

SAMPLE PAPER FOR 10TH CLASS

Time: 1 Hr

Max Marks : 200

THE TEST CONSISTS OF TWO SECTIONS : (TOTAL 50 QUESTIONS)

SECTION A : MAT

20 Questions

SECTION B : SAT

30 Questions

INSTRUCTIONS TO CANDIDATE

- Each subject in this paper consists of multiple choice questions with only one correct answer. **+4 marks** will be awarded for correct answer and **-1 mark** for wrong answer.
- Please read the instructions given for each question carefully and fill the correct answer against the question numbers on the answer sheet in the respective subject.
- Use blue or black ball point pen or H.B. pencil to darken the appropriate circle & mark should completely fill the circle.
- The Question paper contains blank spaces for your rough work. No additional sheet will be provided for rough work.
- Blank papers, Clipboards, Log Tables, Slide rule, Calculators, Cellular phones, Pagers and Electronic gadgets in any form are not allowed.
- Write your Name, Roll Number in the block at the top of the Answer Sheet. Also write your Name & Registration No. in the space provided on this cover page of question paper.
- **This test paper is just an indicative of the actual test, The pattern of the actual test may vary.**

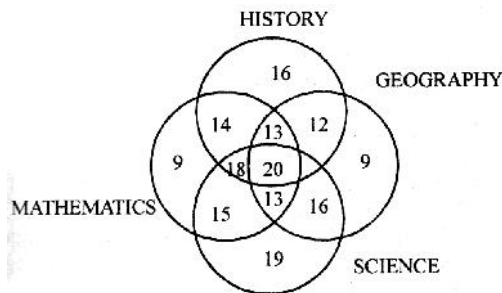
Name: _____ Students ID: _____

SECTION - A (MAT)

Directions : (Q 1-3) Complete the series.

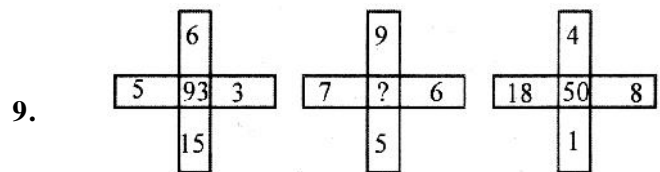
1. 5, 11, 24, 51, 106, ?
 (A) 214 (B) 218
 (C) 219 (D) 217
2. 4, 9, 13, 22, 35, –
 (A) 57 (B) 70
 (C) 63 (D) 75
3. adb _ ac _ da _ cddcb _ dbc _ cbda
 (A) bccba (B) cbbaa
 (C) ccbba (D) bbcad
4. Find the odd-set in following question:
 (A) 7, 4, 9 (B) 13, 36, 7
 (C) 5, 25, 9 (D) 11, 16, 7
5. If $A + D > C + E$, $C + D = 2B$ and $B + E > C + D$, it necessarily follows that
 (A) $A + B > 2D$ (B) $B + D > C + E$
 (C) $A + D > B + E$ (D) $A + D > B + C$

Directions : (Q 6-8) Refer to the following Venn diagram :



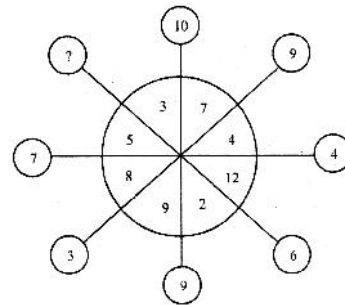
6. The number of students who took any three of the above subjects was
 (A) 62 (B) 63
 (C) 64 (D) 66
7. The number of students in total, who took History or Mathematics or Science, was
 (A) 165 (B) 190
 (C) 424 (D) 430
8. The number of students who took both History and Geography among other subjects was
 (A) 62 (B) 45
 (C) 65 (D) 66

Directions : (Q 9-10) Find the missing number in the following questions:



9. (A) 15 (B) 19
 (C) 27 (D) 89

10.



- (A) 12 (B) 13 (C) 14 (D) 15

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Space for Rough work

Directions : (Q 11) *In the question below consists of a question and two statements numbered I and II given below it. You have to decide whether the data provided in the statements are sufficient to answer the question. Read both the statements and give your answer as :*

- (A) if the data in statement I alone are sufficient to answer the question, while the data in statement II alone are not sufficient to answer the question.
 - (B) if the data in statement II alone are sufficient to answer the question, while the data in statement I alone are not sufficient to answer the question.
 - (C) if the data either in statement I alone or in statement II alone are sufficient to answer the question.
 - (D) if the data in both statements I and II together are necessary to answer the question.
- 11.** Among Nitin, Amit, Sudesh, Rekha and Sujata, who came last for the programme?
 I. Nitin came after Amit but not after Sujata.
 II. Rekha came after Sujata but not after Sudesh.
- 12.** Pushpa is twice as old as Rita was two years ago. If difference between their ages be 2 years, how old is Pushpa today?
 (A) 6 years (B) 8 years
 (C) 10 years (D) 12 years

