

**COMPUTER NETWORKS ( BCA -402 )**

**Duration : 2hours**

**Max Marks : 50**

- Instructions :** 1) All questions are compulsory.  
2) Figures to the right indicate full marks.  
3) Start question on fresh page  
4) Total number of printed pages are 02

**Q.1 Answer the following ( 10 Marks )**

**A) What do you mean by the following (1X 5= 05 Marks )**

- |                       |               |              |
|-----------------------|---------------|--------------|
| i) Peer to peer Layer | ii)Interface  | iii)Protocol |
| iv) Topology          | v) Distortion |              |

**B) Name the following (1X 5= 05 Marks )**

- i) Transmission medium with highest speed.
- ii) Protocol for mapping logical address to physical address.
- iii) Port number with IP address.
- iv) Simultaneously held two way mode of data communication.
- v) Protocol that resolves host name to IP address in Application layer.

**Q.2 Answer the following (10 marks )**

**A. What is OSI model? How does it helps in understanding the computer communication?**

2

**B. Given data as 1 1 0 1 0 0 1 1 0 1 . Draw Manchester and differential Manchester waveform representing above data .**

3

**C. Write short note on the following Protocols a) DNS b) Bus Topology**

5

**Q.3 Answer the following**

**( 10 marks )**

- A. What are the reasons for implementing flow control mechanism in communication? 2
- B. Explain Stop and Wait ARQ Protocol for flow and error Control. 3
- C. Explain the use of following 5
- 1) Generator Polynomial      2) Piggybacking      3) Three way handshake
- 4) Router      5) Parity bit

**Q.4 Answer the following**

**(10 marks)**

- A. Explain the working of Address Resolution Protocol. 2
- B. For the Given IP 20.87.192.72. Find out the Class, Network Address and Default mask. 3
- C. Explain the Internet Protocol (IP) Datagram format used in Network Layer. 5

**Q.5 Answer the following :**

**( 10 marks )**

- A. What are the functions of transport layer? 2
- B. Give five points of differences between TCP /IP and UDP 3
- C. Explain the different types of High-level Data Link Control (HDLC) frame. 5

\*\*\*\*\*BEST OF LUCK\*\*\*\*\*

**BCA404 DATA ANALYSIS AND STATISTICAL TECHNIQUES**

Duration: 2 Hours

Total Marks: 50

**INSTRUCTIONS:**

- I. Figures to the right indicate maximum marks
- II. Start each answer on a fresh page.
- III. Non scientific, non programmable calculator allowed.
- IV. Graph paper will be provided on request

**1. Answer the following**

[5x2=10 marks]

**A. Match the following**

- |                        |   |
|------------------------|---|
| i. Arithmetic mean     | a. $l + \left(\frac{N}{2} - c\right) h/f$ |
| ii. Meadian            | b. $\frac{Q3-Q1}{2}$                      |
| iii. Weighted mean     | c. $\sqrt{\frac{\sum fx^2}{N} - x^2}$     |
| iv. Quartile deviation | d. largest value-smallest value           |
| v. Range               | e. $\frac{\sum xw}{\sum w}$               |

**B. Fill in the blanks**

- i. For an impossible event  $n(E) = \underline{\hspace{2cm}}$
- ii. If E is an event of sample space S and E' is the event that E does not happen then  $P(E') = \underline{\hspace{2cm}}$
- iii. If A and B are two independent events such that  $P(A) \neq 0$  and  $P(B) \neq 0$  then  $P(A' \cap B') = \underline{\hspace{2cm}}$
- iv. In a Poisson distribution if  $P(2) = P(3)$ , then the mean of the distribution is  $\underline{\hspace{2cm}}$
- v. Two events A and B of the sample space are said to be exhaustive if  $\underline{\hspace{2cm}}$

**2. Answer any two of the following**

[10 marks]

- A. Find all the three quartiles of the for the following data of marks out of 100 students obtained by 80 students

marks	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100
frequency	4	9	14	25	18	6	2	1	1	0

