

# BHM-2<sup>ND</sup> SEM

## SUB: MEDICAL RECORDS MANAGEMENT

### PAPER CODE: BHM(N) 201

- Describe the use of Medical Records for various users .Describe the medical records flow chart.
- What are hospital statistics? Why are they so important in a hospital? How do they help a hospital manager to assess the quality of services rendered by the hospital
- Describe the staffing of Medical Records Department with its location, layout and equipment required.
- Explain the process of filing & indexing.
- Characteristics of Good Medical Record.
- Write a short note about Consent.
- Write a short note about ALS
- Preservation of Medical Record.

## SUB: BIO STATISTICS

### PAPER CODE: BHM(N)-202

- Three coins are tossed. Find the probabilities of i) 0 head; ii) 1 head, 2 heads, 3 heads; iii) more than 1 head; iii) at least 1 head.
- Find the If there is a war every 15 years on the average, then find the probability that there will be no war in 25 years.
- The monthly profits in rupees of 100 shops are distributed as follows:

Profits per shop	0-100	100-200	200-300	300-400	400-500	500-600
No. of shops	12	18	27	20	17	6

Draw the histogram to the data and hence find the modal value.

- Prove that the standard deviation is independent of change of origin.
- Show that  $P(A \cap B) \leq P(A)$   $P(A \cup B) \leq P(A) + P(B)$
- If  $x_1$  and  $x_2$  are two positive values of a variate, prove that their geometric mean is equal to the geometric mean of their arithmetic and harmonic means.
- Construct a pie chart for the following data:  
Principal Exporting Countries of Cotton

(1,000 bales)-1955-56

U.S.A	India	Brazil	Egypt	Argentina
6,367	2,999	1,688	650	202

- Let the lines of regression concerning two variables  $x$  and  $y$  be given by  $y=32-x$  and  $x=13-0.25y$ . Obtain the values of the means and the correlation coefficient.

## SUB:MEDICAL TERMINOLOGY-II

### PAPER CODE:BHM(N)203

- Write a short note on ECG
- Concept of Lithotripsy
- Why is Lungs function test?
- State the different types of Cardiology test ,write down these manes(Any five)
- What is Dermatitis? Discus it's risk factors & write a short note on Eeczema

F. What is Vitiligo? Discuss its causes & Symptoms.

**SUB: MARKETING MANAGEMENT**  
**PAPER CODE: BHM(N) 204**

1. Write an exploratory note on the concept of product life cycle.
2. What do you mean by a new product? What are the steps involved in new product development? Why does a new product fail?
3. What is the importance of analyzing consumer buying behavior? Describe the consumer buying process with an example of your own.
4. SWOT analysis of a hospital
5. Sales promotion.
6. What is a positioning strategy? What are the different parameters on the basis of which you would like to develop positioning strategy for an urban hospital?
7. What is the importance of analyzing consumer buying behavior? Describe the consumer buying process with an example of your own.

**SUB:HEALTH INFORMATION SYSTEM**  
**PAPER CODE: BHM(N)-205**

- A. Describe the limitations of MIS. What is the advantage of waterfall model? Describe prototyping model.
- B. What is system analysis? What are its objectives? Discuss the various steps in a system analysis.
- C. What is Hospital Information System? What are the basic management cycles of a hospital? Discuss the different types of Hospital Information System in a hospital .
- D. "Information-A quality product". Discuss.
- E. Write a short note on E- Health.
- F. Describe the limitations of MIS.
- G. Write a short note on Tele-Medicine.
- H. Write a short note on HIS?
- I. What are the direct and indirect health impacts of improper HIS in a Hospital?

**BBA-2<sup>ND</sup> SEM**

**SUB:BUSSINESS COMMUNICATION**  
**PAPER CODE: BBA(N)-201**

- i) " Variety is the spice of the desert" . The quoted sentence is an example of :- a) Simile b) Metaphor c) Climax d) Fable
  - ii) "Do that good mischief" – Find out appropriate figure of speech used here. a) Hyperbole b) personification c) Oxymoron d) Parable
  - iii) **Time and Tide** waits for none. What is the meaning of this idiom? a) Course of time b) Opportunity c) Calendar d) Flow of river
  - iv) Write the synonyms of " ephemeral" – a) short-lived b) beautiful c) expressive d) Incessant
  - v) Interpersonal communication is communication among: a) Two or more person b) one or more person c) three or more person d) two people
2. Differentiate between verbal and non-verbal communication.
  3. What is communication? Discuss the importance of 7Cs for effective communication.

