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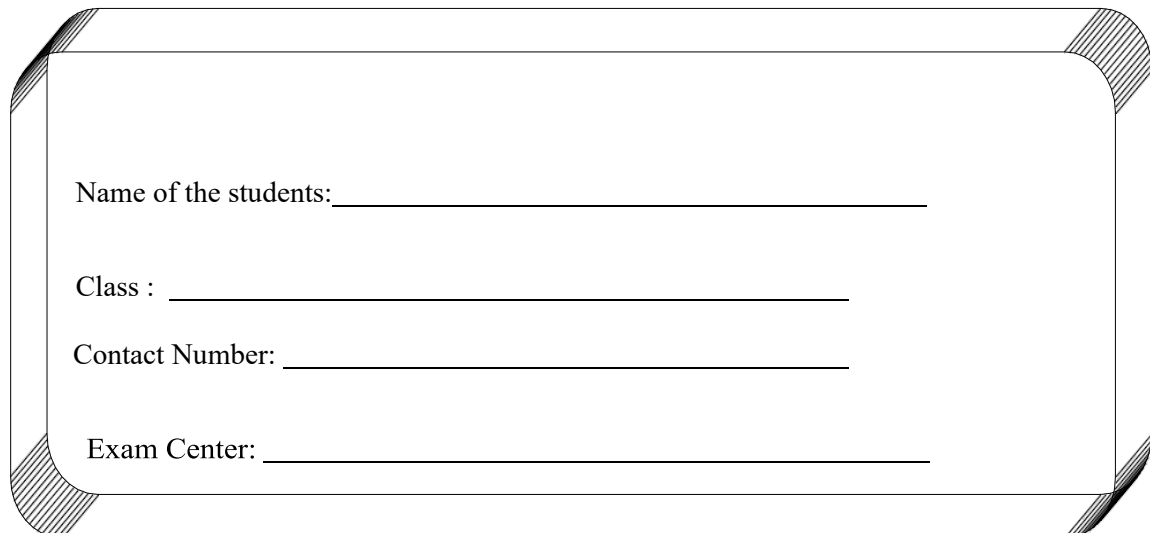
Class: X

Time allowed : 90 Minutes

Maximum Marks : 120

PLEASE READ THE INSTRUCTIONS IN QUESTION BOOKLET BEFORE ANSWERING THE QUESTION PAPER.

1. Before starting the paper, fill up the required details in the given space provided in the question paper cum answer sheet.
2. The question paper consists of '30' objective type questions. Each question carry 4 marks and all of them are compulsory.
3. Each question contains four alternatives out of which only ONE is correct.
4. There is **NO NEGATIVE** marking.
5. For rough work, use the space provided at the bottom of each page. No extra sheet will be provided for rough work and you are not supposed to bring the same.
6. Use of **blank papers, clip boards, log tables, calculator, slide rule, mobile** or any other electronic gadgets in any form is "**NOT PERMISSIBLE**".
7. You must not carry mobile phone even if you have the same, give it to your Invigilator before commencement of the test and take it back from him/her after the exam.
8. The answers of the questions must be marked by **ticking correct on the options** against the question by dark Black/Blue Ball point Pen only.



Name of the students: _____

Class : _____

Contact Number: _____

Exam Center: _____

Mathematics

1. Euclid's division lemma states that for two positive integers a and b , there exist unique integer q and r such that $a = bq + r$, where r must satisfy
 - (a) $a < r < b$
 - (b) $0 < r \leq b$
 - (c) $1 < r < b$
 - (d) NONE OF THESE
2. What will be the remainder if 7^{49} is divided by 25 ?
 - (a) 17
 - (b) 18
 - (c) 19
 - (d) NONE OF THESE
3. The number in the form of $4p + 3$, where p is a whole number, will always be
 - (a) odd multiple of 3
 - (b) even multiple of 3
 - (c) even or odd
 - (d) None of these
4. Find the nature of solution of the system of linear equations given by $3x + 4y = 5$ and $4x - 6y = 8$
 - (A) Unique trivial solution
 - (B) Unique non-trivial solution
 - (C) Infinitely many solutions
 - (D) None of these
5. For which values of ' a ' and ' b ' does the following pair of linear equations have an infinite number of solutions $2x + 3y = 7$;
 $(a - b)x + (a + b)y = 3a + b - 2$
 - (A) $a = 5, b = 1$
 - (B) $a = 4, b = 2$
 - (C) $a = 1, b = 5$
 - (D) $a = 2, b = 4$

Space For Rough Work

6. If the LCM of a and 18 is 36 and the HCF of a and 18 is 2, then a =

(A) 2

(B) 3

(C) 4

(D) 1

7. Four watches are ringing alarm bells in the interval of 6, 12, 15 and 18 seconds. If they start at the same time, how many times they will ring together in 4 hours ?

(A) 80

(B) 81

(C) 20

(D) 21

8. Find a quadratic polynomial whose zeroes are $(2a + 1)$ and $(2b + 1)$ if a and b are the zeroes of the polynomial $f(t) = 2t^2 - 7t + 6$.

