D.A.V. PUBLIC SCHOOL, THANE
SESSION: 2022 – 2023
PERIODIC TEST – III (SET – A)
SUBJECT: MATHEMATICS

STD: VIII **Max Marks: 40**
Date: 16/12/2022 **Time: 1 ½ Hrs**

General Instructions:

1. This question paper contains two parts A and B.

Part – A:

- It consists of two Sections- I and II
- Section I: Question No. 1 to 6 are Objective type questions/Very Short answer type questions of 1 mark each. Internal choice is provided in 1 question.
- Section II: Question No.7 is a Case Study Based Question. Case study has 5 case based sub-parts. An examinee is to attempt any 4 out of 5 sub-parts.

Part – B:

- Section III: Question No 8 to 11 are Short Answer Type - I questions of 2 marks each.
- Section IV: Question No 12 to 15 are Short Answer Type - II questions of 3 marks each.
- Section V: Question No 16 to 17 are Long Answer Type questions of 5 marks each.

2. Part A and B have internal choices.
3. Internal choice is provided in 1 question of 2 marks, 1 question of 3 marks and 1 question of 5 marks.
4. Please write the serial no. of the question as per question paper before attempting the question.
5. In question of Constructions/Graphs, the drawing should be neat, clean and exactly as per given measurements. Use ruler and compass only.

Part – A (Section-I)

(Section I has 6 questions of 1 mark each. Internal choice is provided in 1 question.)

Q1. Solve for x: $\frac{3x+8}{x+1} = 4$

Q2. Two numbers are in the ratio 4: 3. If they differ by 18, find these numbers.

Q3. Verify Euler's formula for tetrahedron.

Q4. Find the height of a cuboid whose volume is 210 m^3 and base area is 30 m^2.

Q5. What is the probability of choosing a consonant from the set of English alphabets?

Q6. A survey of 250 people found that 175 of them played cricket. In a pie chart, what would be the sector angle of this group?

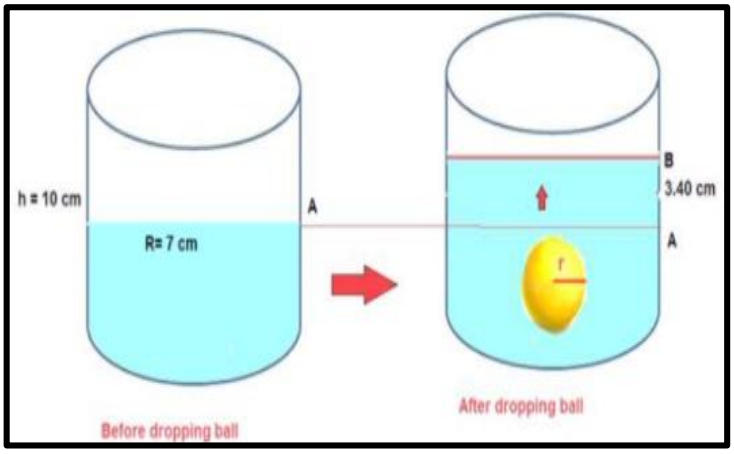
(OR)

The temperature (° C) of 5 days of a week is as follows: 38, 39.5, 33, 37, 32. Find the range.

(Section-II)

(Case study-based question is compulsory. Attempt any four sub-parts of the question. Each sub-part carries 1 mark.)

Q7. Rohan took a cylindrical container with radius R = 7 m and height 10 m to conduct an experiment. He filled the container almost half by water as shown in the left figure. Now he dropped the yellow ball in the container. Now he observed that the water level in the container raised from A to B as shown in the next figure. Answer the following questions.



(i) What is the volume of the cylinder?

a) 700 m^3 b) 500 m^3 c) 1540 m^3 d) 2000 m^3

(ii) What is the circumference of the base of the container?

a) 21 m b) 30 m c) 44 m d) 18 m

(iii) What is the curved surface area of the container?

a) 715 m^2 b) 440 m^2 c) 860 m^2 d) 320 m^2

(iv) What is the total surface area of the container?

a) 324 m^2 b) 748 m^2 c) 456 m^2 d) 168 m^2

(v) What will be the new volume of the container if height is halved?

a) 640 m^3 b) 490 m^3 c) 650 m^3 d) 770 m^3

Part – B (Section-III) (2 marks each)

(All questions are compulsory. In case of internal choices, attempt anyone.)