4. There have been constant complaints from your customers about late delivery of goods and shortage in the goods supplied. As head of the dispatch section you have been asked to look into the matter and draft a report with recommendation.
5. What are the essentials of good business writing?
6. How does language act as a barrier to effective communication?
7. Briefly discuss about the types of communication.
8. Define any one model of communication.
9. Suppose your class has decided to go for a picnic. Now write a letter to the owner of the bus service making enquiries.
10. Write a sales letter to promote the sales of: - Computer programming course. Prospect: college students.

## **SUB:-ADVANCED MATHEMATICS**

### **PAPER CODE:-BBA(N)-202**

1. Verify Euler's theorem for the function  $x^n \log \frac{y}{x}$

2. Prove that 
$$\begin{vmatrix} \frac{a^2+b^2}{c} & c & c \\ a & \frac{b^2+c^2}{c} & a \\ b & b & \frac{a^2+c^2}{c} \end{vmatrix} = 4abc .$$

3. Find  $A^{-1}$  if  $A = \begin{pmatrix} 2 & -2 \\ 4 & 1 \end{pmatrix}$ .

4. Evaluate  $\int \sec x \sqrt{\frac{(1-\sin x)^2}{1-\sin^2 x}} dx$ .

5. Evaluate  $\lim_{x \rightarrow 0} \frac{1-\cos x}{x^2}$ .

6. If  $ax^2 + 2hxy + by^2 = 1$  prove that  $\frac{d^2y}{dx^2} = \frac{h^2-ab}{(hx+by)^3}$ .

7. If  $f(x) = kx + 3, x \geq 1$   
 $= x^2 + k^2, x < 1$

If  $f(x)$  is continuous at  $x = 1$  find the value of  $k$ .

8. If  $u = \frac{y}{z} + \frac{z}{x} + \frac{x}{y}$  then prove that  $\frac{\partial u}{\partial x} + \frac{\partial u}{\partial y} + \frac{\partial u}{\partial z} = 0$ .

## **SUB:- ADVANCED STATISTICS**

### **PAPER CODE:-BBA(N)-203**

1. If A and B are independent events, then show that

$$\text{i) } \bar{A} \text{ and } \bar{B} \quad \text{ii) } A = \bar{B} \text{ and} \quad \text{iii) } \bar{A} = B .$$

2. The probability function of a random variable X is  $f(x) = k(x-1)(2-x)$  for  $1 \leq x \leq 2$ . Determine i) the value of  $k$  ii) the distribution function  $F(x)$ . iii)  $P(5/4 \leq X \leq 3/2)$

3. An urn contains 8 white balls and 3 red balls. If two balls are drawn at random, find the probability that: i) both are white ii) both are red. multiplied together. Find the probability that the product is 12.

4. The chance that a doctor will diagnose a certain disease correctly is 60%. The chance that a patient will die by his treatment after correct diagnosis is 40% and the chance of death by wrong diagnosis is 70%. A patient of the doctor who had the disease dies. What is the probability that the disease was diagnosed correctly?

5. If  $x_1, x_2, \dots, x_n$  is a random sample from an infinite population with variance  $\sigma^2$ , and  $\bar{x}$  is the sample mean, show that  $\sum_{i=1}^n \frac{(x_i - \bar{x})^2}{n}$  is a biased estimator of  $\sigma^2$ , but the bias becomes negligible for large  $n$ . Give an unbiased estimator of  $\sigma^2$  here.
6. Find the If there is a war every 15 years on the average, then find the probability that there will be no war in 25 years.
7. From the urn containing 3 white and 5 black balls, 4 balls are transferred into an empty urn. From the second urn 2 balls are drawn and they happened to be white. What is the probability that the third ball drawn from the same urn will be white?
8. A sample of 6500 crews is taken from large consignment and 75 are found to be defective. Estimate the percentage of defects of consignment and assign limits within which the percentage lies.
9. A manufacturer claimed that at least 90% of the components which he supplied confirm to specifications. A random sample of 200 components showed that only 164 are up to standard. Test his claim at 1% level of significance.

