

Vidya Vikas Mandal's  
Shree Damodar College of Commerce & Economics, Margao-Goa  
S.Y. B. C. A., Semester IV, End Semester Examination, April 2019  
**COMPUTER NETWORKS (BCA 402)**

**Duration: 02 Hours**

**Total Marks: 50**

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**Instructions:** 1) All questions are compulsory  
2) Figures to the right indicate Full Marks  
3) Start each new question on fresh page  
4) Total number of printed pages is two.

**Q.1. Answer the following**

**10 Marks**

A) Define the following terms

5 x 1 = 5

- i) Transit time
- ii) Redundant bits
- iii) This-host address
- iv) Piggybacking
- v) Socket Address

B) Answer the following in one or two statements.

5 x 1 = 5

- i. Hub networking device works at which layer of OSI Model?
- ii. Which layer of TCP/IP model adds header as well trailer to the data before forwarding it to the next layer?
- iii. IEEE 802.11 is a standard Protocol for which form of network?
- iv. Mention any 2 functions of Application layer of TCP/IP Model.
- v. What is the port number assigned to SMTP and FTP Services?

**Q.2 Answer the following**

**10 Marks**

- A) Mention any two limitations of Repeater networking device. 02
- B) Give three points of difference between Fiber Optics and Satellite transmission media. 03
- C) What do you mean by line encoding? Use Manchester and Differential Manchester encoding to represent the signal for the data bit 011101011. 05

<b>Q.3 Answer the following</b>	<b>10 Marks</b>
A) Mention any four functionalities of Data Link Layer.	02
B) Define burst error. Find the keyword for the dataword 1001 using generator polynomial $x^3 + x + 1$ using CRC encoding.	03
C) Explain the working of Stop-and-Wait ARQ Protocol of Data Link Layer using flow diagram.	05
<b>Q.4 Answer the following</b>	<b>10 Marks</b>
A) Mention any 4 functions of Network layer.	02
B) Explain the functionality of RARP in Network layer.	03
C) A block of addresses is granted to a small organization. We know that one of the addresses is 205.16.37.39/28. Find	05
i) The first address in the block.	
ii) The last address for the block.	
iii) The number of addresses.	
iv) The network and host address of above given address.	
v) The address mask and the class.	
<b>Q.5. Answer the following</b>	<b>10 Marks</b>
A) Mention the layer of TCP/IP Model which is associated with	02
i) Physical address	
ii) Logical address	
iii) Port address	
iv) Specific address	
B) Explain connection establishment phase of TCP connection using three-way handshaking.	03
C) Explain SMTP and FTP protocols of Application layer of TCP/IP Model.	05

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**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]**

- i. A's chance of solving a problem is  $\frac{1}{3}$  and B's chance of solving it is  $\frac{1}{5}$ . What is the chance that both are able to solve the problem while trying independently?
- ii. Write any two advantages of simple random sampling
- iii. Explain types of correlation using scatter diagram
- iv. Find mean and median of -5,-3,0,-1,-2,-3
- v. Find  $P(A \cap B)$  if  $P(A) = \frac{2}{3}$ ,  $P(B/A) = \frac{3}{7}$

**2. Fill in the blanks [10 Marks]**

- i. 3 coins are tossed. The probability that at least one head turns up= \_\_\_\_\_
- ii. Median of raw data for odd observations is given by \_\_\_\_\_ observation
- iii. Range= \_\_\_\_\_
- iv. The relation between variance and standard deviation is \_\_\_\_\_
- v. If with increase in value of x, value of y also increases then x and y are \_\_\_\_\_ correlated
- vi. The relationship between coefficient of correlation and coefficient of correlation is \_\_\_\_\_
- vii. Two cards are drawn from a pack of 52 cards. The probability that one is a diamond and one is a heart is \_\_\_\_\_
- viii. If A and B are independent events then  $P(A/B) =$  \_\_\_\_\_
- ix. A hypothesis based on experience, or prior assumption or the one that is believed to be true is \_\_\_\_\_
- x. Area of the normal curve corresponding to type I error is \_\_\_\_\_

**3. Answer any two of the following****[10 marks]**

- A. For the following bivariate data, find
- Coefficient of regression
  - Coefficient of correlation
  - Equation of lines of regression

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

- B. A random sample size of 500 has sample proportion of  $p=0.15$ . can we say that it is drawn from a population with proportion  $P=0.2$  at 5% l.o.s?
- C. The probability that a person will react to a drug is 0.001. out of 2000 individuals checked, find the probability that
- Exactly 3
  - More than 2 individuals get a reaction  
(take  $e^{-2}=0.135$ )

**4. Answer any two of the following****[10 marks]**

- A. Write a short note on
- Cluster sampling
  - Stratified sampling
- B. The following figures give the experience in years and commission in thousand Rs per month of 6 salesmen. Find the Karl Pearson's coefficient of correlation

