(Govt. Recognised English Medium School)

Std.:- X
Name : $\qquad$ Vacation Assignment

Subject:- Maths
Date:-

## CH-13 Surface area and Volumes

## Q-1 Solve the following.

1. It two solid hemispheres of same base radius $r$ are joined , then find the curved surface area of solid.
2. A vessel is in the form of a hollow hemisphere mounted by a hollow cylinder. Then formula of inner surface area.
3. Cubical block edge (a) is equal to diameter of hemisphere. If hemisphere depression is cut out from one face of a cubical wooden block than determine the surface area of the remaining solid.
4. Find formula of material required for medicine capsule which has cylinder with two hemisphere stuck to each of its ends. Diameter of both are equal and height of cylinder is $h$.
5. Two cubes each of volume $125 \mathrm{~cm}^{3}$ are joined end to end. Find the surface area of the resulting cuboid. Answer: $\mathbf{2 5 0} \mathbf{c m}^{\mathbf{2}}$
Q - 2 Solve the following.
6. From a solid cylinder whose height is 15 cm and diameter 16 cm , a conical cavity of the same height and same diameter is hollowed out. Find the total surface area of the remaining solid. (Take $\pi=3.14$ ) Answer: $\mathbf{1 3 8 1 . 6} \mathbf{c m}^{2}$
7. A wooden article was made by scooping out a hemisphere of radius 7 cm from each end of a solid cylinder of height 10 cm and diameter 14 cm . Find total surface area of the article. Answer: $\mathbf{1 0 5 6} \mathbf{~ c m}^{2}$

8. A solid is composed of a cylinder with hemispherical ends. If whole length of solid is 100 cm , and diameter of hemispherical ends is 28 cm , find the cost of polishing the surface at the rate of ₹1.50 per sq.cm. Answer: ₹ 13200
9. A circus tent has a cylindrical shape surmounted by a conical roof. The radius of the conical base is 15 m . The heights of the cylindrical and conical portions are 4.2 m and 2.1 m respectively. Find the material required for the tent. Answer: 669.55m²
10. A solid iron pole consists of a cylinder of height 220 cm and base diameter 24 cm , which is surmounted by another cylinder of height 60 cm and radius 8 cm . Find the area to be coloured on the surface of pole and find the cost of colouring if rate is $₹ 0.5$ per $\mathrm{m}^{2}$.
Answer: 20044.4 cm $^{2}$ and ₹ 10022


## CH - 14 Statistics

## Q-1 Very short questions.

1. The formula $=\mathrm{a}+\mathrm{h}\left[\frac{\sum f_{i} u_{i}}{\sum f_{i}}\right]$ is used to determine:
(a) mean
(b) mode
(c) median
(d) all the three above
2. Consider the following distribution

| Marks obtained | Number of students |
| :---: | :---: |
| More than or equal to 0 | 63 |
| More than or equal to 10 | 58 |
| More than or equal to 20 | 55 |
| More than or equal to 30 | 51 |
| More than or equal to 40 | 48 |
| More than or equal to 50 | 42 |

The frequency of the class $30-40$ is :
(a) 51
(b) 48
(c) 4
(d) 3
3. Fill in the blanks: Mode $=($ $\qquad$ ) - 2 (Mean)
4. What is the modal class of the following frequency distribution?

| Classes | $0-10$ | $10-20$ | $20-30$ | $30-40$ | $40-50$ | $50-60$ |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| Frequencies | 5 | 8 | 13 | 38 | 30 | 4 |

5. Write the empirical relation between mean, mode and median.
6. Write the median class of the following distribution:

| Class | $0-10$ | $10-20$ | $20-30$ | $30-40$ | $40-50$ | $50-60$ | $60-70$ |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Frequency | 4 | 4 | 8 | 10 | 12 | 8 | 4 |

7. Find the median class of the following data:

| Marks | $0-10$ | $10-20$ | $20-30$ | $30-40$ | $40-50$ | $50-60$ |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| Frequencies | 8 | 10 | 12 | 22 | 30 | 18 |

8. What measure of central tendency is obtained graphically as the x-coordinate of the points of intersection of the two ogives for grouped data?
9. What is the median class of the following grouped data?