## **SUB:-ECONOMICS(MACRO)**

### **PAPER CODE:-BBA(N)-204**

1. Define Fiscal Policy. Explain the various methods of Fiscal Policies. State the limitations of Fiscal Policies.
2. Explain the concept of public finance. State the scope of public finance. What is the significance of it?
3. Define National Income. Give two difficulties in the measurement of National Income. 'National Income is the sum total of the value added in all economic enterprises belonging to the country' - explain.
4. Define International Trade. Mention any four advantages of International Trade. Do you feel that International Trade is the basic need of modern world? Justify your view point in the context of India
5. Give a short note on:
  - a) The Merchant
  - b) Different types of deficit
  - c) Exchange Bank

## **SUB:-INDIAN SOCIAL STRUCTURE AND BEHAVIOURAL SCIENCE**

### **PAPER CODE:-BBA(N)-205**

1. Explain the fundamental concepts of Psychoanalytical theory.
2. Define personality. Discuss the major determinants of personality. Difference between Type A and Type B personality.
3. Briefly explain Classical and Operant Conditioning theory of Learning.
4. Discuss the importance of family and peer groups as the agencies of socialization.
5. State the characteristics of Juvenile Delinquency in India.
6. What do you mean by society? Briefly mention the characteristics of a society. What are the types of society? What are the features of Industrial Society?
7. Social implications of age sex in India.

# **BCA- 2ND SEM**

## **SUB: COMPUTER ARCHITECTURE**

### **PAPER CODE: BCA(N)-201**

1. Discuss about Flynn's classification of parallel computers.
2. Define systolic array for parallel processing.
3. What is the function of reservation table in pipeline architecture system?
4. Define speed up. What is pipeline?
5. Suppose the time delays of the four stages of a pipeline are  $t_1=60$  ns ,  $t_2=50$  ns ,  $t_3= 90$  ns ,  $t_4= 80$  ns respectively and the interface latch has a delay  $t_l= 10$  ns , then
  - a) What would be maximum clock frequency of the above pipeline?
  - b) What is the maximum speed up of this pipeline over that of its non-pipeline counterpart?
6. Difference between WAR and RAW hazards.
7. Use 8bit 2's complement integer to perform  
 $-43 + (-13)$
8. What is meant by pipeline stall?

## **SUB: SOFTWARE ENGINEERING**

### **PAPER CODE: BCA(N)-202**

1. Describe Classical Waterfall Model.
2. Describe Iterative Waterfall Model.
3. Describe Prototyping model.
4. Describe Spiral model.
5. Describe Basic COCOMO Model.
6. Short note: Complete COCONO model.
7. Describe PERT Chart.
8. Describe Risk management.
9. Short note: Software Configuration management.
10. Write the software requirements specification.

## **SUB: DATA STRUCTURE WITH C**

### **PAPER CODE: BCA(N)-203**

1. What is Circular Queue? Write an algorithm to insert an element into a Circular queue.
2. What is complexity? What are the different types of complexity? What do you mean by algorithm?
3. Write down an algorithm for deleting a node from a single linked list.(first, middle position)
4. Explain the tower of Hanoi problem of recursion of 3 peg and 3 disks.
5. Write down the algorithm for Insertion sort.
6. a. Construct a binary tree with the following traversals and write the pre order traversal of the following.  
POST-Order- DCBGFEA  
IN-Order- BDCAFGE  
b. What is Hashing? How is collision problem solved in hashing?
- 7.a. Show the stages in growth of a 4 order B-tree when the following keys are inserted in the given order.  
74, 72, 19,84 , 51, 10, 35, 18, 60, 76, 58, 19, 45.  
b. Write a C – function to implement PUSH and POP operation in a Stack.
8. a.How B tree is different from binary tree?

b. Insert the following keys into a AVL tree.

