

Instructions:

- 1) All questions are compulsory.
- 2) Mixing of sub questions are not allowed.
- 3) Write in clear and legible writing.

02/12/2022

Q I Attempt any **FOUR**: -

(20)

- A. Describe the following terms a. magnetic disk b. optical memory
- B. Write a short note on virtual memory.
- C. Differentiate between RISC and CISC processors.
- D. What are the different multi-processor systems. Explain in brief.
- E. Explain the Input output module in brief.
- F. What do you mean by direct memory access. Write a brief note on it.

Q II Attempt any **FOUR**: -

(20)

- A) What do you mean by Logic gates. Explain the different types of it.
- B) Write a brief note on the difference between Encoders and Decoders.
- C) Explain the different RAID levels.
- D) What do you mean by registers. Explain the different types of it in brief.
- E) Write a brief note on multicore computers.
- F) Explain the Karnaugh Map in brief.

Q III Attempt any **FOUR**: -

(20)

- A. Define counters and state the difference between synchronous and asynchronous counters.
- B. Write a short note on cache memory.
- C. Explain the De-morgans theorem in brief.
- D. What are the different laws of Boolean algebra. Write a brief note on it.
- E. Differentiate between sequential circuit and combinational circuit.
- F. Explain the latches and its types in brief with the help of diagram.

Q IV Attempt any **FIVE**: -

(15)

- A. Differentiate between half adder and full adder.
- B. Explain the different types of flip flops.
- C. State the difference between multiplexer and de-multiplexer.
- D. Explain the integrated circuit in brief.
- E. Write a program in microprocessor to transfer a 8 bit data.
- F. Differentiate between RAM and ROM.

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2) Figures to the right indicate full marks.
3) Illustrations, in-depth answers and diagrams will be appreciated.
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(a) Multiple Choice Questions (5M)

(i) ANSI stands for _____

- a) American National Standards Institute
- b) American National Standard Interface
- c) American Network Standard Interfacing
- d) American Network Security Interrupt

(ii) The decoded instruction is stored in _____

- a) IR b) PC c) Registers d) MDR

(iii) _____ is used to store data in registers.

- a) D flip flop b) JK flip flop c) RS flip flop d) none of these

(iv) The addressing mode/s, which uses the PC instead of a general purpose register is _____.

- a) Indexed with offset b) Relative c) direct d) both a and c
- v) The addressing mode which uses the PC instead of a general purpose register is _____.
- a) Indexed with offset b) Relative
- c) direct d) Both a) and c)

(b) Fill in the blanks

(single bus, 1, sequential, JK flip-flop, 5, RS flip-flop, 10, multiple bus)

i) Flip-flop is a basic element of _____ circuits.

ii) The usual BUS structure used to connect the I/O devices is _____.

iii) The minimum number of selection inputs required for selecting on out of 32 are _____

iv) Race condition may exist in _____ sequential circuits.

v) When 1101 is used to divide 100010010 the remainder is _____

(c) Short Answers (Attempt all)

- i) What are shift registers?
- ii) Design NOR gate using AND, OR, NOT gates.
- iii) Define SOP and POS terms.
- iv) How instructions of typical microprocessors are classified?
- v) What are uses of interrupts?

Q.2 Attempt the following (Any THREE) (Each of 5 Marks) (15M)

- (a) With help of neat diagram explain basic functional units of a computer.
- (b) How the memory and the processor can be connected? Explain with diagram
- (c) Perform with 2's complement arithmetic: $-34 + 17$
- d) List and explain in brief main features of fourth generation computers.
- e) List the steps needed to execute the machine instruction. Load R2, LOC
- f) Design half-adder circuit.

Q. 3 Attempt the following (Any THREE) (Each of 5Marks) (15M)

- (a) Compare RISC and CISC Instruction Sets.
- (b) What are addressing modes? Why different addressing modes are required?
- (c) Explain Big-Endian and Little-Endian Assignments.
- d) Compare RISC and CISC instruction sets.
- e) Explain De-Multiplexer
- f) What is an assembler? What is object program?

Q. 4 Attempt the following (Any THREE) (Each of 5Marks) (15M)

- a) List and explain with neat diagram main hardware components of processor.
- b) Consider the RISC Style Load instruction
Load RS, x(R7)
Examine the actions involved in fetching and executing the above instruction.
- c) Explain with neat diagram conceptual view of the hardware needed for computation.
- (d) Explain 4-stage organization with neat figure. What is the Data path?
- (e) Explain with example Sequence of actions needed to fetch and execute an unconditional branch instruction.
- (f) How the processor generates the control signals that cause these actions to take place in the correct sequence and at the right time?

