

LOM 101:

Q.1.18, $15\frac{1}{2}, 13, \dots$ is an example of _____.

- 1) Harmonic progression. 2) Geometric progression.
3) Arithmetic progression. 4) logical progression.

Q.2. In an A.P the difference between two consecutive terms is constant- and it is denoted by-----.

- 1) $a + d$ 2) $a-d$ 3) a 4) d

Q.3. If the sum of 8th term and 9th term in an A.P is equal to sum of 15th, 16th and 17th term of the same A.P. Then find which term of the same A.P. is necessarily equal to zero?

- 1) t_{32} 2) t_{17} 3) t_{30} 4) t_{31}

Q.4. In an A.P., $a_1 = -5, a_n = 45$. If $s_n = 120$ then find n ?

- 1) 6 2) 7 3) 10 4) 5

Q.5. If the p^{th} term of an A.P. is 'q' and q^{th} term of the same AP is 'p', find $(p+q)$ th term.

- 1) -1 2) 1 3) $\frac{-5}{5}$ 4) 0

Q.6. Find the sum of first n even natural numbers.

- 1) $n(n+1)$ 2) $\frac{n(n+1)}{2}$ 3) n^2 4) $\frac{n^2(n+1)}{2}$

Q.7. Which term of the following A.P. is 632 ?

2, 11, 20, 29, -----

- 1) 71 2) 70 3) 72 4) 60

Q. 8. Given Arithmetic progression. $\sqrt{2}, \sqrt[3]{2}, \sqrt[5]{2}, \dots$ Find the 18th term of this progression.

- 1) ${}^{33}\sqrt{2}$ 2) ${}^{34}\sqrt{2}$ 3) ${}^{35}\sqrt{2}$ 4) ${}^{36}\sqrt{2}$

Q.9. After knee surgery, your trainer tells you to return to your jogging program slowly. He suggested jogging for 12 minutes for the first week. Each week thereafter, he suggests you increase that time by 6 minutes. How many weeks will it be before you are up to jogging 60 minutes per day?

- 1) 5 2) 9 3) 8 4) 12

Q.10. In the year 2017. Sheetal got a job with salary Rs.2,00,000 per year . Her employer agreed to give Rs.20,000 per year as increment. Find the annual salary of sheetal after to years?

- 1) Rs.2,20,000 2)Rs.2,18000 3) Rs.2,00,000 4) Rs.1,88,000

Q.11. If for any A.P. $d = 7$ then $t_{20} - t_{15} = \text{-----}$

- 1)25 2)42 3)5 4)35

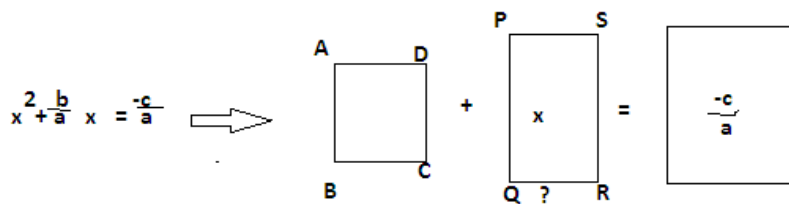
Q.12. Sum of first 55 terms in an A.P is 3300, Find 26th term?

- 1)120 2)60 3)114 4)55

(LOM 103 Competency – Solve day to day problem expressed in quarter.

Q.1- Standard form of a quadratic equation.

- 1) $ax^2 = b\sqrt{x} + c = 0$ 2) $ax^2 + \frac{b}{x} = c$
 3) $ax^4 + bx^2 + c = 0$ 4) $ax^2 + x = 0$



Q.2 -

- 1) $\frac{-q}{b}$ 2) $\frac{a}{b}$ 3) $\frac{b}{a}$ 4) $\frac{-b}{a}$

Q.3 If $\Delta < B$ then $\Delta = \text{-----}$

- 1) $\frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$ 2) $\frac{-b - \sqrt{b^2 + 4ac}}{2a}$ 3) $\frac{-b - \sqrt{b^2 - 4ac}}{2a}$ 4) $\frac{-b - \sqrt{-b^2 - 4ac}}{2a}$