Directions : (Q 13-16) *Study the following information carefully and then answer the questions given below it*
P, Q, R, S, T, W and Z are seven students studying in three different institutes - A, B and C. There are three

girls among them studying one each in each of these institutes. Two of them study Mechanical Engineering, two study Medicine and one each study Biotechnology, Pharmacy and Electrical Engineering. R studies with only her best friend P who studies Pharmacy in college B. No girls studies either Biotechnology or Electrical Engineering. T studies Mechanical Engineering in college A and his brother W studies Electrical Engineering in college C. None of the two studying Medicines studies in college B. S studies Biotechnology along with T and Z.

- 13.** In which of the college do three of them study?
 (A) C (B) B
 (C) A or C (D) None of these
- 14.** Which of the following pairs of students study Medicine?
 (A) S, Z (B) Z, W
 (C) Z, Q (D) T, Q
- 15.** Which of the following is the field of study of Z?
 (A) Medicine (B) Mechanical
 (C) Electrical (D) Data inadequate
- 16.** Which of the following three represent the three girls?
 (A) S, Z, Q (B) Z, R, Q
 (C) S, R, Q (D) Data inadequate

Directions : (Q-17) *In the question below are given two statements followed by two conclusions numbered I and II. You have to take the two given statements to be true even if they seem to be at variance from commonly known facts and decide which of the given conclusion(s) logically follow(s) from the two given statements, disregarding commonly known facts.*



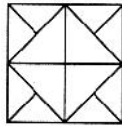
Space for Rough work

SECTION - B (SAT)

Given your answer as

- (A) if only conclusion I follows
- (B) if only conclusion II follows
- (C) if either I or II follows
- (D) if neither I nor II follows

- 17.** Statements : 1 All plants are trees.
2. No tree is green
- Conclusions : I. Some plants are green.
II. Those plants which are not trees are green.
- 18.** How many triangles are there in the following figure?



- (A) 16
- (B) 20
- (C) 12
- (D) 22

Directions : (Q 19-20) A cube is coloured red on two opposite faces, blue on two adjacent faces and yellow on two remaining faces. It is then cut into two halves along the plane parallel to the red faces. One piece is then cut into four equal cubes and the other one into 32 equal cubes.

- 19.** How many cubes do not have any coloured faces?
- (A) 0
 - (B) 16
 - (C) 4
 - (D) 8
- 20.** How many cubes do not have any red faces?
- (A) 8
 - (B) 16
 - (C) 20
 - (D) 24

- 21.** Fourth term of an arithmetic progression is 8. What is the sum of the first 7 terms of the arithmetic progression –
- (A) 7
 - (B) 64
 - (C) 56
 - (D) Can't be determined

- 22.** If arithmetic mean of a and b is $\frac{a^n + b^n}{a^{n-1} + b^{n-1}}$ then value of n is
- (A) -1
 - (B) 0
 - (C) 1
 - (D) None of these

- 23.** Find the sum to 200 terms of the series $1 + 4 + 6 + 5 + 11 + 6 + \dots$
- (A) 30, 200
 - (B) 29, 800
 - (C) 30, 200
 - (D) None of these

- 24.** If the p^{th} term of an A.P. be $\frac{1}{q}$ and q^{th} term be $\frac{1}{p}$, then the sum of its pq^{th} terms will be –

- (A) $\frac{pq-1}{2}$
- (B) $\frac{1-pq}{2}$
- (C) $\frac{pq+1}{2}$
- (D) $-\frac{pq+1}{2}$

- 25.** The line $x + y = 14$ divides the line joining the points $(-1, 1)$ and $(5, 7)$ in the ratio –
- (A) $2 : 1$
 - (B) $1 : 2$
 - (C) $1 : 2$ externally
 - (D) None of these