Q.5 Attempt the following (Any THREE) (Each of 5Marks) (15M)

- (a) Convert the following pairs of decimal numbers to 4-bit 2's-complement numbers, and then perform addition and subtraction on each pair. Indicate whether or not overflow occurs for each case.
 - (a) 7 and 13
 - (b) -12 and 9
- (b) Write a RISC-style program for computing the dot product of two vectors.

(c) Derive the logic expressions for a circuit that compares two unsigned numbers:

$X = X_2X_1X_0$ and $Y = Y_2Y_1Y_0$ and generates three outputs: XGY , XEY , and XLY . One of these outputs is set to indicate that X is greater than, equal to, or less than Y, respectively.

(d) Design Full Adder Circuit

(e) What is the need of Multiplexer? Explain 4:1 Mux.

(f) Explain Instruction set Architecture

- N.B.
- 1) All questions are compulsory.
 - 2) Figures to the right indicate marks.
 - 3) Illustrations, in-depth answers and diagrams will be appreciated.
 - 4) Mixing of sub-questions is not allowed.

Q. 1 Attempt All (Each of 5Marks) (15M)

(a) Multiple Choice Questions (5M)

- 1 To add a new element to a list we use which command?

(a) list1.add(5)	(b) list1.append(5)
(c) list1.addLast(5)	(d) list1.addEnd(5)
- 2 AND, OR, NOT are operators.

(a) Logical Operator	(b) Bitwise Operator
(c) Conditional Operator	(d) Arithmetic Operator
- 3 What is the output of this expression, 3*1**3?

(a) 27	(b) 3
(c) 9	(d) 1

- 4 What will be the output of the following Python code?

```
x = ['ab', 'cd']
```

```
for i in x:
```

```
    x.append(i.upper())
```

```
print(x)
```

- | | |
|------------------------------|---------------------------|
| (a) ['AB', 'CD'] | (b) ['ab', 'cd'] |
| (c) ['ab', 'cd', 'AB', 'CD'] | (d) None of the mentioned |
- 5 Which of the following function converts a string to all uppercase ?

(a) Upper()	(b) Todecimal()
(c) Swapcase()	(d) Tostring()

(b) Fill in the blanks (5M)

- 1 IDLE in python stands for _____.
- 2 Python is _____ language.
- 3 The output of '123'+4 in python is _____.
- 4 _____ Keyword is used to define a function.
- 5 _____ statement is used when a statement is required syntactically but you do not want any command or code to execute.

(c) Short Answers (5M)

- 1 How do we represent empty list?
- 2 What is the use of del statement?

- 3 Explain the use of break statement.
- 4 Explain the use of dir() function.
- 5 Explain ** operator.

Q. 2 Attempt the following. (Any THREE) (Each of 5Marks) (15M)

- (a) What are the reasons for python being first programming language of learner?
- (b) What is the use of following arithmetic operators?
i) * ii) // iii) / iv) % v) +
- (c) What is the use of Math module? Write any 4 functions of it.
- (d) Discuss "list" data type in regards with the following points:
i) Declaration and initialization of variable of "list" data type
ii) Displaying second element of a list.
iii) Delete third element of a list.
iv) Display all elements starting from second position in a list.
v) Repeat list twice and display it.
- (e) Write a program to accept percentage from user.
If percentage is < 35 then print "Fail". If percentage >=35 and < 60 print "second class".
If percentage >=60 and < 75 print "First Class". If percentage >=75 print "Distinction".
- (f) Write a program in Python to find the greatest of three numbers.

Q. 3 Attempt the following. (Any THREE) (Each of 5Marks) (15M)

- (a) What is the use of if - elif condition? Explain with example.
- (b) Explain following points regarding function:
i) Definition /Use of function
ii) Syntax of function definition
iii) Example of function definition
- (c) Explain the use of range () in python along with an example.
- (d) When do we use continue statement? Explain with example.
- (e) Write a program in Python to Swap the values of two variables.
- (f) Write a program in Python to find the area of rhombus.