Salesmen	A	B	C	D	E	F
Experience in years	3	2	3	4	1	2
Commission in thousand Rs	4	4	5	3	8	6

- C. Draw more than ogive for the following data

Marks	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80
No. of students	5	6	10	15	25	22	11	7

**5. Answer any two of the following****[10 marks]**

- A. The weekly wages of 1000 workers are normally distributed with mean Rs 900 and standard deviation Rs 50. Estimate the no. of workers whose weekly wages will be
- Between 900 and 1000
  - Between 800 and 1000
  - More than 1050
  - Less than 850



Z	1	2	3
P	0.3413	0.4772	0.4987

- B. The sales of two stores in a week are as follows. Find which of the stores has consistent sales.

weekdays	1	2	3	4	5	6
Store I sales in thousands	50	30	40	60	20	50
Store II sales in thousand	90	80	40	10	10	20

- C. In a partially destroyed laboratory record of correlation data, only following results are legible.

i. Variance of  $x=9$

ii. Regression equations are

$$8x - 10y + 66 = 0$$

$$40x - 18y = 214$$

Find mean of  $x$  and  $y$  and standard deviation of  $y$

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

**Duration: 2 hrs**

**Max Marks: 50 mks**

**Instructions:**

- 1 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) Strategic Plans
- b) Formal Organisation Structure
- c) Sources of Leadership
- d) Monetary Motivational Factors
- e) Problem Solving and Opportunity Decisions
- f) Upward Communication
- g) Structured and Unstructured Decisions

**Q2. A) State and explain the importance of planning in an organization.**

**(5 Mks)**

**B) Highlight the process of MBO.**

**(5 Mks)**

**OR**

**X) Explain the factors affecting Organising structure.**

**(5 Mks)**

**Y) Discuss the process of organising.**

**(5 Mks)**

**Q3. A) State and explain the powers of a leader.**

**(5 Mks)**

**B) Explain 3 Leadership Theories in brief.**

**(5 Mks)**

**OR**

**X) Explain Maslow's Theory of Motivation.**

**(5 Mks)**

**Y) Explain Herzberg's Dual Factor Theory of Motivation.**

**(5 Mks)**

**Q4. A) State and explain the process of Controlling.**

**(5 Mks)**

**B) Explain any 5 control techniques.**

**(5 Mks)**

**OR**

**X) Highlight the importance of decision making in an organisation.**

**(5 Mks)**

**Y) Explain the process of decision making.**

**(5 Mks)**

**Q5. A) Explain the process of communication.**

**(5 Mks)**

**B) Discuss the measures to overcome barriers to communication.**

**(5 Mks)**

**OR**

**X) State and explain the advantages of centralisation.**

**(5 Mks)**

**Y) Highlight the barriers to communication.**

**(5 Mks)**

**Vidya Vikas Mandals**  
**Shree Damodar College of Commerce & Economics, Margao, Goa**  
**S.Y.B.C.A, SEM IV, END SEMESTER EXAMINATION, APRIL 2019**  
**SOFTWARE ENGINEERING (BCA-401)**

Duration: 2 Hours

Total Marks: 50

**Instructions:** 1) All Questions are **Compulsory**.  
2) Figures to the right indicate maximum marks.  
3) Start each new question on a fresh page.  
4) Write assumptions wherever required & Support your answers with relevant diagrams.

**Q.1 Answer the following questions:**

**2 X 5 = 10 Marks**

- i) Dual role of a software.
- ii) Define functional and non-functional requirements.
- iii) Write two disadvantages of Waterfall model.
- iv) State two purposes of State chart diagram.
- v) State two importance of Software Requirement Specification (SRS).

**Q2) Answer the following questions:**

**(10 Marks)**

- A) Explain any two challenges of software engineering. **2 Marks**
- B) Explain Technical and Legal/Ethical Feasibility study. **3 Marks**
- C) Explain the different phases of Unified process model with diagram. **5 Marks**

**Q3) Answer the following questions:**

**(10 Marks)**

- A) State the characteristics of software. **2 Marks**
- B) In a sequence diagram, explain the alt and opt combined fragments with its notations. **3 Marks**
- C) Draw Usecase diagram for the following Canteen system: **5 Marks**

The objective of the canteen system is to automate all the activities of the canteen right from purchasing and to maintaining the kitchen. The system should maintain a detailed account of all provisions bought and food served at the canteen. Several inquiry facilities should also be provided to view expenses incurred, planned menus/cash payment. In short following are the list of facilities which should be provided with the system: list of items served with rates, daily menu preparation, daily transactions, availability of information on intranet for reports and inquiries, purchases and issues.