- B. Write down the Apriori Algorithm in Data Mining

- C. There are 5 main political parties. The following table gives the number of votes in lacs received by each one in 2 elections. Find the Karl Pearson's coefficient of correlation

party	I	II	III	IV	V
Past election	5	3	3	4	5
Present election	7	4	2	2	5

**3. Answer any two of the following**

**[10 marks]**

- A. A D.T.P operator claims that she can type a regular text at an average speed of 100 words per minute. In 36 trials, her average speed was 95 words per minute with deviation of 10 words. Is her claim justified? Use 1% l.o.s. (at 1% l.o.s  $z=2.58$ )
- B. In a certain city 10000 electric bulbs were used for street lighting. The average life of bulbs is 1000 hours with a standard deviation of 200 hours. Find the number of bulbs expected to fail
- In first 800 hours
  - Between 800 and 1200 hours

Z	1	2	3
P	0.3413	0.4772	0.4987

- C. Write a short note on

- Stratified sampling
- Simple random sampling

**4. Answer any two of the following**

**[10 marks]**

- A. Draw a less than and more than ogive for the data given below representing the distribution of balance amounts in bank accounts on March 2018

Amount	5000-6000	6000-7000	7000-8000	8000-9000	9000-10000
No. of bank accounts	25	42	55	35	11

- B. For the bivariate data, find

- Coefficient of regression
- Coefficient of correlation
- Equations of line of regression

x	3	4	9	10	12	13
y	6	3	1	2	2	1

- C. The average number of customers who appear at the counter of a bank in one minute is 2. Find the probability that in a given minute
- No customer appears
  - Almost 2 customers appear  
(take  $e^{-2}=0.135$ )

5. Answer any two of the following

[10 marks]

A. Calculate the mean deviation from the mean for the following data

Class interval	5-15	15-25	25-35	35-45	45-55	55-65
frequency	2	5	12	15	12	4

B. Two regression equations are given below

- Identify the regression lines and state the regression coefficient
- Find coefficient of correlation
- Mean of x and y

$$6x+5y=50 \text{ and } 10x+3y=62$$

C. A random sample of size 500 has sample proportion  $p=0.15$ . can we say that it is drawn from a population with proportion  $P=0.2$  at 5% l.o.s? (at 5% l.o.s  $z=1.96$ )

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**Vidya Vikas Mandal's**  
**Shree Damodar College of Commerce & Economics, Margao-Goa**  
**SY BCA, Semester IV, 1 Supplementary Examination, May/June 2019**  
**Sub: Management Functions (BCA403)**

**Duration: 2 hrs**

**Max Marks: 50 mks**

**Instructions:**

- 1 Write short notes on: (Any 5) *All questions are compulsory*
- 2 Start each new question on a fresh page
- 3 Figures to the right indicate maximum marks

**Q1. Write short notes on :- (Any 5)**

**(10 Mks)**

- a) Proactive Plans
- b) Horizontal Communication
- c) Informal Organisation Structure
- d) Single use Plans
- e) Expert Power of a Leader
- f) Routine Decisions
- g) Alderfer's ERG Theory

**Q2. A) State and explain the advantages of planning to the company.**

**(5 Mks)**

**B) Explain the advantages of MBO technique.**

**(5 Mks)**

**OR**

**X) Explain the need and importance of organising function.**

**(5 Mks)**

**Y) State and explain the advantages of decentralisation in an organisation.**

**(5 Mks)**

**Q3. A) Explain the qualities of an Ideal leader.**

**(5 Mks)**

**B) State and explain the leadership functions of a manager.**

**(5 Mks)**

**OR**

**X) Explain McGregor's Theory X and Theory Y Theory of Motivation.**

**(5 Mks)**

**Y) Explain the advantages of motivating the employees to the organisation.**

**(5 Mks)**

**Q4. A) Explain the advantages of decision making in an organisation.**

**(5 Mks)**

**B) State and explain the process of decision making.**

**(5 Mks)**

**OR**

**X) State and explain the process of controlling.**

**(5 Mks)**

**Y) Explain the importance of controlling function in an organisation.**

**(5 Mks)**

**Q5. A) Explain Written and Non-verbal communication in brief.**

**(5 Mks)**

**B) Discuss the process of communication.**

**(5 Mks)**

**OR**

**X) State and explain the barriers to communication.**

**(5 Mks)**

**Y) Highlight the disadvantages of centralisation.**

**(5 Mks)**

Vidya Vikas Mandals  
**Shree Damodar College of Commerce and Economics, Margao**  
**S.Y.B.C.A SEM IV,** Supplementary Examination, May/June 2019  
**Software Engineering(BCA-401)**

**Duration: 2 Hours**

**Total Marks: 50**

- Instructions:** 1) All Questions are **Compulsory**.  
2) Figures to the right indicate Full Marks.  
3) Start each new question on a fresh page

**Q.1 a) Define the following**

**(5x1 =5 )**

- i) Project Scheduling.
- ii) Reliability respect to a software.
- iii) Pair programming.
- iv) Prototyping.
- v) Daily Scrum and who are the people involved in it.