Q. 4 Attempt the following. (Any THREE) (Each of 5Marks) (15M)

- (a) Discuss anonymous function with example.
- (b) Write a short note on List Comprehension.
- (c) Explain the following terms of Object Oriented Programming :
(i) Class (ii) Methods
- (d) Discuss the concept "Dictionary".
- (e) Write a program in Python to find the input Year is a leap year or not.
- (f) Write a program in Python to print multiplication of table of Number. Take input from user.

Q. 5 Attempt the following. (Any THREE) (Each of 5Marks)

(15M)

- (a) What is variable? Why we use it? What does mean by implicit declaration of variables?
 - (b) Explain operator precedence with example.
 - (c) What do we mean by function recursion? Explain with example.
 - (d) Write a python program to take a string from user and count number of vowel present in it.
 - (e) Write a program in Python to Check Whether the number is Palindrome or not.
-

05/12/2022

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-

- Q.1 Attempt any FOUR (20)**
- A) Write a note on History of Linux Operating System.
 - B) Explain Linux architecture in detail.
 - C) Explain following commands
i)uname ii)wc iii)mkdir iv)pwd v)cat
 - D) List and explain different file types in Linux.
 - E) Explain regular expression in detail.
 - F) What is command aliases? Explain with example.
- Q.2 Attempt any FOUR (20)**
- A) Explain Linux security in detail.
 - B) Explain file permission in detail.
 - C) What are the layers of TCP/IP model? Explain in detail.
 - D) Write a note on following i)Telnet ii)FTP
 - E) Write a note on following i)ping ii)SSH
 - F) Write a note on vi editor.
- Q.3 Attempt any FOUR (20)**
- A) What is the use of backtick? Explain with an example.
 - B) What is the use of pipes? Explain with example.
 - C) Write a note on i) while ii) until and give suitable example.
 - D) Write a shell script to perform basic arithmetic operation.
 - E) Write a short note on Job control in Linux.
 - F) Write a short note on i)at ii)batch iii)cron table
- Q.4 Attempt any FIVE (15)**
- A) What are the features of Linux? Enlist various Linux distributions.
 - B) Write a note on MAN pages.
 - C) Explain sudo command in detail.
 - D) Explain in detail domain name system.
 - E) Explain output redirection with suitable example.
 - F) Explain various Linux signals.

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-

Q I Attempt any **FOUR** of the following (20)

- A) Write difference between Open Source Software and Public domain Software.
- B) Write Principles of Open Source Software.
- C) Explain Open Source Development Model.
- D) What is Internationalization? Write benefits, Advantages and disadvantages of Internationalization.
- E) Write about History of BSD?
- F) Write about Open Source Philosophies

Q II Attempt any **FOUR** of the following (20)

- A) Explain freedoms of open source software.
- B) Write note on open source hardware.
- C) How Open source is useful in education.
- D) Compare open source versus closed source software
- E) Write note on GitHub.
- F) Write note on Wikipedia.

Q III Attempt any **FOUR** of the following (20)

- A) Write about different versions of Android software.
- B) What is virtualization? Explain types of operating system.
- C) Write about GNU compiler.
- D) What is container? Explain Docker.
- E) IDE is useful for programming. Justify.
- F) Write note on LibreOffice.

Q IV Attempt any **FIVE** of the following (15)

- A) Explain bazar model.
- B) Write about Licenses of Open Source software.
- C) Write note on open source Debugger.
- D) What is LAMP? Write not on software used in LAMP.
- E) Write note on Drupal.
- F) Explain any Open Source Database.

Instructions:

DM

07/12/2022

- 1) All questions are compulsory.
- 2) Mixing of sub questions are not allowed.
- 3) Write in clear and legible writing.

Subject : DM

Q I Attempt any FOUR

(20)

- A) . If $f(x) = 2x + 3$ and $g(x) = 1 - x^2$. Find the composite function defined by $(f \circ g)(x)$ and $(g \circ f)(x)$. Verify whether that $(f \circ g)(x) = (g \circ f)(x)$.
- B) . Write the definition of relation of sets.
If $A = \{1,2,3\}$ and $R = \{(1,1), (1,2), (2,1), (2,2), (2,3), (3,1), (3,3)\}$. Find $M(R)$ and $[M(R)]^2$
- C) . Solve the following recurrence relation $a_r = 7a_{r-1} - 10a_{r-2}$ where $a_0 = 4, a_1 = 17$.
- D) . Let $A = \{1,2,3,3,4,5\}$. Define a relation R on A by $x R y$ if and only if $x+1=y$. Find the relation R and write down its adjacency matrix. Also draw diagram of R.
- E) . Verify whether the function $f: R \rightarrow R$ defined as $f(x) = 4x - 1$ for all $x \in R$ is
a) one-one b) onto.
- F) . Let $A = \{a, b, c, d, e\}$ and partial order relation R on A is defined as.
 $R = \{(a, a), (b, b), (c, c), (d, d), (e, e), (a, c), (c, d), (c, e), (a, d), (a, e), (b, c), (b, d), (b, e)\}$.
Find the Hasse diagram of Poset A.