Q.4 If $ax^2 + bx + c = 0$ has equal roots then $c = ?$

1) $\frac{-b}{2a}$

2) $\frac{b}{2a}$

3) $\frac{-b^2}{4a}$

4) $\frac{-b^2}{4a}$

Q.5 – Given quadratic equation is $2x^2-4x-3$ then find $(\alpha + \beta) \div (\alpha \times \beta) = \text{-----}$

1) $\frac{-6}{2}$

2) $\frac{-3}{2}$

3) $\frac{-4}{3}$

4) $\frac{-2}{3}$

Q.6- Quadratic equation with equal roots

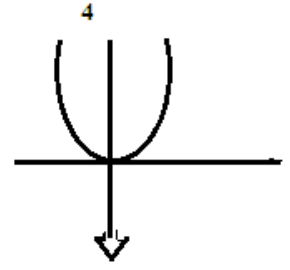
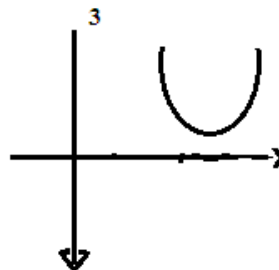
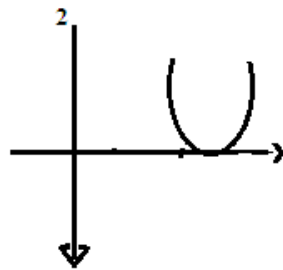
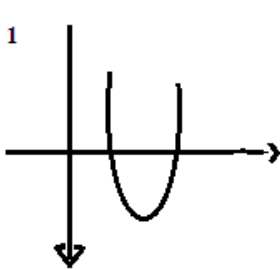
1) $x^2 - 5 = 0$

2) $x^2 - 1 = 0$

3) $x^2 - 10x + 25 = 0$

4) $x^2 + 5x + 6 = 0$

Q.7 – IF $b^2 < 4ac$ in a quadratic equation $ax^2 + bx + c = 0$, then shape of graph is



Competency- Solve day by day problems which can be expressed in the form of qua. Equation

Q.8 A man riding on a bicycle covers a distance of 60 Km in a direction of the wind and comes back to his original position in 8 hrs. If the speed of the wind is 10 Km / hr. find the speed of the bicycle.

1)-20

2) -5

3)20

4) 5

Q.9 A carpenter was tasked to do a wooden frame . The only instruction given to him was the Area is 48 it and its length is 2ft. Longer than its width. How should the carpenter find the Length and the width of the wooden frame. ?

1) L=-8, W=-6

2) L=-6, W=-8

3) L=6, W= 8

4) L=8, W= 6

LOM 104 : To decide the no of variables required to find solutions of word problems.

LOM 105 : Convert a word problem into an equation in two variables.

Q. 1. To draw $Y=X-2$ find Y if $X=7$ ----- solving the problem.

- 1) 9 2) 5 3) -9 4) -5

Q.2. Find the values of X and Y if $X + Y = 7$; $X-Y=5$.

- 1) (6, 1) 2) (6,-1) 3) (-6,1) 4) (1,6)

Q.3.What is the value of determinant 5 3

- 1) 41 2) 1 3) -1 4) -41

Q.4. are the graphs of equation $X+2Y = 4$ and which of the collaborating given equation are some?

- 1) $2X + Y = 4$ 2) $3X + 6Y = 12$ 3) $3X + 6Y = 15$ 4) $6X + 3Y = 4$

Q.5. Using cramer's rule to find out the value of D the column of----- is omitted.

- 1) $\frac{c1}{c2}$ 2) $\frac{a1}{a2}$ 3) $\frac{b1}{b2}$ 4) $\frac{d1}{d2}$

Q.6. If $x = \frac{Dx}{D}$ and $Y =$ -----

- 1) $\frac{D}{Dx}$ 2) $\frac{D}{Dy}$ 3) $\frac{Dy}{D}$ 4) $\frac{Dx}{Dy}$

Q.7. Sarthak's age(x) is less by 8 than double the age of sakshi-----frame the equation as -----.

