MDH INTERNATIONAL SCHOOL DWARKA

ANNUAL EXAMINATION (2023-24)

SUBJECT: MATHEMATICS

CLASS-VII

M.M:80

TIME: 3 Hrs.

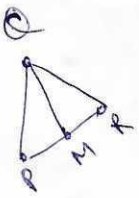
Instructions:

- ✓ All questions are compulsory.
- ✓ The question paper consists of 38 questions divided into 5 sections A, B, C, D and E.
- ✓ Section A comprises of 20 questions of 1 mark each.
- ✓ Section B comprises of 5 questions of 2 marks each.
- ✓ Section C comprises of 6 questions of 3 marks each.
- ✓ Section D comprises of 4 questions of 5 marks each.
- ✓ Section E comprises of 3 case base questions of 4 marks each.

SECTION – A (1 MARK EACH)

Choose the correct answer from the given options:

1. 2.30 and 2.3 are
   (a) Like Decimal (b) Unlike Decimals (c) Equal (d) None of these
2. The value which occurs most often in the given data is:
   (a) Mode (b) Range (c) Median (d) Mean
3. A triangle having none of its sides equal is
   (a) Equilateral (b) Scalene (c) Right-angled (d) Isosceles
4. 0.75 is equal to
   (a) 75 percent (b) 7.5 percent (c) $\frac{7}{5}$ percent (d) None of these
5. If the side of a square is doubled, it's perimeter is:
   (a) Halved. (b) Remains same (c) Doubled (d) None of these
6. The reciprocal of $(-\frac{3}{7})^2$
   (a) $(\frac{7}{3})^2$ (b) $(\frac{-3}{7})^2$ (c) $(\frac{-7}{3})^2$ (d) 1
7. $x^2 - 2xy + xy$ is a:
   (a) Monomial (b) Binomial (c)Trinomial (d) None of these
8. The difference between the maximum and minimum of data is called:
   (a) Frequency (b) data (c) mean (d) Range
9. In triangle PQR, M is the mid-point of PR, the median is:
   (a) PM (b) QM (c) RM (d) None of these
10. Which of the following is not equivalent to $\frac{3}{5}$
    (a) $\frac{6}{10}$ (b) $\frac{4}{10}$ (c) $\frac{12}{20}$ (d) $\frac{21}{35}$
11. Percent means a fraction with denominator:
    (a) 1 (b) 10 (c) 100 (d) 1000
12. Reciprocal of zero is:
    (a) 0 (b) 1 (c) does not exist (d) -1
13. How many mm^2 is in $1cm^2$?
    (a) 1000 (b) 10000 (c) 10 (d) 100



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14. A triangle has:
(a) 6 sides (b) 3 angles (c) both of them (d) None of these

15. Simplest form of $\frac{-15}{45}$ written as
(a) $\frac{-1}{3}$ (b) $\frac{-1}{-3}$ (c) $\frac{2}{3}$ (d) $\frac{1}{4}$

16. $(2345 \times 125)^0$ is equal to
(a) 0 (b) 1 (c) -1 (d) -2

17. The numerical coefficient of x^2 *in the expression* $x^3 - 7x^2 + 8x + 4$ *is*:
(a) 1 (b) -7 (c) 8 (d) 4

18. $\frac{2}{3} \times 1 \times \frac{6}{4}$ is equal to
(a) $\frac{3}{2}$ (b) $\frac{-2}{3}$ (c) 1 (d) 0

19. The like term for $-3x^2y$ *is*:
(a) $4x^2y$ (b) $5xy^2$ (c) $-3yx$ (d) $-3xy^2z$

20. $\frac{2}{3} \times (\frac{2}{3})^4 =$ _____.
(a) $(\frac{2}{3})^5$ (b) $(\frac{2}{3})^3$ (c) $(\frac{2}{3})^2$ (d) $(\frac{2}{3})^4$

SECTION-B (2 MARKS EACH)

21. Give four rational numbers equivalent to $\frac{-2}{7}$.

22. Find the base of a triangle whose area is 1256 mm^2 and height is 31.4 mm.

23. Divide: $2\frac{1}{3} \div \frac{3}{5}$ and express in mixed fraction.

24. Get an algebraic expression in the following cases using variables, constants and arithmetic operations:
(a) Number 5 added to three times the product of numbers m and n.
(b) 5 is subtracted from three times a number p.

25. Simplify: $(3^2 + 2^3) \times 5^0$

SECTION -C (3 MARKS EACH)

26. Is it possible to have a triangle with sides 3 cm, 6 cm and 7 cm? Give reasons.

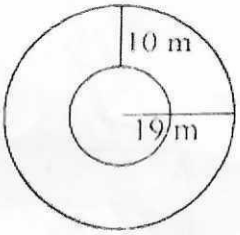
27. The weights (in kg.) of 15 students of a class are:
38, 42, 35, 37, 45, 50, 32, 43, 43, 40, 36, 38, 43, 38, 47
(i) Find the mode and median of this data.
(ii) Is there more than one mode?