Q II Attempt any FOUR

(20)

- A) . How many three letters combinations can be made from A, L and T.
(make tree diagram and solve by counting principle)
- B) . How many different license plates are there that involve 1,2 or 3 letters followed by 3 digits?
- C) . An investigator interviewed 100 interviewers to determine their skills, expert in C language, expert in Oracle, expert in V.B. Report occurred is are 10 are skilled in all three, 20 are skilled in C and V.B. 30 are skilled in V.B. and Oracle, 25 are skilled in C and Oracle, 12 are skilled in C Only, 5 are skilled in V.B. only and 8 are skilled in Oracle only. Then
(i) How many are skilled in at least one? (ii) How many are unskilled?
(iii) How many are skilled in C but not in V.B. (iv) How many are skilled in V.B. and oracle but not in C.

D) . In how many ways can 14 men partitioned into 6 teams where the first team has 3 members, the second team has 2 members, the third team has 3 members and the four, fifth and sixth teams each have 2 members?

E) . Each user on a computer system has a password which is six to seven characters long where each character is an upper case letter or a digit. Each password must contain at least one digit. How many possible passwords are there?

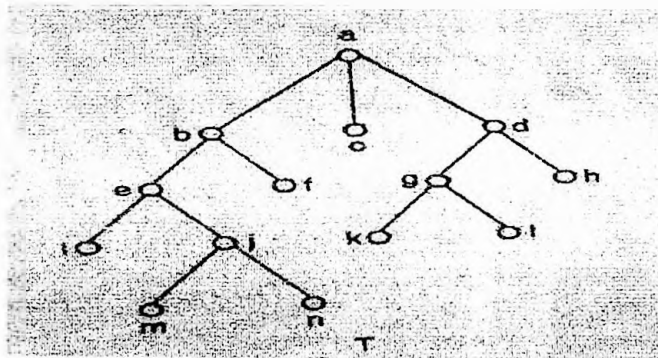
F) . How many ways are there to put 4 different employees into three indistinguishable offices, when each office can contain any number of employees.

Q III Attempt any **FOUR**

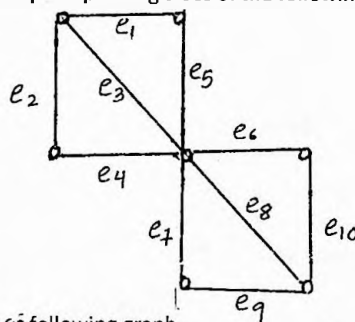
(20)

A) . Define null graph, complete graph with example.

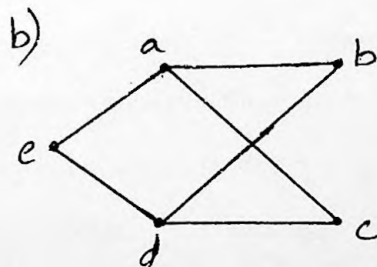
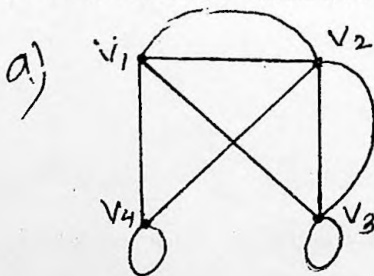
B) . find the pre-order traversal of the given rooted tree T as shown in the figure.



C) . Draw all possible non-isomorphic spanning trees of the following graph.



D) . find the adjacency matrix of following graph.



E) . write the properties of tree.

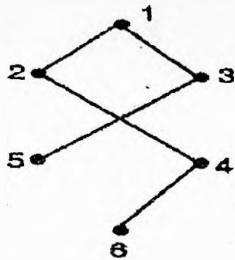
F) . write the definition of graph, loop, parallel edge and pendant vertex, Euler path.

