow and divide
(C) each cell has its own life span
(D) all of the above

50. In man thickest skin is found in
(A) palm (B) thigh (C) sole (D) thumb

51. The science of agriculture includes
(A) management of plants and animals (B) management of plants
(C) management of animals (D) management of insects

52. A multicellular organism possesses
(A) differentiated cells (B) undifferentiated cells
(C) dedifferentiated cells (D) all the above.

53. Companion cells are usually seen associated with?
(A) fibres (B) parenchyma (C) xylem vessels (D) sieve tubes

54. The desired varieties of economically useful crops are raised by
(A) vernalisation (B) mutation (C) natural selection (D) hybridization

55. Which of the following lack blood supply?
(A) Bone (B) Connective tissue (C) Cartilage (D) Vessels

Space for Rough Work

5. MENTAL ABILITY

Straight Objective Type

This section contains 15 questions. Each question has 4 choices (A), (B), (C) and (D) for its answer, out of which **ONLY ONE** is correct.

56. Find the missing term.
4, 8, 12, 24, 36, 72, ?
(A) 98 (B) 100 (C) 144 (D) 108

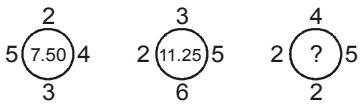
57. Find the wrong term.
9, 54, 44, 264, 254, 1520, 1514
(A) 1514 (B) 1520 (C) 264 (D) 44

58. Find the missing term.
TYU, NSO, HMI, ?
(A) AGC (B) CGC (C) GBC (D) BGC

59. Find the wrong term.
DKY, FJW, HIT, JHS, LGQ
(A) FJW (B) LGQ (C) JHJ (D) HIT

Direction : (60 to 61) Find the missing term.

60.



(A) 4.5 (B) 5.0 (C) 8.5 (D) 7.0

61.

24	3	15
?	0	48
80	63	35

(A) 7 (B) 8 (C) 9 (D) 10

62. In a coded language NUMBER is written as MFNYVI. Then FIGURE may be written in coded language as-
(A) ERHFID (B) URTVSF (C) GJTFSF (D) URTFIV

63. A watch reads 4 : 30. If the minute-hand points to East, in which direction does the hour-hand point?
(A) North - East (B) South - East (C) North - West (D) North

Directions : (64) Six Persons P, Q, R, S, T and U are sitting in a circle facing one another front to front. P is sitting in front of Q, Q is sitting to the immediate right of T and immediate left of R, P is to the left of U and right of S.

64. Who is sitting opposite to R ?
(A) P (B) Q (C) S (D) U

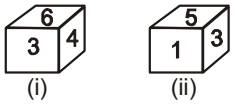
Space for Rough Work

Directions : (65) In given question, two statements are followed by two conclusions, I and II. You have to take the given two statements to be true even if they seem to be at variance from commonly known facts. Read the conclusions and then decide which of the given conclusions logically follows from the two given statements, disregarding commonly known facts. Mark the answer
(A) if only conclusion I follows
(B) if only conclusion II follows
(C) if both I and II follow.
(D) if none follows

65. **Statements:** All puppies are dogs.
All dogs are trained.
Conclusions: I. Some trained are puppies.
II. All trained are puppies.

66. In U.P. on 17th Oct. 1996, the president rule was declared. Find the day of week on that date.
(A) Tuesday (B) Friday (C) Wednesday (D) Thrusday

67. On the basis of two figures of dice, you have to tell what number will be on the opposite face of number 5 ?



(i) (ii)

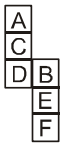
(A) 1 (B) 2 (C) 4 (D) 6

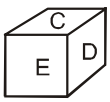
68. Which of the following Venn diagrams correctly represents rectangle, quadrilateral and polygon ?
(A) (B) (C) (D)

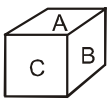
Direction (69) : In each of the following questions, three alternatives are alike in a certain way but the rest one is different. Find out the odd one and write correct answer.

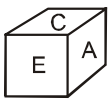
69. (A) 150 (B) 165 (C) 200 (D) 250

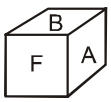
Directions : (70) The figure (X) given below is the unfolded position of a cubical dice. In each of the following questions this unfolded figure is followed by four different figures of dice. You have to select the figure which is identical to the figure (X).

70. (X) 

(A) 

(B) 

(C) 

(D) 

Space for Rough Work

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Igniting Young Minds

Answer Key
R-SAT (Sample Paper)
ACADEMIC SESSION : 2026-27
Class-X

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