64, 1, 44, 26,13,110,89,85,20

Then delete the following keys. 85,1

9. a. What are the advantages of circular queue over ordinary queue?

b. Explain Big O notation.

c. Write an algorithm to reverse the elements of a linked list.

d. Convert the following infix to postfix expression using Stack

$4+3*10/6+7-4/2+5^3$

10 .Write short notes on **any two** of the followings:

a. Breadth first search

b. Dequeue

c. BST

d. 2-D Array

## **SUB: ADVANCED MATHEMATICAL COMPUTATION**

### **PAPER CODE: BMN 201**

1. Solve:  $y + e^x + x \frac{dy}{dx} = 0$ .

2. Solve:  $\frac{dy}{dx} + \frac{\sin 2y}{x} = x^3 (\cos y)^2$

3. Show that  $W = \{(x, y, z) \in R^3 : x + 2y - z = 0, 2x - y + 3z = 0\}$  is a subspace of  $R^3$ . Find a basis of W and its dimension.

4. Show the sequence  $\{S_n\}$  where  $S_n = \frac{1}{1!} + \frac{1}{2!} + \frac{1}{3!} + \dots + \frac{1}{n!}$  is convergent.

5. Solve  $y(1 + xy^2) \frac{dy}{dx} = 1$ .

6. Find the nature of the roots of  $x^4 + qx^2 + rx - s = 0$  by Descartes's rule of signs (where q,r,s being positive).

7. Show that the set of rational numbers other than 1,  $Q'$  forms a group under the binary operation  $*$  defined by  $a*b = a + b - ab : a, b \in Q$ .

8. Show that the set of rational numbers other than 1,  $Q'$  forms a group under the binary operation  $*$  defined by  $a*b = a + b - ab : a, b \in Q$ .

## **SUB: ENGLISH LANGUAGE AND COMMUNICATION**

### **PAPER CODE: HUN 201**

1. Write down the difference between 'formal' and 'informal' communication.

2. What are meant by 'upward' and 'downward' communications? What are the limitations of 'upward' and 'downward' communications?

3. What is a 'memo'? Write some of its features.

4. Suppose you are the Purchase Manager of COMPUTECH Ltd. The company has opened a new branch which requires a number of personal computers & laptops. Write a letter to another company asking for supplying computers & laptops within a week.

5. You are the HR Manager of IBM Kolkata. Write an advertisement for the situation vacant column of local newspaper describing the person you want to operate as a supervisor.

6. Make a comparison between E-mail & Voice mail.

7. Your club has arranged for a free eye operation camp in your locality. Write a notice about it mentioning everything.

8. You are the Sales Manager of Apex Mattresses Ltd, New Delhi. Your company has purchased 200 mattresses from Steel co Furniture, Kolkata, but out of 200 mattresses 165 are damaged. Now write a letter to Steel co Furniture.

9. The SYMBIOSIS POLYTECHNIC at 46, N.S.C. Bose , Kolkata – 4 requires a Programme Designer for the institute. Write to the Director, applying for the post. Give your detailed resume.

10. “ Business letter is a silent ambassador of goodwill”. Explain the statement.

## **MCA- 2ND SEM**

### **SUB: DATA COMMUNICATION AND COMPUTER NETWORKS**

**PAPER CODE: MCA 201**

1. Compare between Optical fiber and Coaxial Cable?
2. Compare between Guided and Unguided media.
3. Write the function of Data Link Layer and Transport Layer?
4. Distinguish between Bus topology and Mesh topology.
5. Differentiate between Router and Switch.
6. Write short notes on FTP.
7. Describe CSMA/CA protocol.
8. Write short notes on Token Bus.
9. Write short notes on cyclic redundancy check.
10. Write short notes on OSI model

### **SUB: INFORMATION SYSTEMS AND ANALYSIS AND DESIGN**

**PAPER CODE: MCA 202**

1. What is System? System concepts: A foundation.
2. Components of an Information system. Describe with diagram.
3. What is prototype? Explain the different phase of the software development model in prototype is used?
4. What are the Information system resources?
5. Write down the data Resources.
6. Short note: Data flow with diagram.
7. Describe shortly about Information system activity.
8. Describe Categories of networks. (LAN, MAN and WAN)
9. Describe shortly about Software resources.
10. Short note: Data communication components.