Q IV Attempt any FIVE

(15)

A) . find the relation R defined on a set $A=\{2,3,4,5,6,7,8\}$ as xRy iff x/y .

B) . Find the partial order relation whose Hasse diagram is given as

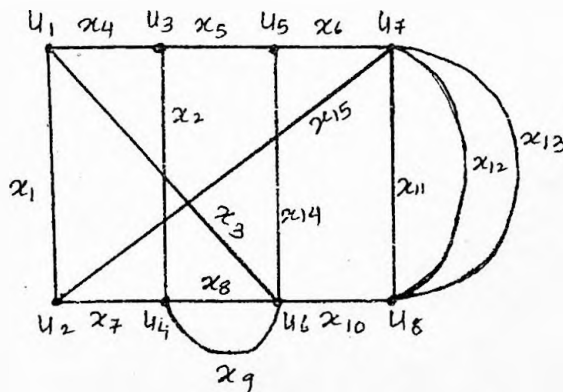


C) . Find the coefficient of $x^2y^3z^4$ in the $(ax + by + cz)^9$.

D) . How many ways are there to select a first prize, second prize and third prize winner from 100 Different people who have entered a contest?

E) . Draw all non-isomorphic binary trees of height 2.

F) . find the adjacency matrix of following graph.



— The End —

Descriptive Statistics

08/12/2022

Instructions:

- 1) All questions are compulsory.
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Subject: DS

Q I Attempt any **FOUR**

(20)

A). A random sample of 64 people were selected to take an IQ Test. After each person completed the test, they were assigned an IQ score based on their performance of the test. The test result are below

111	85	83	98	107	101	100	94
105	122	104	106	90	123	102	107
141	86	91	88	98	128	93	114
99	94	94	96	106	136	102	75
107	106	68	104	91	87	105	97
107	107	85	117	93	108	91	110
85	99	99	96	101	86	93	109
87	116	78	116	110	91	105	99

Prepare a stem and leaf plot for above data.

B) . The following is the distribution of marks of 60 children

Marks	10-19	20-29	30-39	40-49	50-59	60-69
No.of student	4	6	10	18	12	10

Obtai i)Class boundaries for all classes

ii)Class mar

iii)Width of the class intervals

iv)Less than cumulative frequency distribution

v)More than cumulative frequency distribution

C) . draw the histogram and ogive graph of the following data.

Income	20000-30000	30000-40000	40000-50000	50000-60000	60000-70000
No.of families	27	35	55	35	18

D) . Calculate the arithmetic mean of the following observations:

X	5	6	7	8	9	10	11
f	11	15	20	16	12	9	4

E) . It is given that in a moderately skewed distribution median=10 and mean=12. Using these values ,find the approximate value of mode.

F). Find the median of the following data.

Age group	Frequency (f_i)	Age group	Frequency (f_i)
0-10	40	40-50	72
10-20	53	50-60	49
20-30	58	60-70	36
30-40	64	70-80	25

Q II Attempt any **FOUR**

(20)

A) . Find the range and coefficient of range of the following data.

i) 63,89,98,125,79,108,117,6 ii) 43.5,13.6,18.9,38.4,61.4,29.

B) . Ryan's international academy wants to analyse how much percentage score marks of their students are spread out. The data is for the 25 students.

171	161	177	168	172	177	159	171	145	156	188	135	144
169	135	156	181	154	189	142.5	156.78	177	172	165	177	

Use the quartile deviation formula to find out the dispersion in % marks. Find range, coefficient of Range, coefficient of quartile deviation.

C) . In a class of students, 9 students scored 50 to 60 ,7 students 61 to 70, 9 students scored 71 to 85, 12 students scored 86 to 95 and 8 student scored 96 to 100 in the subject of mathematics. Estimate the standard deviation ?

Range	Frequency
50-60	9
61-70	7
71-85	9
86-95	12
96-100	8

D) . Find quartiles, IQR, QD and Coefficient of QD from table below.

Daily wages Rs	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80
No. of workers	10	15	28	30	30	25	15	16

E) . Find standard deviation with grouped data.

x	4	5	6	7	8
f	9	14	22	11	17

F) . If the range and the smallest value of a set of data are 36.8 and 13.4 respectively, then find the Largest value.