- 1) $x=2y+8$ 2) $y=2x+8$ 3) $y=2x-8$ 4) $x=2y-8$

Q.8. $2x + y+8$

↓

$2y \rightarrow$ II I am rectangle $\leftarrow x+4 \therefore$ My parameter is -----

↑

$4x-y$

- 1)384 2)640 3)24 4)112

Q.9. A tow digit no. and the number with digits interchanged are $10y+x$ and -----

- 1) $10x+y$ 2) $x+y$ 3) $10(x+y)$ 4) $10x+10y$

Q.10. A boat travels 18 km upstream then time taken by boat to travel 18 km upstream is-----

(if speed of boat in still water be x km/hr & the speed of water current be y km/hr)

- 1) $\frac{18}{x-y}$ 2) $\frac{18}{x+y}$ 3) $x-y$ 4) $x+y$

Q.11. To form a three digit no. let the digit in hundred's place be x and that in units place be y . also the sum of extreme digits is less than the middle digit by unity. What is the no. at tens place.

- 1) $10(x+y-1)$ 2) $10(x+y+1)$ 3) $1(x+y)$ 4) $(x+y)$

Q.12. Sanjay has a fixed monthly salary. There is an yearly increment of a fixed amount in the salary. After 4 years his monthly salary 4500 & after 10 years his monthly salary became 5400. Find his original salary and yearly increment resp.

- 1) Rs.3900, Rs.150 2) Rs.150, Rs. 3900 3) Rs.150, Rs.150 4) Rs.3900, Rs.3900

LOM 106 - To understand the concept of savings and investments

Q. 1 - In India today which tax System is in practice for business ?

- 1) VAT 2) Excise Duty 3) CST 4) G.S.T.

Q. 2 – what do you know about GST?

- 1) Goods and service 3) General Service
2) General service tax 4) Goods state tax

Q.3 – All taxes are subsumed under GST. That is why GST is -----

- 1) one district one tax 2) one state one tax
3) one nation one tax 4) one universe one tax

Q. 4- GST is in effect from -----

- 1) 1st of January 2017 2) 1st of July 2017
3) 1st of July 2018 4) 16th of August 2016

Q.5 – Rate of GST on Commonly used items is -----

- 1) 0% 2) 5% 3) 12% 4) 18%

Q.6 – The rate of GST on Chocolate is ----- hence SGST on chocolate is 14%

- 1) 28% 2) 21% 3) 14% 4) 7%

Q.7 – On a certain article if rate of SGST is 9 % then what is the rate of CGST ?

- 1) 18% 2) 9% 3) 6% 4) 3%

Q. 8 – Ashok invested Rs. 6024 in the share of FV Rs. 10 when the market value was Rs. 60 she sold all the share at MV of Rs. 50 often taking 60% dividend. She paid 0.4% brokerage at each stage of transactions. What was the total gain or loss in this transaction?

- 1) Rs.444 2) Rs.555 3) Rs. 666 4) Rs.777

LOM 107 : Get familiar with financial transactions in business, profession etc.

Q. 1 : Which was the first country to implement the GST in 1954 ?

- 1) Japan 2) Canada 3) China 4) France.