### **SUB: DATA STRUCTURES WITH C**

**PAPER CODE: MCA 203**

1. Insert the following keys into a AVL tree.  
64, 1, 44, 26, 13,110,89,85,20  
Then delete the following keys. 85, 1
2. Explain DFS with suitable example
3. Define the following: Connected graph, Tree, linked list.
4. Write the algorithm for binary search.
5. Convert the following infix to postfix expression using Stack  
 $4+3*10/6+7-4/2+5^3$
6. Construct a tree from following  
INORDER: D B F E A G C L J H K

POSTORDER: D F E B G L J K H C A

7. Explain the tower of Hanoi problem of recursion of 3 peg and 3 disks
8. Show the stages in growth of a 4 order B-tree when the following keys are inserted in the given order.  
74, 72, 19, 84 , 51, 10, 35, 18, 60, 76, 58, 19, 45.
9. What is asymptotic notation? Define different notation associated with complexity.
10. Write the algorithm for Merge Sort.

## **SUB: DATABASE MANAGEMENT SYSTEM I**

### **PAPER CODE: MCA 204**

1. List the advantages of DBMS.
2. Draw and explain with diagram the DBMS architecture.
3. Difference between candidate key and alternate key.
4. Draw an ER diagram for a library management system.
5. Difference between primary key and secondary key.
6. What is DBA? How it is work?
7. With proper example explain – i) Generalization & ii) Aggregation.
8. Discuss the usefulness of ACID properties to ensure integrity during transaction process.
9. Briefly describe the 3-layer architecture of DBMS.
10. Consider a BANK database having customer, loan, account, employee and branch as entity types. Each banks of branch allows customers to open accounts and borrow loans. A customer can open more than one account and one account may also belong to one or more customers (joint account). Design an E-R diagram for the BANK database.

## **SUB: OBJECT ORIENTED PROGRAMMING WITH C++**

### **PAPER CODE: MCA 205**

1. Write a C++ program to check any character is vowel or consonant.
2. Write a C++ program to print the greater number among three numbers.
3. Write a C++ program to check any number is Palindrome number or not.
4. Write a C++ program to print the reverse number of any number. (e.g. reverse no. of 123 = 321).
5. Write a C++ program to print the pattern bellow

```
 *
 * * *
 * * * * *
 * * * * * * *
```
6. Write a C++ program to add two-dimensional matrix.
7. Write a C++ program to multiply two-dimensional matrix.
8. Write a C++ program to check any number is palindrome or not.
9. Write a C++ program to sort array in ascending order.
10. Write a C++ program to print the Fibonacci series.



# **MHA- 2ND SEM**

## **SUB: HOSPITAL SUPPORT SERVICES**

### **PAPER CODE: MHAN-201**

- A. Discuss the organizational and operational planning of a hospital radiology service.
- B. What is the significance of blood bank? Describe the function of blood bank.
- C. Give an overview about the importance of security services. Discuss about the methods of control.
- D. Discuss the organizational and operational planning of a hospital diet services.
- E. Define nursing services. Outline the function of nursing services. Describe the concept of ward management in relation of nursing care.
- F. Discuss the objective, organization, equipment's, and using department of CS.S.D.

## **SUB: MATERIAL MANAGEMENT**

### **PAPER CODE: MHAN-202**

- A. What is budgetary control? State the objectives of budgetary control.
- B. State the advantages of budgetary control.
- C. State the importance of purchasing.
- D. Stores management is an integral part of materials management". Explain the statement with requisite examples from hospital industry.
- E. Short note:-
  - i) EOQ
  - ii) VED
- F. What is vendor rating? On what parameters are vendors rated?
- G. Discuss 'Gantt Chart'. State the types of 'Gantt Chart'.

## **SUB: QUALITY MANAGEMENT**

### **PAPER CODE: MHAN-203**

- 1. Briefly discuss the major sections under ISO 9001:2000.
- 2. With examples substantiate how quality can be ensured in health care.
- 3. Define the concept of PDCA cycle.
- 4. Write down the application of quality in healthcare
- 5. NABL
- 6. Describe the accreditation process of NABH for hospitals.