Q III Attempt any **FOUR**

(20)

A) . Write the difference between Correlation and regression

B) . Calculate the correlation coefficient for the following heights(inches) of father (x) and their Sons(y).

x	65	66	67	67	68	69	70	72
y	67	68	65	68	72	72	69	71

C) . from the following data, find

- 1) the mean value of x and y
- 2) the correlation coefficients between x and y
- 3) the standard deviation of y

If variance of x=9 and regression equation are $8x-10y+66=0$ and $40x-18y=214$.

D) . Write the types of Correlation.

E) . Calculate the correlation coefficient between x and y

X	1	3	4	6	8	9	11	12
y	1	2	4	4	5	7	8	9

F). Calculate Karl pearson's correlation coefficient from the given data

X	21	22	23	24	25	26	27
y	16	15	17	18	19	20	21

Q IV Attempt any FIVE

(15)

A) . draw the histogram of the following data.

Daily wages in 1000	No.of workers	Daily wages in 1000	No.of workers
400-500	14	800-900	32
500-600	18	900-1000	18
600-700	40	1000-1100	12
700-800	50	1100-1200	16

Total=200

B) . Find the median of the following data.

The table below gives the distance covered in in km to reach office by 26 people surveyed.

Distance in km	2-10	10-18	18-26	26-34	34-42
Number of people	44	88	55	44	55

C) . Find quartiles, IQR,QD and Coefficient of QD from table below.

Daily wages Rs	10-20	20-30	30-40	40-50	50-60	60-70	70-80
No.of workers	15	30	55	75	100	110	114

D). Calculate the standard deviation for the following observations.

Class interval	20-30	30-50	50-70	70-90	90-100
frequency	9	15	19	11	6

E) . State the properties of Covariance.

F). If $\bar{x} = 65$, $\bar{y} = 67$, $\sigma_x = 2.5$, $\sigma_y = 3.5$, $r = 0.8$

Find (1) lines of regression

(2) Estimate y when x=70

— The End —

CS old

08/12/2022

F.Y.B.Sc. (C.S.), SEM I
Descriptive Statistics and Introduction to Probability

Time $2\frac{1}{2}$ hrs

Marks: 75

Q.1) Answer the following Questions

Marks: 15

A) Choose the correct option

Marks: 5

- Which of the following is not type of graphical representation
 - Histogram
 - Frequency polygon
 - Frequency curve
 - cumulative frequency
- Range of the data 11, 12, 14, 18, 21, 24,
 - 11
 - 12
 - 13
 - 14
- Mean = 20 and Median = 18, so the curve is _____ skewed
 - Positively
 - negatively
 - both
 - none of the
- If $0.7 \leq r \leq 1$ for 2 variables X & Y then, X & Y have
 - strong positive correlation
 - weak positive correlation
 - moderate positive correlation
 - Negative correlation
- To determine the consistency of the data we have calculate
 - C.V.
 - S.D.
 - Q.D.
 - C.R.

B) State true or False.

Marks: 5

- Probability of an event can be negative.
- Standard deviation is measure central tendency.
- If two variable are independent then they are correlated.
- Co-efficient of Q.D. is relative measure of dispersion.
- Central moments are denote by μ_r'

C) Answer in one or two lines.

Marks: 5

- Define sample space.
- Find the median of the following data, 11, 14, 15, 16, 19, 15, 16, 18, 20.
- Give 2 examples of Continuous variable.
- State the formula for co-efficient of regression of y on x in terms of r, S.D. of x, S.D. OF y.
- Define negative correlation.

Q.2) Attempt any three of the following,

Marks: 15

A) Draw a frequency curve for the following data.

Height in cm	150-154	154-158	158-162	162-166	166-170
Number of men	10	12	20	10	8

B) Calculate the arithmetic mean and mode for following data

Savings in Rs	500-1000	1000-1500	1500-2000	2000-2500	2500-3000	3000-3500
Frequency	80	100	120	100	50	50

C) Calculate Q.D. and co-efficient of Q.D. for the following data.

Production in units	100-110	110-120	120-130	130-140	140-150
No. of workers	9	70	81	70	30

D) Calculate Karl Pearson's co-efficient of skewness, for following data.

Daily wages	400-500	500-600	600-700	700-800	800-900
No. of workers	8	16	20	17	3

E) Find the Karl Pearson's co-efficient of correlation where x is marks in maths and y is marks in statistics

X	61	68	68	64	65	70	63	62	64	65
Y	51	54	54	55	60	59	59	55	54	52

F) Two unbiased dice are rolled, find the probability that the sum is,

- Equal to one
- equal to 4
- less than 13

Q.3) Attempt any three of the following

Marks: 15

A) Write a short note on graphical representation

B) Calculate mode of the following data.

