THE RADIANT ACADEMY
Igniting Young Minds
Udaipur

Code - 0

SAMPLE PAPER

Academic Session : 2022-23

# Class : VIII

**FOR STUDENTS MOVING IN CLASS – (VIII) IN 2023-24**

**(PRESENTLY STUDYING IN CLASS-VII IN 2022-23)**

**Date : 2023-24** | **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

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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.** If we add 'x' to –25 we get 15, then the value of x is:

(A) -35. (B) -10. (C) 10. (D) 40.

**2.** If a book is $12\frac{1}{2}$cm long and $10\frac{2}{3}$cm wide, then its perimeter (in cm) will be:

(A) $\frac{112}{6}$ (B) $\frac{139}{6}$ (C) $\frac{139}{3}$ (D) $\frac{140}{3}$

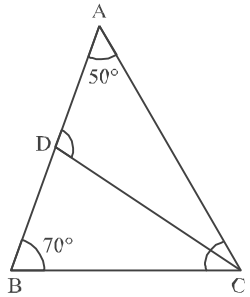
**3.** The simplest form of $\frac{3}{7}+\frac{6}{11}+\frac{-8}{21}$ is:

(A) $\frac{231}{137}$ (B) $\frac{215}{121}$ (C) $\frac{121}{215}$ (D) $\frac{137}{231}$

**4.** If the supplement of an angle is three times its complement, then angle is:

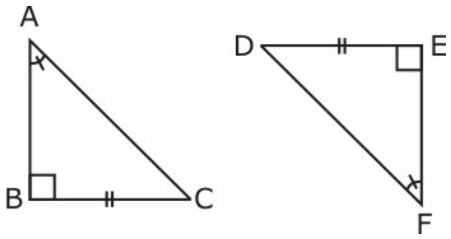
(A) 40º (B) 35º (C) 50º (D) 45º

**5.** In $\Delta ABC$, $\angle A = 50°$, $\angle B = 70°$ and bisector of $\angle C$ meets AB in D fig.Measure of $\angle ADC$ is.




(A) 50° (B) 100° (C) 30° (D) 70°

**6.** By which rule, the two triangles are congruent is




(A) SAS. (B) SSS. (C) AAS. (D) RHS.

**Space for Rough Work**

**7.** Which one of the following statements is true ?

(A) $4^{3^2} = (4^3)^2$ (B) $4^{3^2} > (4^3)^2$ (C) $4^{3^2} < (4^3)^2$ (D) they cannot be compared

**8.** The simplest form of $[7x^2y - 7xy + 5xy^2 - 5xy + x^2y - xy^2]$ is

(A) $8x^2y + 4xy^2 + 12xy$. (B) $8x^2y + 4xy^2 - 12xy$. (C) $-8x^2y - 4xy^2 + 12xy$. (D) $8x^2y - 4xy^2 - 12xy$.

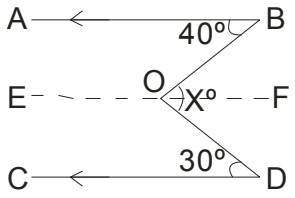
**9.** The product of two integers is 120. If one of them is -8, then the other integer will be

(A) -20. (B) -15. (C) -12. (D) -10.

**10.** A tailor stitched $\frac{1}{9}^{th}$ of the cloth on first day, $\frac{5}{8}$ of remaining on the second day. He is still left with 1m cloth . Find the total length of cloth.

(A) 1 m (B) 2 m (C) 3 m (D) $\frac{1}{3}$ m.

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

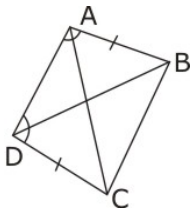



(A) 35º (B) 110º (C) 70º (D) 140º

**12.** If three angles of a triangle are (2x + 20)°, (x + 30)° and (2x - 10)°, then the angles will be

(A) 52°, 60° and 58° respectively. (B) 76°, 55° and 49° respectively.
(C) 76°, 58° and 46° respectively. (D) 80°, 61° and 47° respectively.

**13.** Given ABCD is a quadrilateral. If AB = DC and $\angle DAB = \angle ADC$, then the two congruent triangle in quadrilateral ABCD are




(A) ADC and DAB. (B) ADC and ABC. (C) ADB and DBC. (D) ABC and ABD.

**14.** For what positive integer 'n' does $n^2 \times 1995^2 \times 1996^2 \times 1997^2 = 3990^2 \times 3992^2 \times 3994^2$?