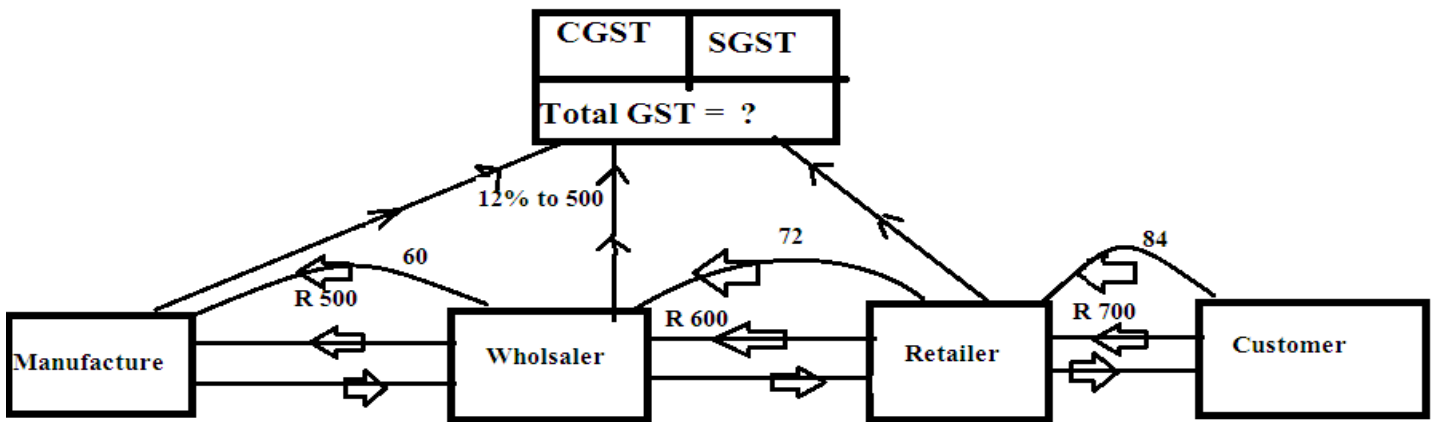
Q. 2 What items are not taxed under GST.

- 1) L.P.G Cylinder 2) Electricity. 3) Aerated water 4) Mobile phone

Q. 3 : Trading between GST in folder and consumer is known as _____

1. B2C 2.B2S 3.B2B 4. C2B

Q. 4 : Find GST =? 1)1



- 1) 42 2) 60 3) 72 4) 84

Q. 5 : Ex – Retailer to consumer

with GST	Particles	With GST
14784	Retailer cost of product	13200
1478	Profit 10%	1320
16262	Total Value	14520
2032	VAT 12.5%	NIL
NIL	GST 18%	2613
R 18294	Final Bill	?

- 1) Rs.2613 2) Rs.14520 3) Rs.17133 4) Rs.18294

Q. 6 If in the month of October the output tax of a trader is equal to the input tax, then what is his payable GST ?

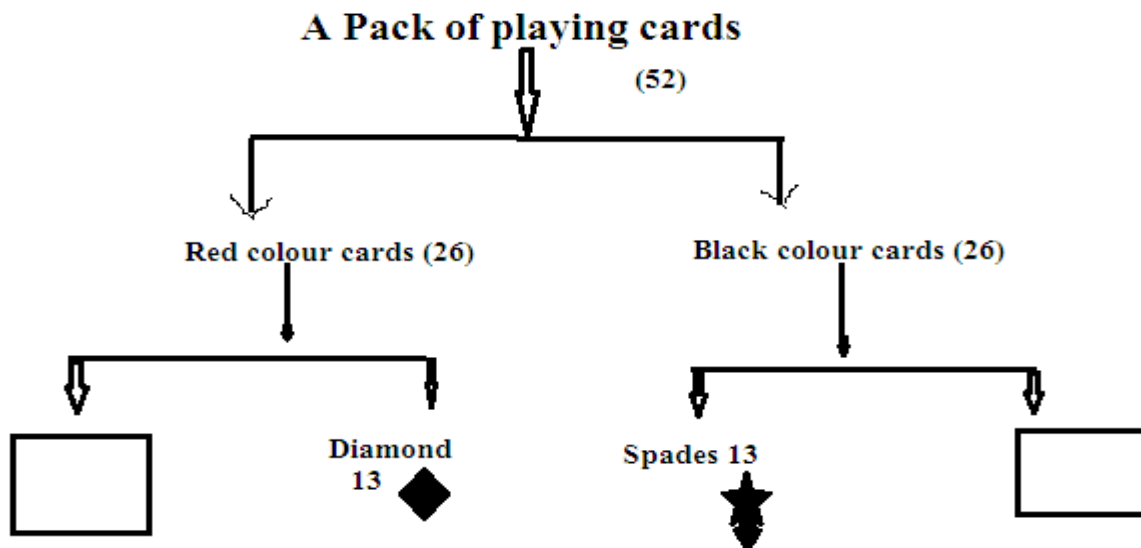
- 1) less than zero 2) greater than zero 3) Do not find 4) Zero

Q. 7 The marked value of 'a unit ' is called -----

- 1) ANV 2) NAV 3) VAN 4) NVV

LOM : 108 To use the concept of probability in games, voting etc.