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26. If $P(1, 2)$, $Q(4, 6)$, $R(5, 7)$ and $S(a, b)$ are the vertices of a parallelogram $PQRS$, then –
 (A) $a = 2, b = 4$ (B) $a = 3, b = 4$
 (C) $a = 2, b = 3$ (D) $a = 3, b = 5$
27. For which value of k given below the points $A(-1, 4)$, $B(2, 5)$ and $C(3, k)$ are collinear –
 (A) $16/3$ (B) 16
 (C) 5 (D) -1
28. The points $(0, 8)$, $(1, 8)$ and $(1, -9/8)$ are the vertices of –
 (A) an equilateral triangle
 (B) the collinear points
 (C) an isosceles triangle
 (D) a right-angled triangle
29. The points of trisection of line joining the points $A(2, 1)$ and $B(5, 3)$ are
 (A) $\left(3, \frac{5}{3}\right), \left(4, \frac{7}{3}\right)$ (B) $\left(3, \frac{3}{5}\right), \left(4, \frac{3}{7}\right)$
 (C) $\left(-3, \frac{5}{3}\right), \left(4, -\frac{7}{3}\right)$ (D) $\left(3, -\frac{5}{3}\right), \left(4, \frac{3}{7}\right)$
30. If the distance between the points $(a, 2)$ and $(3, 4)$ be 8, then $a =$
 (A) $2 + 3\sqrt{15}$ (B) $2 - 3\sqrt{15}$
 (C) $2 \pm 3\sqrt{15}$ (D) $3 \pm 2\sqrt{15}$
31. Cl, Br, I, if this is Dobereiner's triad and the atomic masses of Cl and I are 35.5 and 127 respectively the atomic mass of Br is –
 (A) 162.5 (B) 91.5
 (C) 81.25 (D) 45.625
32. Newlands could classify elements only upto –
 (A) copper (B) chlorine
 (C) calcium (D) chromium
33. According to the Periodic Law of elements, the variation in properties of elements is related to their
 (A) nuclear masses (B) atomic numbers
 (C) nuclear neutron-proton number ratios
 (D) atomic masses
34. Fullerenes are a cluster of ____ atom held in a cage like structure
 (A) Carbon (B) Silicon
 (C) Oxygen (D) Hydrogen
35. When CO_2 is passed through lime water, it turns milky. The milkiness is due to :
 (A) $\text{Ca}(\text{OH})_2$ (B) CO_2
 (C) H_2O (D) CaCO_3
36. The fourth member of alkane is :
 (A) Ethane (B) Butane
 (C) Propane (D) Pentane
37. The chemical formula for marsh gas is :
 (A) C_2H_6 (B) CH_4
 (C) C_3H_8 (D) C_4H_{10}
38. When an object is moved away from a convex mirror, the image
 (A) becomes smaller
 (B) moves closer to the focus
 (C) becomes inverted
 (D) Both (A) & (B)

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39. Light travels in straight line because
 (A) its velocity is very high.
 (B) bending effect is negligible, due to its small wavelength.
 (C) it is not absorbed by atmosphere.
 (D) it consists of all wave lengths
40. A man stands in front of a mirror and finds that his image is larger than himself. The mirror is a _____ mirror.
 (A) convex (B) concave
 (C) plane (D) Both (A) and (B)
41. Total internal reflection may occur when light travels from _____ .
 (A) vacuum to air (B) water to glass
 (C) air to glass (D) glass to water
42. Real images are formed by ____ .
 (A) converging rays (B) diverging rays
 (C) Both (A) and (B) (D) Neither (A) and (B)
43. Velocity of light in medium 1 is $2.4 \times 10^7 \text{ m s}^{-1}$ and velocity of light in medium 2 is $1.8 \times 10^7 \text{ m s}^{-1}$, then the refractive index of medium 2 with respect to medium 1 is
 (A) $\frac{3}{4}$ (B) $\frac{4}{3}$
 (C) $\frac{1}{3}$ (D) $\frac{1}{4}$
44. A family has three children with blood groups A, B & AB. The genotypes of the parents are
 (A) $I^A I^A$ and $I^B i$ (B) $I^A i$ & $I^B i$
 (C) $I^A I^B$ & ii (D) $I^B I^B$ & $I^A I^A$
45. Mendel's experimental organism was
 (A) *Homo sapiens*
 (B) *Antirrhinum majus*
 (C) *Pisum sativum*
 (D) *Drosophila melanogaster*
46. Which one of the Mendel traits of pea was recessive
 (A) Axial flower (B) Green pod
 (C) Green seed (D) Round seed
47. Main reason of success of Mendel was
 (A) He employed statistical analysis
 (B) He performed statistical experiments
 (C) His choice of *Pisum sativum*
 (D) He was first to work on a plant
48. Early atmosphere contained methane & other hydrocarbons. They have been now replaced by
 (A) Nitrogen (B) Oxygen
 (C) Carbon dioxide (D) Hydrogen
49. Copper-T prevents
 (A) ovulation
 (B) Fertilization of egg
 (C) Implantation of embryo
 (D) Both (B) & (C)
50. A method of birth control in
 (A) GIFT (B) HJF
 (C) IVF (D) IUDS



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ANSWER KEY

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



Space for Rough work



Space for Rough work