(A) 2 (B) 4 (C) 5 (D) 8

**15.** If x = 1, y = -1 then the value of $x^7 \times x^0 \times (xy)$ would be

(A) 1. (B) –1. (C) 0. (D) 7.

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**Space for Rough Work**

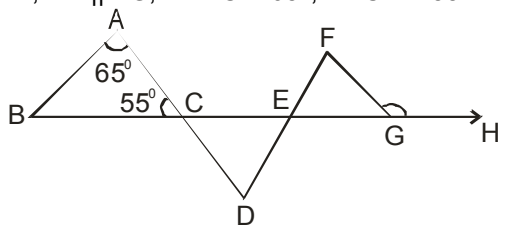
**16.** If we add –22 to the difference of –7 and –17, then we get

(A) -46. (B) -32. (C) -12. (D) -10.

**17.** Reciprocal of $\left(\frac{3}{4} \div 3\right)$ is

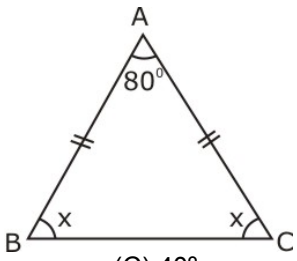
(A) $\frac{1}{4}$ (B) $\frac{1}{3}$ (C) 3. (D) 4.

**18.** In the given figure if AB || DF, AD || FG, ∠BAC = 65°, ∠ACB = 55°. Find ∠FGH.




(A) 125º (B) 100º (C) 120º (D) 110º

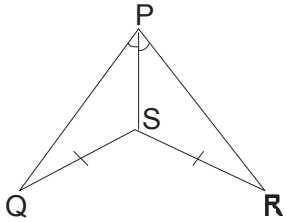
**19.** In the given isosceles triangle, if AB = AC, then the value of base angles would be



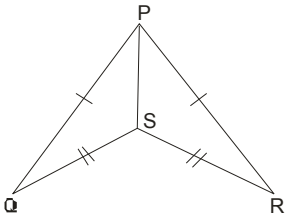

(A) 30º (B) 35º. (C) 40º. (D) 50º.

**20.** In the following which two triangles are congruent by side-side -side congruence property.

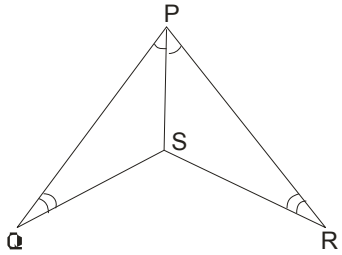
(A)



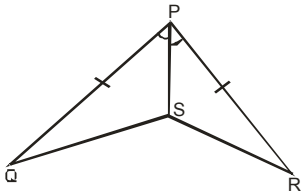

(B)




(C)




(D)




**Space for Rough Work**

**21.** The standard form of 65,950 is
(A) $0.6595 \times 10^4$. (B) $6.595 \times 10^4$. (C) $65.95 \times 10^4$. (D) $659.5 \times 10^4$.

**22.** If A = 2p + q + r, B = -3p - 7q + 6r and C = 22p + 12q - 3r, then C - (A + B) is
(A) –23p – 18q +10r. (B) 23p + 18q + 10r. (C) 23p + 18q – 10r. (D) 23p – 18q – 10r.

**23.** Simplify $\left[2^{\frac{1}{ab}}\right]^c \left[2^{\frac{1}{bc}}\right]^a \left[2^{\frac{1}{ac}}\right]^b$ when $a^2 + b^2 + c^2 = 2abc$.
(A) 64 (B) 32 (C) 4 (D) 8

**24.** If $\frac{a}{b}+\frac{b}{a}=4$, find the value of $\frac{a^2}{b^2}+\frac{b^2}{a^2}$
(A) 16 (B) 18 (C) 14 (D) 20

**25.** The value of $\left[\left(\frac{-1}{3}\right)^{-2}\right]^{-2} \times \left[\left(\frac{2}{3}\right)^2\right]^{-2} \div \left[\left(\frac{3}{2}\right)^{-1}\right]^{-2}$ is :
(A) 81 (B) 36 (C) $\frac{1}{81}$ (D) $\frac{1}{36}$

# 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.** Which instrument is used to measure weight?
(A) Measuring tape (B) Spring balance (C) Measuring cylinder (D) Beam balance