Q.1-



- 1) Lungs 🫁 ; Home △
 2)) Kidneys 🫘 : hut ◇
 3) Hearts ♥ ; Clubs ♣
 4) Liver 🦏 ; Windows 🪟

Q. 2 In which of the following experiments possibility of expected outcome is more ?

1) Getting 1 on the upper face when a die is thrown.

2) Getting head by tossing a coin.

3) Getting any day a week

1) 1st experiment

2) 2nd experiment

3) 1st and 2nd experiment

4) 2nd and 3rd experiment

Q 3. One coin and one die are thrown simultaneously.

Write down the no of sample points.

1) 6

2) 12

3) 18

4) 36

Q. 4 Three coin are tossed the no. of sample space $n(S) =$

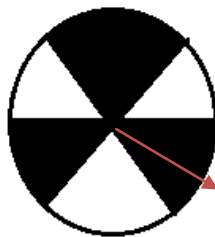
1) 2

2) 4

3) 6

4) 8

Q. 5 – The arrow is rotated and it stops randomly on the disc. On which color it may stop.



1) Black

2) White

3) Both colours

4) any one colour

Q. 6 Which no. can not represent a probability ?

1) $\frac{2}{3}$

2) 1.5

3) 15%

4) 0.7

Q.7 – If $n(A) = 2$, $P(A) = \frac{1}{5}$, then $n(S) = ?$

1) 10

2) $\frac{5}{2}$

3) $\frac{2}{5}$

4) $\frac{1}{3}$

Q. 8 - Basketball players Akash, Resham and Vasim were practicing the ball drop in the basket. The probabilities of success for Akash, Resham and Vasim are $\frac{4}{5}$, 0.83 and 58% resp. who has the greatest probability of success?

1) Resham

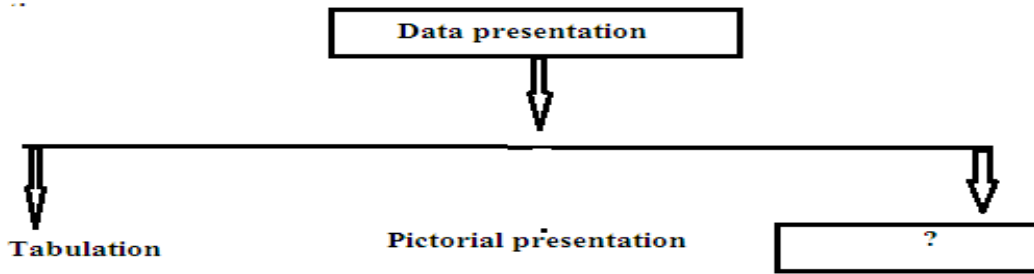
2) Vasim

3) Akash

4) Vasim and Akash

LOM : 109 (Competency -9) Present the collected data in the form of graphs or pictures deciding the suitable form of presentation.

Q.1 - Different methods of data presentation



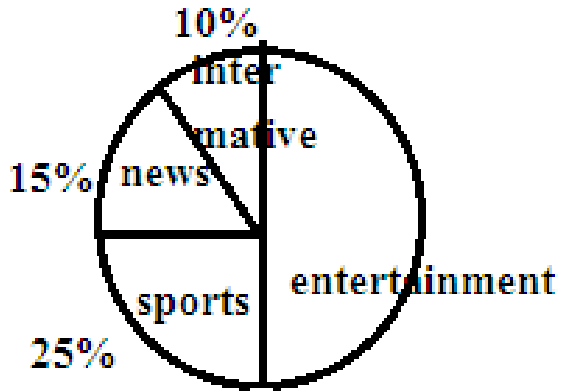
- 1) Pie diagram 2) Grouped 3) Percentage 4) Graphical method

Q. 2 – A kink mark  **shown between origin and the first class mean that -----**

- 1) There are only one observation up to first class.
- 2) There are two observation up to first class.
- 3) There are infinite observation up to first class
- 4) There are no observation up to first class.