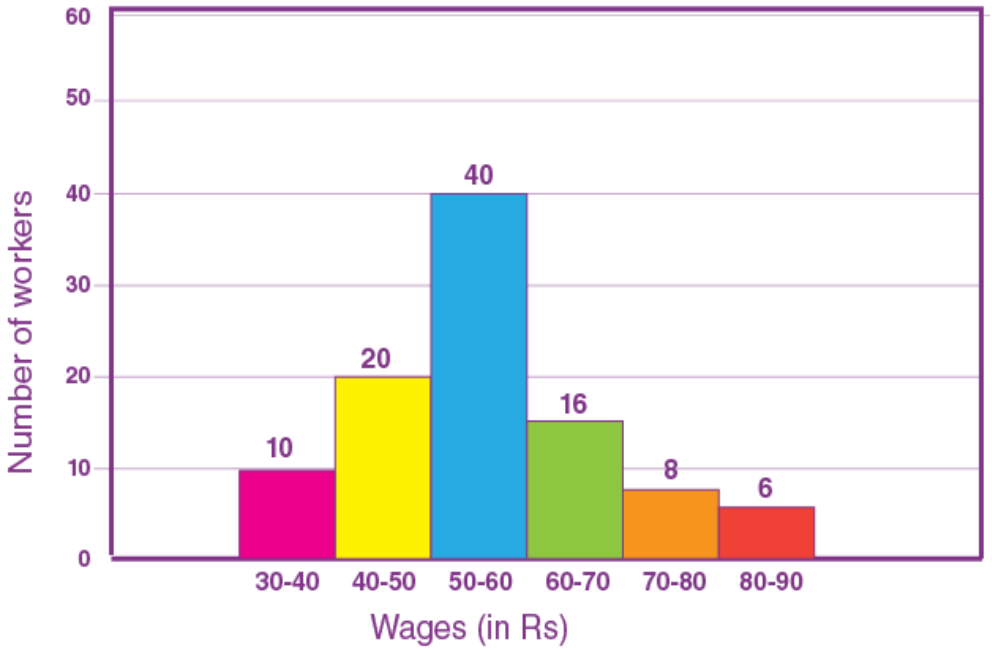
Q8. The width of a rectangle is $\frac{2}{3}$ of its length. If the perimeter is 90 m, find the dimensions of the rectangle.

Q9. The area of a trapezium is 480 cm^2, the distance between two parallel sides is 15 cm and one of the parallel sides is 20 cm. Find the other parallel side.

(OR)

Volume of a cube is 2197 m^3. Find its total surface area.

Q10. The given histogram shows the weekly wages of workers at a construction site. Answer the following questions:



(a) How many workers get wages of ₹ 60 - 70?

(b) What is the class mark for the class ₹ 70 - 80?

(c) How many workers get maximum wages?

(d) How many workers get wages less than ₹ 50

Q11. A card is drawn at random from pack of cards. Find the probability that card drawn is:

(i) A black king (iii) A queen

(ii) The seven of clubs (iv) A card of hearts

(Section-IV) (3 marks each)

(All questions are compulsory. In case of internal choices, attempt anyone.)

Q12. The present age of Sonu's mother is 3 times the age of Sonu. After 10 years the age of mother will be twice the age of Sonu. Find their present ages.

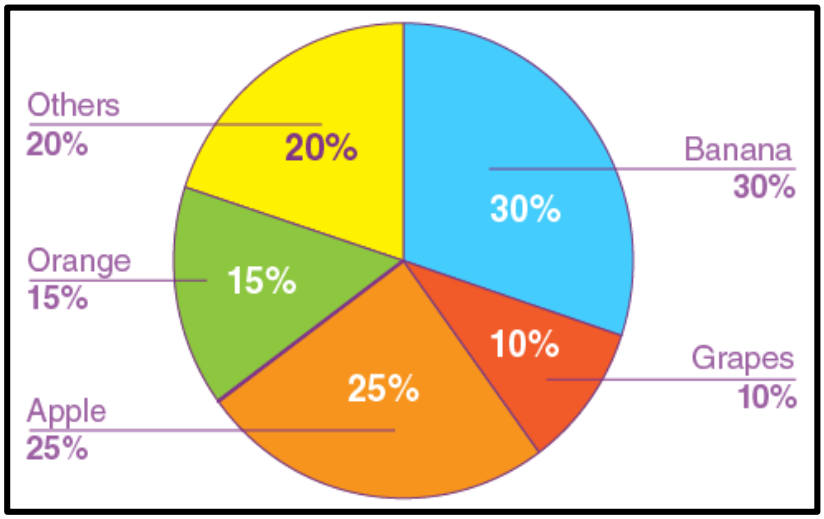
Q13. A motor boat goes downstream in a river and covers the distance between two points in 4 hours. It covers the distance upstream in 6 hours. If the speed of the stream is 4 km/hr., find the speed of the boat in still water.

(OR)

The numerator of a rational number is less than its denominator by 3. If the numerator increases by 3 times and the denominator is increased by 20, the new fraction becomes $\frac{1}{8}$. Find the original fraction.

Q14. Find the cost of painting 15 cylindrical pillars of a building at ₹ 25 per square metre, if the diameter of each pillar is 48 m and height is 7 m.

Q15. The below pie chart shows the sale of different fruits in a day for a shop:



(a) If a total of 1200 kg of fruits were sold in a day, calculate the amount of bananas sold (in kg).

(b) How many more kilograms of oranges are bought than grapes?

(c) Calculate the sector angle of apples.

(Section-V) (5 marks each)

(All questions are compulsory. In case of internal choices, attempt anyone.)

Q16. A swimming pool is 20 m in length, 15 m in breadth and 4 m in depth. Find the cost of cementing its walls and floor at the rate of ₹ 5 per sq. m. Also, find the water required to fill the swimming pool completely.

Q17. The following data shows the number of students opting different subjects in a college.

Subject	Commerce	Maths	Physics	Chemistry	Economics
No. of Students	40	30	50	40	80

Construct a pie-diagram to represent the above data.

(OR)

In a survey of 30 people, amount of money with them was found to be as follows:

114, 98, 100, 133, 98, 124, 91, 128, 109, 97, 121, 119, 126, 131, 136, 112, 106, 120, 109, 116, 95, 107,117, 135, 118, 125, 132, 129, 138, 101

Prepare a grouped frequency distribution table taking one of the class intervals as 90 - 100. Also draw a histogram.

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