**Q4) Answer the following questions:****(10 Marks)**

- 1) Explain the different types of messages used in a sequence diagram. **2 Marks**
- 2) Define and give the graphical notation for State, Action and Transition with respect to State chart diagram. **3 Marks**
- 3) Draw Class diagram for the following system: **5 Marks**

Course ware management system can be used to manage courses and classes for an organization that specialize in providing training. The organization offers a variety of courses. Each course is made up of set of topics. Tutors in the organization are assigned courses to teach according to the area that is specialized in and their availability. The organization publishes and maintains a calendar of different courses and assign tutors. There is a group of Course Administrator in the organization to manage the courses including course content, assign courses to tutor and define the course schedule. The training organization aim to use the Course-ware Management System to get a better control and visibility to the management of courses as also to streamline the process of generating and managing the schedule of the different courses.

**Q5) Answer the following questions:****(10 Marks)**

- 1) What are the benefits of using Gantt chart? **2 Marks**
- 2) Draw Activity diagram for the following: **3 Marks**

The purchasing department handles purchase requests from other departments in the company. People in the company who initiate the original purchase request are the "customers" of the purchasing department. A case worker within the purchasing department receives that request and monitors it until it is ordered and received. Case workers process the requests for purchasing products under \$1,500, write a purchase order, and then send it to the approved vendor. Purchase requests over \$1,500 must first be sent out for a bid from the vendor that supplies the product. When the bids return, the case worker selects one bid. Then, the case worker writes a purchase order and sends it to the approved vendor.

- 3) Explain the different phases of Requirement Engineering Process. **5 Marks**



Timing: 2 Hours

Marks: 50

Instructions:

1. All Questions are compulsory.
2. Figures to the right indicate full marks.
3. Write each question on a fresh page.

**Q1.A. Read the following passage and summarize it in 40-50 words.**

(5 marks)

If you are faced with choosing a career you are certainly not alone. Although 'career confusion' is a common phenomenon it is no longer difficult to make effective career decisions. To select the right career path, it's important to first assess one's skills and interests, keeping in mind what you enjoy, what you are good at, what kind of personality you are and the values you hold. After taking a good look at yourself it becomes easier for you to decide on the direction you wish to take. Finding out what kinds of occupations are there would be the natural next step.

The world offers a plethora of opportunities. Once the decision is made regarding one's choice of career, it is important to develop a career plan. Information about the kind of training, education and skills needed to achieve the career goal can be easily gathered with some assistance. Speaking to career advisors and recruitment specialists and employers are all ways to find out job market information. It would also do well to check out resources on the Internet and in career centers. There are plenty of books that can provide useful information on choosing a career. These often help to get one thinking about the issues one needs to consider.

**Q2.A. Write a short paragraph on any one of the below given topics.**

(5 marks)

- a. The Person Who Always Inspires Me.
- b. Nepotism Is Not Just A Bollywood Problem.
- c. Life After Section 377

**Q3.A. a. Your college council is organizing an Intercollegiate One Minute Monologue Competition, draft a suitable notice to be put up on the college notice board. Give the necessary information of the event. (50-60 words).**

(5 marks)

OR

x. Your college council is organizing National level Robotics Workshop, draft a suitable notice to be put up on the college notice board. Give the necessary information of the event. (50-60 words).

Q4A.

18/9/19

(10 marks)

- a. Assuming that you are the Purchase Officer of Techno Solutions, Panaji – Goa. Place an order for the following items with the KamatElectronics, Aquem-Goa. (Draft a detailed order letter)

Particulars	Quantity
LCD Monitors	10
Air Conditioners	02
Coddles Phones	08
Printers	15
Ceiling Fans	15

OR

- x. State any FIVE points to be considered before drafting any order letters.

Q4.A.

(5 marks)

a.Draft an Email to your boss informing him about your inability to attend the upcoming meeting. Give a suitable reason for your absence.

OR

x.Youare the Manager of a business firm, send an email to all the employees informing them about the upcoming conference which will be organized about the company. (Write the necessary details including the distribution of work a, dress code etc.)

Q5.A.

(10 marks)

a.You are the Manager of Amax Groups of Companies, you had recently purchased 50,000 tons of cotton as raw material for your textile mill in Jaipur. The consignment was 20 days delayed by the seller and the quality was not up to the mark. Draft a letter to the seller asking them to investigate the matter and come up with a solution as soon as possible.

OR

x.Draft an Adjustment letter for the above-mentioned Claim letter.

Q5.B

(10 marks)

a. As a Secretary of your student's council draft an invitation inviting Mr. S.V. Bhat, to be the chief guest for the *National Robotics Seminar* which is to be held in your college. (Give the necessary details)

OR

x. With reference to the above-mentioned invitation letter draft either an acceptance *or* a decline letter.

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Pg.2.