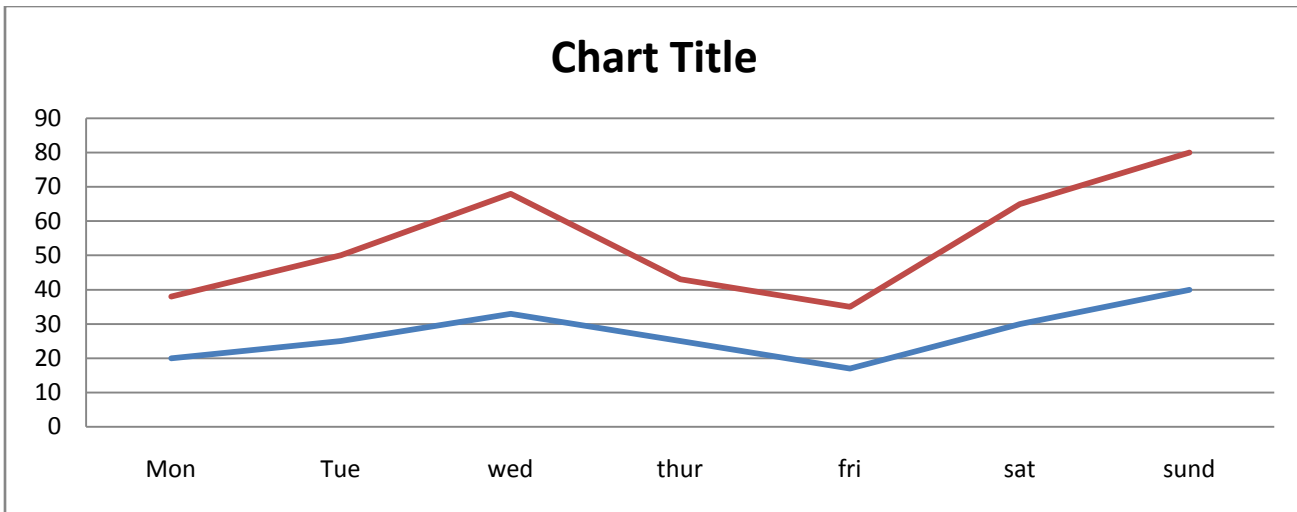
Q. 3 Given figure shows percentage of viewers watching different types of TV channels

Find the percentage of Viewers watching TV Channel entertainment



- 1) 50 2) 100 3) 310 4) 410

**Q . 4 The following graph shows temperature forecast and actual temperature for each day of a week -----
 ----forecast ----- Actual .**



On which day did the actual temperature differ the most from the forecast temperature?

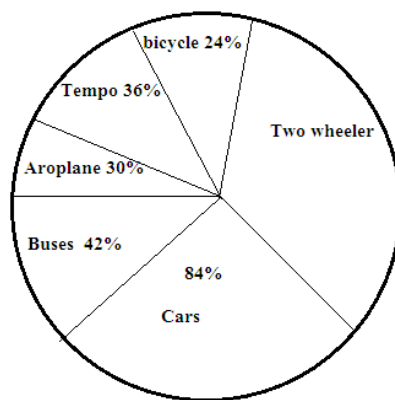
- 1) Thursday 2) Sunday 3) Thurs – Friday 4) Wednesday

Q. 5 – To draw a pie diagram, the whole circle is divided into ----- proportional to the components of the data.

- 1) Angle 2) Sectors 3) are 4) segment

Q. 6 Observe the adjacent pie diagram shows percentage of numbers of vehicle passing a signal in a town between 8 a.m. and 10 a.m.

