CBSE Sample Paper-01 (Unsolved)
SUMMATIVE ASSESSMENT –II
MATHEMATICS
Class – IX

Time allowed: 3 hours Maximum Marks: 90

General Instructions:

a) All questions are compulsory.
b) The question paper consists of 31 questions divided into five sections – A, B, C, D and E.
c) Section A contains 4 questions of 1 mark each which are multiple choice questions, Section B contains 6 questions of 2 marks each, Section C contains 8 questions of 3 marks each, Section D contains 10 questions of 4 marks each and Section E contains three OTBA questions of 3 mark, 3 mark and 4 mark.
d) Use of calculator is not permitted.

Section A

1. If $x=1$, then the value of y from the equation $\frac{4}{x}+\frac{3}{y}=5$ is

   (a) 1 (b) $\frac{1}{3}$ (c) 3 (d) -3

2. A chord of length 24 cm of a circle is at a distance of 5 cm from the centre. The radius of the circle is

   (a) 13 cm (b) 19 cm (c) 12 cm (d) 10 cm

3. The dimension of a box are 1 m, 80 cm and 50 cm. The area of its four walls is

   (a) 6000 cm^2 (b) 10000 cm^2 (c) 8000 cm^2 (d) 18000 cm^2

4. A coin is tossed 100 times with the following frequencies: Head: 75 and Tail: 25
   Find the probability of getting a head.

   (a) $\frac{1}{4}$ (b) 1 (c) $\frac{3}{4}$ (d) $\frac{1}{2}$

Section B

5. Draw the graph of $y=-2x$. Show that the point (2,-5) is not on the graph.
6. In the parallelogram ABCD, diagonal AC, and BD intersect at O and AC = 6.4 cm and BD = 5.8 cm. find the OA and OB.
7. AD is one of the median of a ΔABC and X is any point on AD. Show that $ar(\Delta ABX)=ar(\Delta ACX)$.
8. 50 circular plates, each of radius 7 cm and thickness $\frac{1}{2}$ cm, are placed one above another to form a solid right circular cylinder. Find the total surface area and the volume of the cylinder so formed.
9. Construct a triangle PQR in which PQ = 6 cm, PR = 5.5 cm and $\angle Q=60^0$. Draw the circum circle of ΔPQR Write steps of construction.

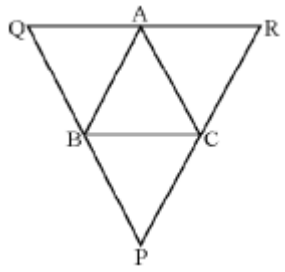
10. Find the mean of first 10 prime numbers?

Or

In a cricket match, batsman hits a boundary 6 times out of 40 balls played. Find the probability that he did not hit a boundary.

Section C

11. Plot the graph of each of the following equation using same pair of axes.
    (i) $y = 2x + 3$
    (ii) $y = 2x - \frac{3}{2}$
12. In the figure, through A, B, C lines RQ, PQ and PR have been drawn respectively parallel to sides BC, CA and AB of a ΔABC. Show that $BC = \frac{1}{2}QR$.



13. If two sides of a cyclic quadrilateral are parallel, prove that remaining two sides are equal and both diagonals are equal.
14. A rectangular water reservoir is 10.8 m by 3.75 m at the base. Water flows into it at the rate of 18 m/s through a pipe having the cross section 7.5 cm x 4.5 cm. find the height to which the water will rise in the reservoir in 30 minutes.
15. Prove that the tangents at the ends of a diameter of a circle are parallel.
16. Construct a triangle PQR in which QR = 8 cm, $\angle Q = 45^0$ and PQ – QR = 3.5 cm.
17. A hallow cylindrical copper pipe is 21 cm long. Its outer and inner diameter is 8 cm and 4 cm respectively. Find the volume of copper used in making the pipe.
18. A die is thrown 400 times, the frequency of outcomes 1,2,3,4,5 and 6 are noted in frequency distribution table shown below:
    Find the probability of occurrence of (a) an odd number (b) a prime number

Outcome	1	2	3	4	5	6
Frequency	75	60	65	70	68	62

Or

The king queen and jack of clubs are removed from a deck of 52 cards and then well shuffled. One card is selected from the remaining card. Find the probability of getting:

(a) A King
(b) 10 of Hearts
(c) A Diamond

Section D

19. Find at least three solutions for the following linear equation in two variables:
$$2x+5y=13$$
20. Kiran Loves dogs very much. She wish to make room for the street dogs of triangle shape in which BC = 40.5 m , $\angle B = 45^0$ and AB – AC = 20.5 m
    (a) Construct the triangle taking measurement of sides in proportion.
    (b) What ideas promote here
21. Prove that the angle between the two tangents drawn from an external point to a circle is supplementary to the angle subtended by the line-segment joining the points of contact at the centre.
22. A paper 22 cm long and 18 cm broad has been turned into the shape of a right circular cylinder in two ways. Find the difference of volumes of two cylinders so formed.
23. PQRS is a parallelogram and line segments PX, RY bisect the angles P and R respectively. Show that PX and RY are parallel.
24. Draw the graph of the equation $2(x+3)-5(y+1)=6$ and shade the triangle formed between the lone and axis.
25. The diagonals of a parallelogram ABCD intersect at a point O. through O a line is drawn to intersect AD at P and BC at Q. show that PQ divides the parallelogram into two parts of equal area.
26. If the non-parallel side of a Trapezium is equal, prove that it is cyclic.
27. Find
    (a) The lateral or curved surface area of a closed cylindrical petrol storage tank that is 4.2 m in diameter and 4.5 m high.
    (b) How much steel was actually used if $\frac{1}{12}$ of the steel actually used was wasted in making the tank?

    Or

    A vessel is of the shape of a cone of radius 3.5 cm and height 21 cm finds its volume.

28. The numbers 1 to 20 are put into the bag then, find the probability of the following:
    (a) Prime numbers
    (b) Even prime numbers
    (c) Even numbers

Section E

29. OTBA Question for 3 marks from Statistics. Material will be supplied later.
30. OTBA Question for 3 marks from Statistics. Material will be supplied later.
31. OTBA Question for 4 marks from Statistics. Material will be supplied later.