28. If the angles of a triangle are in the ratio 2:3:4. Find the value of each angle.

29. (a) Find the sum: $\frac{-9}{10} + \frac{22}{15} + \frac{1}{30}$
(b) Find the product: $\frac{-6}{5} \times \frac{9}{11} \times \frac{65}{54}$

30. Simplify the expressions and find the value if x is equal to (-2).
$4(2x - 1) + 3x + 11$

31. Find the difference of circumferences of the inner and the outer circles, shown in the adjoining figure? (Take π 3.14)



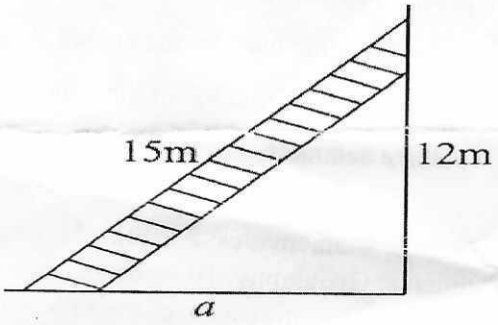
SECTION -D (5 MARKS EACH)

32. (a) The population of a city decreased from 25,000 to 24,500. Find the percentage decrease.

(b) Find the amount to be paid at the end of 3 years on a sum of ₹ 1,200 at 12% p.a.

33. (a) The lengths of two sides of a triangle are 12 cm and 15 cm. Between what two measures should the length of the third side fall?

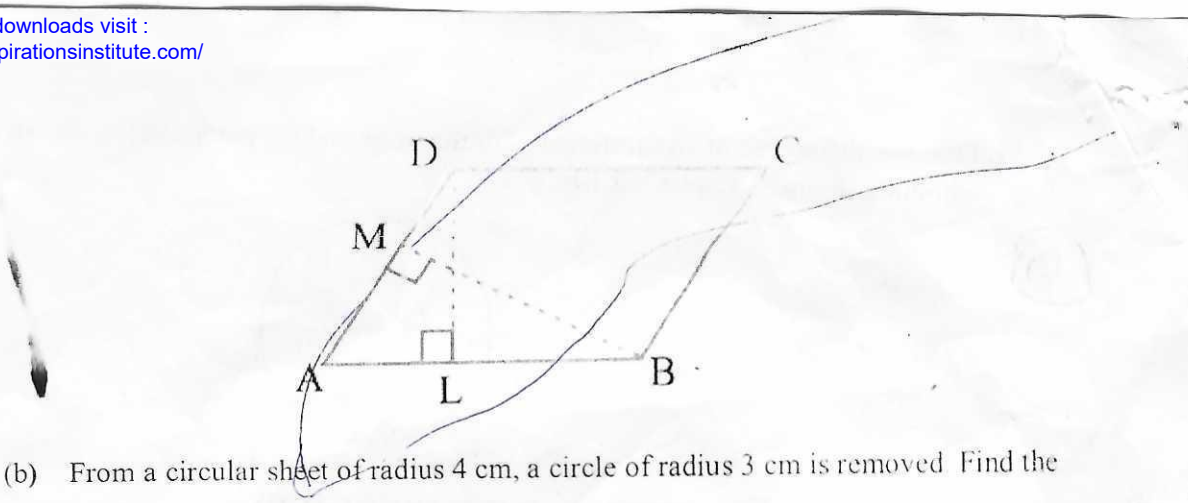
(b) A 15 m long ladder reached a window 12 m high from the ground on placing it against a wall at a distance a. Find the distance of the foot of the ladder from the wall.



34. The performance of a student in the 1st Term and 2nd Term is given. Draw a double bar graph by choosing an appropriate scale and answer the following:

Subject	English	Hindi	Math	Science	S. Science
1st Term (M.M. 100)	67	72	88	81	73
2nd Term (M.M. 100)	70	65	95	85	75

35. (a) DL and BM are the heights on sides AB and AD, respectively, of parallelogram ABCD (in given fig. If the area of the parallelogram is 1470 cm^2, AB = 35 cm and AD = 49 cm, find the length of BM and DL.



(b) From a circular sheet of radius 4 cm, a circle of radius 3 cm is removed. Find the area of the remaining sheet. (Take $\pi = 3.14$)

SECTION-E (4 MARKS EACH)

Case Study Based Questions:

36. Ten singers have come to perform in a programme. The total performance time is 3 hours. Two third of the total time is to be given to the singers to perform. All singers will get equal time to perform. There are four speakers to deliver speech. Forty-minutes time will be used by the anchor. The speakers will be allotted equal time for delivering speech. Based on above information, answer the following questions:

(i) What is the time given to each singer ?

(ii) What is the time given to two speakers ?

(iii) What is the fraction of the time used by the anchor ?

(iv) What is the fraction of the time used by all the singers and speakers?

37. A survey was conducted in a school to determine student's favourite subjects. The results are as follows:

History: 15 students; Mathematics: 25 students; English: 20 students
Science: 30 students; Geography: 10 students
Based on the above information answer the following questions:

(i) Which is the modal subject in the data collected from the survey?

(ii) What is the total number of students who participated in the survey?

(iii) Which subject has the minimum number of students liking it?

(iv) What is the median of the number of students for their favourite subjects?

38. A construction worker needs to build a triangular roof for a house. The design Specifies that one angle measures 90 degrees. The other two angles must be equal to each other.

(i) What type of triangle will the worker construct?

(ii) What are the measures of the other two angles in the triangle?

(iii) If all three angles in a triangle are unequal, what is the type of triangle?

(iv) What is the sum of the angles in any triangle?