Find the central angle of two-wheeler vehicles

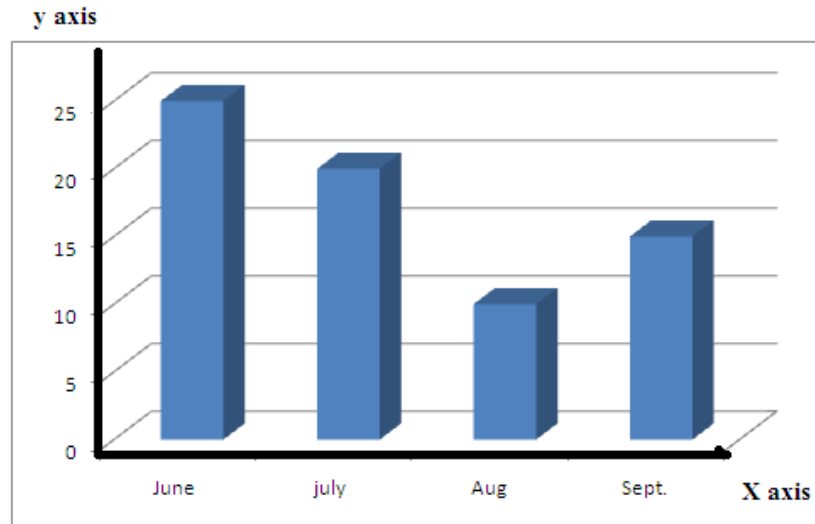


- 1) 360% 2) 156% 3) 144% 4) 144%

Q.7 - The measure of central angle = $\frac{\text{No. of scores in component}}{\text{Total No. of score}}$

- 1) 90 2) 180° 3) 270° 4) 360°

Q. 8- Identify type of chart



X axis – Monthly rainfall

Y axis- (rain) Average.

- 1) Histogram 2) Pie graph 3) Bar graph 4) Curve graph

LOM : 1010 (Competency -10) To find the mean, median and mode of a provided classified data .

Q. 1 – Cumulative frequencies in a grouped frequency table knowledge are useful to find---

- 1) Mean 2) Medium 3) Mode 4) Average

Q.2- Mean, medium, modes are the measures of -----

- 1) Central tendency 2) central angle 3) central Average 4) central frequency

Q.3 - The formula to find mean from a grouped frequency table is $X = A + \frac{\sum f_i u_i}{\sum f_i} \times h$. In this formula $u_i =$ --

- 1) $\frac{x_i + A}{g}$ 2) $(x_i - A)$ 3) $\frac{x_i - A}{g}$ 4) $(x_i + A)$

Q.4 -

Distance covered per liter (km)	12-14	14-16	16-18	18-20
No. of cars	11	12	20	7

The medium of the distances covered per liter show in the above data is the group –

- 1) 12-14 2) 14-16 3) 16-18 4) 18-20

Q.5

Production yield (kg/ya)	no fo farms	C.F.
50-55	2	46
55-60	8	44
60-65	12	36
65-70	24	24
	46	

Which type of cumulative frequency is given above ?

- 1) More than C.F. 2) less than C.F. 3) equal C.F. 4) minus C.F.

Q.6 Find the mean of the maximum temperatures .

Max.Temp	24-28	28-32	32-36	36-40	40-44
No.of towns	4	5	7	8	6

- 1) 1048⁰c 2) 34.9⁰c 3) 30⁰c 4) 24⁰c

Q.7. What is the medium of the marks?

Mar in exam	0-20	20-40	40-60	60-80	80-100
No.of students	4	20	30	40	6

- 1) $\frac{26}{30}$ 2) $\frac{52}{3}$ 3) $57 \frac{1}{3}$ 4) $57 \frac{1}{6}$

Q.8 – Find the mode of the volume of petrol filled in vehicles.

Petrol filled liter	1-3	4-6	7-9	10-12	13-15
No. of vehicle	33	40	27	18	12

- 1) 3.55 lit. 2) 4.55 lit. 3) 5.55 lit. 4) 6.55 lit.