| Class | $128-135$ | $135-142$ | $142-149$ | $149-156$ | $156-163$ | $163-170$ |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| Frequency | 8 | 5 | 9 | 12 | 5 | 1 |

## Q - 2 Solve the following.

1. The following table shows the ages of the patients admitted in a hospital during a month:

| Age (in years) | $5-15$ | $15-25$ | $25-35$ | $35-45$ | $45-55$ | $55-65$ |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| Number of patients | 6 | 11 | 21 | 23 | 14 | 5 |

2. Find the mean, median and mode of the following data:

| Class | $0-20$ | $20-40$ | $40-60$ | $60-80$ | $80-100$ | $100-120$ | $120-140$ |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Frequency | 6 | 8 | 10 | 12 | 6 | 5 | 3 |

3. The median of the following data is 52.5 . Find the values of $x$ and $y$ if the total frequency is 100.

| Class <br> interval | $0-10$ | $10-20$ | $20-30$ | $30-40$ | $40-50$ | $50-60$ | $60-70$ | $70-80$ | $80-90$ | $90-100$ |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Frequency | 2 | 5 | X | 12 | 17 | 20 | Y | 9 | 7 | 4 |

4. The following table gives the daily income of 50 workers of a factory. Draw both types (" less than type and greater than type") ogive and determine the median of the data.

| Daily income (in ₹ ) | $100-120$ | $120-140$ | $140-160$ | $160-180$ | $180-200$ |
| :--- | :---: | :---: | :---: | :---: | :---: |
| No. of workers | 12 | 14 | 8 | 6 | 10 |

5. If the mean of the following distribution is 54 , find the value of $p$.

| Class | $0-20$ | $20-40$ | $40-60$ | $60-80$ | $80-100$ |
| :--- | :---: | :---: | :---: | :---: | :---: |
| Frequency | 7 | P | 10 | 9 | 13 |

6. Find the median of the following frequency distribution:

| Class interval | $0-10$ | $10-20$ | $20-30$ | $30-40$ | $40-50$ | $50-60$ | $60-70$ | Total |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Frequency | 4 | 4 | 7 | 10 | 12 | 8 | 5 | 50 |

## ANSWERS:

| (1) Mean $=35.375$ Years <br> Mode $=36.81$ Years | (2)Mean $=62.4$ <br> Mode $=65$, <br> Median $=61.66$ | (3) $x=9, y=15$ |
| :--- | :--- | :--- |
| (4) Median $=138.57$ | (5) $p=11$ | (6) 38.2 |

## CH - 15 PROBABILITY

## Q-1 Very short questions.

1. A letter is chosen at random from English alphabet. Find the probability that the letter chosen precedes ' $g$ '.
2. Cards each marked with one of the numbers $6,7,8, \ldots ., 15$ and placed in a box and mixed thoroughly. One card is drawn at random from the box. What is the probability of getting a card with number less than 10 ?
3. A card is drawn at random from a well shuffled deck of 52 cards. What is the probability of getting a black king?
4. What is the probability that two different friends have different birthdays? (Ignoring leap year)
5. Find the probability of obtaining 7 on a single toss of one die.
6. Cards bearing number 3 to 20 are placed in a bag and mixed thoroughly. A card is taken out from the bag at random. What is the probability that the number on the card taken out is an even number?
7. Two friends were born in the year 2000. What is the probability that they have the same birthday?

## Q-2 Solve the following.

1. Cards bearing numbers $1,3,5, \ldots ., 35$ are kept in a bag. A card is drawn at random from the bag. Find the probability of getting a card bearing.
(i) a prime number less than 15
(ii) a number divisible by 3 and 5 .
2. One card is drawn from a well shuffled deck of 52 cards. Find the probability of getting
(i) A king of red suit.
(ii) A queen of black suit.
(iii) A jack hearts.
(iv) A red face card.
3. A bag contains 5 red balls and some blue balls. If the probability of drawing a blue ball from the bag is thrice that of a red ball, find the number of blue balls in the bag.
4. Find the probability of getting 53 Sundays in a leap year.
5. Cards numbered 1 to 30 are put in a bag. A card is drawn at random from this bag. Find the probability that the number on the drawn card is :
(i) not divisible by 3.
(ii) a prime number greater than 7 .
(iii) not a perfect square number.
6. Rahim tosses two different coins simultaneously. Find the probability of getting at least one tail.
7. A card is drawn at random from a well shuffled pack of 52 playing cards. Find the probability of getting neither a red card nor a queen.
8. A single throw of a pair of different dice, what is the probability of getting:
(i) a prime number on each dice?
(ii) a total of 9 or 11
9. A number $x$ is selected at random from the numbers $1,2,3$ and 4 . Another number $y$ is selected at random from the numbers $1,4,9$, and 16 . Find the probability that product of x and y is less than 16 .