**b) Answer the following :**

**(5x1=5 )**

- i) Who draws the use case diagram in a live project environment?
- ii) Why are swimlanes used in Activity diagram?
- iii) What constitutes non-functional requirements?
- iv) What is specialization in class diagram? Draw the symbol to denote specialization in class diagram.
- v) List atleast 4 attributes of software.

**Q2 Answer the following:**

- a) Elaborate the importance of creating SRS documents. **(02)**
- b) Write a short note on the commonly used steps in development process. **(03)**
- c) Explain the spiral model of software development method along with diagram, strengths and weakness. **(05)**

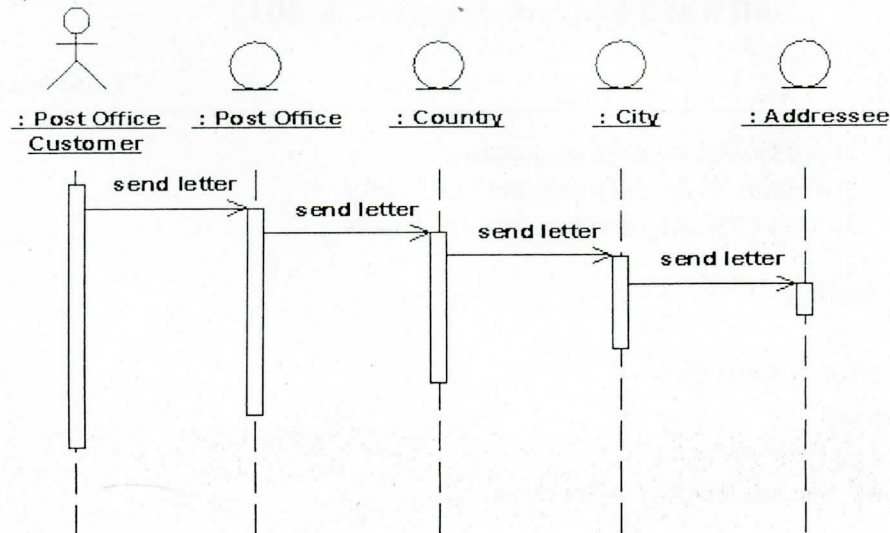
**Q3 Answer the following:**

- a) What is Requirement Elicitation? **(02)**
- b) Explain the types of diagrams you learnt in UML. **(03)**
- c) Draw a UML Use Case diagram for the detailed use case discussed: **(05)**

Customer browses catalog & selects items to buy. Customer goes to check out. Customer fills in shipping information (address, next-day or 3-day delivery) . System presents full pricing information . Customer fills in credit card information . System authorizes purchase. System confirms sale immediately. System sends confirming email to customer.

Q4) Answer the following :

a)

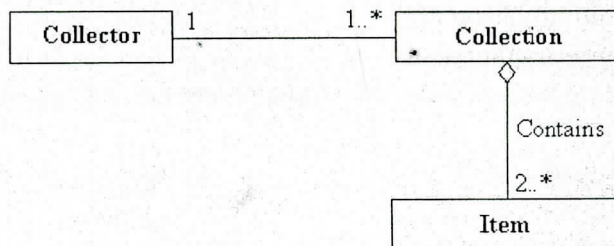


Write the scenario the above sequence diagram denotes.

(02)

b) Study the following class diagram and answer the question below:

(03)



- How many collections can a collector have?
- Can a collection be of more than one collector?
- How many items can a collection contain?

c) Give a state diagram that describes the process of passing a graduate course

(05)

as a set of concurrent activities. The process has as follows: To pass, a student has to attend all but two lectures, present to the class a paper she read, and complete a course project, due on the last day of the term. To give her presentation, the student is given a date by the instructor, prepares her presentation, and gives it on the assigned day. At any time, the student can drop the course. Make sure to define events, conditions, actions for transitions in your diagram, where appropriate.

5 Answer the following:

a) What is a Gantt chart and why is it used.

(02)

b) Software Engineering is a layered process. Elaborate the statement.

(03)

c) Write a note on Iterative model.

(05)