Class intervals	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90
frequency	5	7	20	26	18	15	8	3

C) Find Range and co-efficient of Range for the following data 30, 29.5, 34, 31, 33, 32, 36.5

[PTO]

D) Define kurtosis, Explain the types of kurtosis.

E) Calculate rank co-relation co-efficient from the following data representing marks in maths x and accountancy

X	15	11	7	9	8	5	13
y	12	10	5	7	6	4	9

F) If a fair coin is tossed three times, what is the probability of getting,
 i) three heads ii) exactly one head iii) at least one head

Q.4) Attempt any three of the following

Marks: 15

A) Locate the median & Q_1 graphically for

Weekly wages in Rs	40-45	45-50	50-55	55-60	65-70	75-80	70-75
No of workers	5	9	15	13	11	12	5

B) Calculate D_8 and P_{78} for the following data

Electricity bill (in '00Rs)	0-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40
No of students	2	8	12	23	25	20	9	1

C) Write a short note on dispersion.

D) Calculate β_1 and β_2 if $\mu_1' = 2$, $\mu_2' = 8$, $\mu_3' = 14$, $\mu_4' = 50$ with usual notations.

E) Estimate y when x = 60 using linear regression equation from the following data.

$$n = 10, \sum x = 678, \sum y = 240, \sum xy = 16342, \sum x^2 = 46344, \sum y^2 = 5782$$

F) Suppose A and B are independent events defined on sample space S, then,

- i) A and B' are independent
- ii) A' and B are independent
- iii) A' and B' are independent

Q.5) Attempt any three of the following.

Marks: 15

A) Represent the data in stem and leaf display.

3.6, 5.0, 3.8, 3.5, 3.0, 4.9, 3.2, 2.5, 4.4, 5.0, 3.7, 4.4, 3.3, 3.5, 2.7
 2.7, 5.7, 4.5, 3.9, 3.8, 2.8, 3.7, 4.5, 4.2, 2.6, 3.1, 5.2, 4.3, 2.2, 4.7

B) State Merits and demerits of median

C) Calculate combined Standard deviation

	Group I	Group II
No. of observations	70	90
Mean	75	82
Standard deviation	4	7

D) Calculate first four central moments

Weekly Hours worked	25	30	35	40	45	50	55
No of industries	0	2	4	26	47	15	6

E) Find the regression equation of x and y for the following data and hence estimate x when y=15

X	12	12	14	19	8	11	17
y	20	24	25	21	16	22	20

F) Write a short note on conditional probability.

Soft Skills

09/12/2022

Instructions:

- 1) All questions are **compulsory**.
 - 2) Mixing of sub questions are not allowed.
 - 3) Write in clear and legible writing.
-

Q I Attempt any **FOUR**

(20)

- A) Discuss the dual factor theory by Herzberg.
- B) Differentiate between Emotional Intelligence Quotient and Intelligence Quotient.
- C) Explain Maslow's Theory of needs.
- D) Write a short note on Positive Thinking.
- E) What are Soft-skills? Discuss its importance in professional life.
- F) Enumerate the importance of Soft-skills development.

Q II Attempt any **FOUR**

(20)

- A) Explain the difference between good communication and effective communication.
- B) Elaborate on the communication process.
- C) Why is feedback important in the communication process?
- D) What is non-verbal communication? explain its types.
- E) Write an unsolicited letter of application to LMN company. Applying for the post of Junior data analyst.
- F) Prepare a model resume for a person from the IT field with an assumption that the person is an fresher.

Q III Attempt any **FOUR**

(20)

- A) Explain the various Zones of Learning.
- B) Define Leadership and state the characteristics of a good leader.
- C) State the different Leadership Styles.
- D) What are the advantages of Team Building?
- E) Explain the Steps in Decision Making.
- F) What are the various techniques in making?

Q IV Attempt any **FIVE**

(15)

- A) Explain any three theories of ethics with an example.
- B) Explain the significance of Emotional Intelligence?
- C) Discuss the advantages and disadvantages of debates.
- D) State the advantages and disadvantages of group discussion.
- E) List out Ways to Cope with Stress.
- F) Elaborate on "The Six Thinking Hats Method".