(A) $2t^2 - 9t + 10$

(B) $t^2 - 9t + 20$

(C) $t^2 - 7t + 10$

(D) $2t^2 - 7t + 10$

9. The sum of seven consecutive natural numbers is 1617. How many of these number are not prime?

(A) 4

(B) 2

(C) 5

(D) 7

Space For Rough Work

10. If $x + y = 5$; then find the value of $x^3 + y^3 + 15xy - 125$

(A) 5

(B) 0

(C) 1

(D) 25

11. In order that the six digit number $1x0x3x$ be divisible by 11, the digit x should be :

(A) 2

(B) 1

(C) 4

(D) 5

12. If $x = \sqrt{7} - \sqrt{5}$, $y = \sqrt{5} - \sqrt{3}$ and $z = \sqrt{3} - \sqrt{7}$, then the value of

$x^3 + y^3 + z^3 - 2xyz$ is

(A) $-4\sqrt{5} - 12\sqrt{3} + \sqrt{7}$

(B) $-4\sqrt{5} + 2\sqrt{3} + 2\sqrt{7}$

(C) $4\sqrt{5} + 12\sqrt{3} + 2\sqrt{7}$

(D) $4\sqrt{5} - 12\sqrt{3} + \sqrt{7}$

13. In an examination, 34% of the students failed in Mathematics and 42% failed in English. If 20% of the students failed in both the subjects, then the percentage of students who passed in both the subject was

(A) 44

(B) 50

(C) 54

(D) 56

Space For Rough Work

14. If a set of data has zero as an observation, then which one of the following is NOT an appropriate measure of central tendency?

(A) Arithmetic mean

(B) Geometric mean

(C) Median

(D) Mode

15. The clustering of data around a central value is known as :

(A) mean

(B) mode

(C) median

(D) central tendency

Space For Rough Work

Science

16. Rays from Sun converge at a point 15 cm in front of a concave mirror. Where should an object be placed so that size of its image is equal to the size of the object?

- (a) 15 cm in front of the mirror
- (b) 30 cm in front of the mirror
- (c) between 15 cm and 30 cm in front of the mirror
- (d) more than 30 cm in front of the mirror

17. A full length image of a distant tall building can definitely be seen by using

- (a) a concave mirror
- (b) a convex mirror
- (c) a plane mirror
- (d) both concave as well as plane mirror

18. In torches, search lights and headlights of vehicles the bulb is placed

- (a) between the pole and the focus of the reflector
- (b) very near to the focus of the reflector
- (c) between the focus and centre of curvature of the reflector
- (d) at the centre of curvature of the reflector

19. The laws of reflection hold good for

- (a) plane mirror only
- (b) concave mirror only
- (c) convex mirror only
- (d) all mirrors irrespective of their shape

20. You are given water, mustard oil, glycerine and kerosene. In which of these media a ray of light incident obliquely at same angle would bend the most?

- (a) Kerosene
- (b) Water
- (c) Mustard oil
- (d) Glycerine

21. Which of the following compound is most ionic compound ?

- (A) LiCl
- (B) NaCl
- (C) RbCl
- (D) CsCl

Space For Rough Work

22. Iron fillings were added to solution of copper sulphate. After about 10 minutes, it was observed that the colour of the solution changed and a layer was deposited on iron fillings. The colour of the solution and that of the coating would respectively be

(A) light green and reddish brown

(B) yellow and green

(C) brown and blue

(D) red and greenish blue.

23. The melting point temperature of the solid state of a substance is 40°C . The freezing point temperature of the liquid state of the same substance will be

(A) 35°C

(B) 40°C

(C) 45°C

(D) can't predict

24. What is the percentage of solution when 40g of common salt dissolved in 320 g of water?

(A) 12.5%

(B) 14.3%

(C) 11.1%

(D) 10%

25. Which of the following statements regarding non-metals is false?

(A) 11 non-metals are in gaseous state

(B) Gas carbon is a good conductor of heat and electricity

(C) The black material inside a pencil is metal lead

(D) All non-metal are non-sonorous in nature

26. The mode of nutrition found in fungi is:

(a) Parasitic nutrition

(b) Holozoic nutrition

(c) Autotrophic nutrition

(d) Saprotrophic nutrition

Space For Rough Work

27. Roots of the plants absorb water from the soil through the process of:

- (a) diffusion
- (b) transpiration
- (c) osmosis
- (d) None of these

28. The site of photosynthesis in the cells of a leaf is

- (a) chloroplast
- (b) mitochondria
- (c) cytoplasm
- (d) protoplasm

29. Movement of sunflower in accordance with the path of Sun is due to

- (a) Chemotropism
- (b) Geotropism
- (c) Phototropism
- (d) Hydrotropism

30. Which plant hormone promotes cell division?

- (a) Auxin
- (b) Gibberellin
- (c) Cytokinin
- (d) Abscisic acid

Space For Rough Work