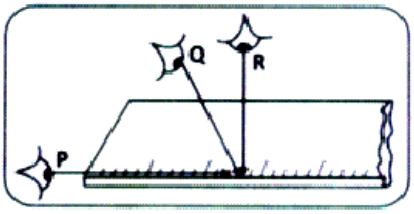
**27.** The device in a vehicle used to measure the speed is
(A) odometer (B) Speedometer (C) Voltmeter (D) Galvanometer

**28.** The range of a clinical thermometer is:
(A) 0-100°C. (B) 32-212°F. (C) 0-273°C. (D) 35-42°C.

**29.** A simple pendulum takes 40 seconds to complete 20 oscillations. So, the time period of the pendulum is :
(A) 2 seconds (B) 4 seconds (C) 1 second (D) 6 seconds.

**Space for Rough Work**

**30.** The given figure shows the positions of the eye while measuring the length on the ruler.




Which of the given positions of the eye are inaccurate techniques?
(A) P and Q (B) Q and R (C) Rand P (D) P,Q and R

**31.** 90 km/h is equal to:
(A) 5 m/s (B) 25 m/s (C) 18 m/s (D) 36 m/s

**32.** In celsius scale, the difference between lower fixed point and upper fixed point is divided into:
(A) 100 parts. (B) 273 parts. (C) 180 parts. (D) 50 parts.

**33.** A sound wave has a frequency of 1000 Hz and a wavelength of 35 cm. How long will it take to travel 1 km:
(A) 3.20 s (B) 2.86 s (C) 5.94 s (D) 3.10 s

**34.** The changes which repeat themselves at regular interval of time are :
(A) slow changes (B) periodic changes
(C) non-periodic changes (D) None of these

**35.** The echo is heard if the original sound reflected by an obstacle reaches our ears after:
(A) 10s (B) 5s (C) 1s (D) 0.1 s

# 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.** Correct electronic configuration of potassium(K) is ?
(A) 2,7,1 (B) 2,8,2 (C) 2,8,8,1 (D) 2,8,9

**37.** Which of the following is not the property of wool?
(A) Flame retardant (B) Breathable (C) Non allergic (D) non-Biodegradable

**38.** HCOOH is :-
(A) Hydrochloric acid (B) Formic acid (C) Sulphurous acid (D) Oxalic acid

**39.** Molecular mass is 98u, identify the compound:-
(A) $H_2SO_4$ (B) $H_2SO_3$ (C) $H_4SiO_4$ (D) HBr

**40.** Silk fibre are------ and-------?
(A) Soft, dull (B)hard,dull (C)Soft, lustrous (D)rough, lustrous

**Space for Rough Work**

**41.** Tusser silk and Muga silk are produced by:-
(A)Anheraea Mylitta worms (B) Philosomia ricin worms
(C) Bombyx mori worms (D) none of these

**42.** Match the column:-

| **Column-A** | **Column-B** |
|---|---|
| 1.A substance which turns turmeric solution reddish brown | a. Base |
| 2.A reaction between an acid and a base. | b. Acetic acid |
| 3. An acid present in vinegar | c. Neutralisation |
| 4. An indicator derived from lichen | d. Acid |
| 5. An ant whose sting contains | e. Litmus |

(A) 1-a, 2-c, 3-b, 4-e, 5-d (B) 1-c, 2-a, 3-b, 4-e, 5-d
(C) 1-d, 2-c, 3-b, 4-e, 5-a (D) 1-a, 2-e, 3-b, 4-c, 5-d

**43.** Burning piece of wool fabric smells like burning hair. This is because both wool and hair are made up of:
(A) Proteins (B) Fats (C) Vitamins (D) Carbohydrates

**44.** In summers, if milk is not refrigerated, it becomes sour. Which of the following is added by milkmen to fresh milk to prevent the milk from spoiling?
(A) Caustic soda (B) Potash alum (C) Baking soda (D) Lime water

**45.** Correct statement about phenolphthalein is that it:-
(A) turns red to blue in basic solution (B) turns blue to red in acidic solution
(C) turns pink in acidic solution (D) remains colourless in acidic solution .

# 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.** In lichen, the autotrophic partner is
(A) algal partner. (B) fungal partner.
(C) algal and fungal partner. (D) bacterial partner.

**47.** A reddish brown gland situated in the upper part of the abdomen on the right side is
(A) liver. (B) kidney. (C) pituitary. (D) thymus.