## ANSWERS:

| (1) (i) $\frac{1}{3}$, (ii) $\frac{1}{9}$ | (2) (i) $\frac{1}{26}$, (ii) $\frac{1}{26}$ (iii) $\frac{1}{52}$ (iv) $\frac{3}{26}$ | (3) 15 |
| :--- | :--- | :--- |
| (4) $-\frac{2}{7}$ | (5) (i) $\frac{2}{3}$, (ii) $\frac{1}{5}$ (iii) $\frac{5}{6}$ | (6) $\frac{3}{4}$ |
| (7) $\frac{6}{13}$ | (8) (i) $\frac{1}{4}$, (ii) $\frac{1}{6}$ | (9) $\frac{1}{2}$ |

## SCIENCE

Q. 1 Define:-

1) Combination Reaction
2) Exothermic Chemical
3) Reduction reaction
4) Decomposition reaction
5) Metallurgy
6) Covalent bond
7) Structural Isomer
8) Gangue
Q. 2 Answer briefly:-
9) Explain Thermit process.
10) What is a aqua regia? Which metals can be dissolved in it?
11) Give exceptions of non - metallic elements.
12) What is meant chemically by baking soda and baking powder? What happens if baking soda instead of baking powder is added in making cake.

## Q. 3 Give chemical formulas of

1) Barium Chloride
2) Calcium phosphate
3) Slaked lime
4) Glucose
5) Gypsum
6) Salphurous acid
7) Lead nitrate
8) Acetic acid
9) Zinc nitrate
10) Potassium Permanganate
11) Sodium acetate
12) Ethanal
13) Ethene
Q. 4 Draw structure of
14) $n$ - butane
15) Propanol
16) Propanoic acid
17) Butanone
18) Pentyhe
19) 1 Bromo pentane

## ENGLISH

## - Answer the following questions :

1. What do you understand by 'Apartheid' ?
2. What are twin obligations every man has in life ?
3. What is the greatest wealth of a country according to Nelson Mandela ?
4. Who were the persons sworn in on $10^{\text {th }}$ of May ? What did Mandela pledge to obey ?
5. What did the display of jets and military salute symbolize ?
6. What promise did Mandela make in the beginning of his oath taking speech ?
7. Where did the ceremonies take place ? What had it been for decades ?

## Creative Writing

1. Think about problems people all over the world face everyday. What is the most terrible problem among them ? Give your views in detail with relevant examples.
2. According to you, what is/are the main reason/reasons for day by day increasing temperature on earth ? How can we overcome it ? Give some of the precaution that can be taken.

## Project Work

1. Write down a poetry of any of the poets given below in the list. Also find out the maximum figures of speech from the poetry with explanation.
List : Robert, Frost, William Shakespeare, Maya Angelou, Sarojini Naidu, William Wordsworth, Rabindranath Tagore, Rudyard Kipling, Jayant Parmar.
Note :

- Poetry should be written on A3/A4 size any coloured paper/sheet.
- Use your art skills to give it a more impressive and decorative look.
- Selected poetry/poetries will be displayed on the notice board for appreciation.


## S.S.

## Answer the following questions:-

1) Cultural heritage of Gujarat - Explain in detail.
2) What is meant by resources? Describe its detailed usage.
3) Describe process of soil formation.
4) State importance of multipurpose project.
5) Explain about features of developing economy.

## * Prepare a project on Cultural heritage of India.

## NOTE:

Students have to prepare the HW assignment in different sheet and submit it on $6^{\text {th }}$ June 2019.