**48.** Maximum temperature of the day normally occurs.
(A) at noon. (B) in the afternoon. (C) in the evening. (D) at night.

**49.** In muscles, glucose breaks to give lactic acid and energy in the
(A) presence of oxygen. (B) absence of oxygen.
(C) absence of carbon dioxide. (D) glucose breakdown never takes place in muscles.

**Space for Rough Work**

**50.** Match the components of column A with their correct counter part in column B:

| **Column A** | **Column B** |
|---|---|
| A. Haemoglobin | (i) absorption of water |
| B. Atria | (ii) contains water and salt |
| C. Root hairs | (iii) RBC |
| D. Sweat | (iv) heart |

(A) A-(iii), B-(iv), C-(ii), D-(i) (B) A-(i), B-(iv), C-(ii), D-(iii)
(C) A-(iii), B-(iv), C-(i), D-(ii) (D) A-(ii), B-(iii), C-(iv), D-(i)

**51.** The part/parts of a desert plant performing the function of photosynthesis is/are
(A) leaves and roots (B) stem and roots (C) leaves and stem (D) roots.

**52.** Digestion of food takes place in
(A) mouth, small intestine (B) mouth, large intestine
(C) mouth, anus (D) mouth, rectum

**53.** The climate is the average weather pattern taken over-
(A) One year (B) Two-three years
(C) Long time, say 25 years (D) Century

**54.** On an average, at rest an adult human being breathes
(A) 5-10 times in a minute. (B) 35-45 times in a minute.
(C) 15-18 times in a minute. (D) 12-20 times in a minute.

**55.** Type of blood circulation found in humans is
(A) single blood circulation. (B) double blood circulation.
(C) Both (A) and (B) (D) open type.

# 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.

**Directions: (56 to 57)** Find the missing number.

**56.** 2, 3, 10, 15, 26, ?
(A) 34 (B) 35 (C) 36 (D) 37

**57.** 1, 4, 27, 16, 125, 36, ?
(A) 216 (B) 343 (C) 64 (D) 49s

**Directions : (58 to 59)** Find the missing term.

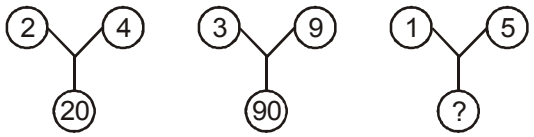
**58.** A , E , I , M , Q, ?
(A) P (B) U (C) V (D) W

**59.** J , N , R , V , ?
(A) X (B) Y (C) P (D) Z

**Space for Rough Work**

**Directions : (60 to 61)** Find the missing term in the given figures.

**60.**




(A) 75 (B) 26 (C) 25 (D) 20

**61.**


(A) 47 (B) 45 (C) 37 (D) 35

**Directions : (62 to 63)** Which sequence of letters when placed at the blanks one after the other will complete the given letter series ?

**62.** _ b a a _ b a _ a a b _
(A) b a b a (B) b b a a (C) a b b b (D) b b a b

**63.** b a b b b _ b _ b _ b b
(A) b b a (B) b a a (C) a b a (D) a a a

**Directions: (64)** Arrange the given words in alphabetical order and tick the one that comes first.

**64.** (A) Mahender (B) Mahendra (C) Maninder (D) Mahindra

**65.** If **DOWN** is coded as **FQYP** then how will **WITH** be coded?
(A) KYJV (B) IJYK (C) YKVJ (D) JKVY

**66.** Sita started from her house, walked 5 km North then 12 km West. How far away from her house was she then?
(A) 12 km (B) 13 km (C) 14 km (D) 15 km

**67.** How many A are in the given letter series which does not has B just before it but has C just after it?
DACBACDACBCACBACBADC
(A) 3 (B) 4 (C) 5 (D) 6

**Directions : (68)** Answer the questions on the basis of the information given below. If '$' represents'+','*' represents '–', '#' represents '×' and '@' represents '/' then answer the following questions based on the above given representation.

**68.** What is the value of 4 # 3 $ 10 @ 5 $ 8 # 2 * 18?
(A) 10 (B) 12 (C) 6.8 (D) 11.2

**69.** Mohan travels 7 km East wards, then he turns right and travels 3 km and further turns right again and travels 11 km. How far is he from the starting point?
(A) 5 km (B) 14 km (C) 21 km (D) 23 km

**70.** R earns more than H but not as much as T, M earns more than R. Who earns least among them?
(A) H (B) R (C) T (D) M

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**Space for Rough Work**