## **SUB: HOSPITAL PLANNING**

### **PAPER CODE: MHAN-204**

- 1. Discuss about determination of building site.
- 2. Write a short note on regulation of land requirements.
- 3. Quality assurance in health care.
- 4. State the classification of various types of Hospitals.
- 5. Write a short note on Network analysis
- 6. Describe in sequential steps the stages of hospital planning

## **SUB: FINANCIAL MANAGEMENT I**

### **PAPER CODE: MHAN-205**

- A. What is HIS? Describe brief about physical facilities and operational planning of HIS Department. How can HIS be used in ia evaluating quality of care?
- B. What is the Medical unit? Describe the various methods of health care.
- C. Discuss the Advanced computer applications in the field of Health care.
- D. What are the different types of records and reports generated by MRD? Explain their uses. Why do you think hospital statistics are essential?
- E. Explain the qualification and job responsibilities of medical record officer.
- F. What is hospital information system? What are the basic management cycles of a hospital? Discuss the different types of hospital management system in a hospital.
- G. What is Census? Describe the components of a comprehensive health information system

## **SUB: RESEARCH METHODOLOGY AND QUANTITATIVE METHODS**

### **PAPER CODE: MHAN-206**

- 1. Relevance of research in corporate sector.
- 2. Population and the advantage of using sample instead of population in research.
- 3. Write a short note on depth interview as a data collection tool.
- 4. Explain the difference between research methods and research methodology.
- 5. Write a short note on Executive summary.
- 6. What should be considered as the characteristics of good research? Describe Descriptive Research Design in detail

## **BHM- 4TH SEM**

## **SUB:-EPIDEMIOLOGY & ANALYSIS OF HEALTH INFORMATION DATA**

### **PAPER CODE : BHMN-401**

- A. Define and classify vaccines.
- B. Describe the ways of control communicable disease.
- C. Disease spectrum.
- D. Describe the “Chort study”.
- E. Write a short note about Immunization hazards.
- F. Describe the “Levels of prevention”.

## **SUB:-SUPPORT , UTILITY & CLINICAL SERVICES -II**

### **PAPER CODE: BHMN402**

- A. Write a short note on Pharmacy
- B. Write a short note on Deep Burial
- C. Classifications of Bio-medical waste.
- D. Transport service
- E. Nursing services.
- F. Triage.

## **SUB:-ENVIRONMENTAL & ECOLOGY**

### **PAPER CODE: BHMN-403**

1. "Wood is a major renewable resource"-----Elucidate.
2. Sanitary landfill method for waste disposal.
3. Define ecology. Explain the ecological balance and its consequences of changes. Describe domestic waste water treatment with proper flow diagram.
4. Define biomedical waste. Describe different methods of management of biomedical wastes. Describe in brief the different types of biomedical waste categories.
5. Greenhouse Effect.
6. How do you analyze Environmental Impact Assessment (EIA)?
7. What is population explosion? How does it affect the economy of India?

## **SUB:-FINANCIAL MANAGEMENT**

### **PAPER CODE:-BHMN 404**

- Discuss the methods of Capital budgeting decisions.
- Discuss the difference between Net Present Value (NPV) & Internal Rate of return (IRR).
- State the advantages & disadvantages of (a)IRR (b) NPV (c) PI
- When is the capital rationing situation evaluated? How the capital rationing is done in case of divisible and individual projects?
- Discuss the various instruments in Break-even analysis.
- Discuss various component of working capital management.

## **SUB:-FUNDAMENTALS OF RESEARCH METHODOLOGIES**

### **PAPER CODE: BHMN405**

1. What is Research Design? Briefly explain the features of a good research design. Elaborate in details different types of research design.
2. What do you mean by research? What are the objectives of research. Briefly explain the research process
3. Qualitative data vs quantitative data.
4. Explain the difference between research methods and research methodology.
5. What do you mean by Action Research?
6. Write a short note on depth interview as a data collection tool.

# **BCA- 4TH SEM**

## **SUB: DATABASE MANAGEMENT SYSTEM**

### **PAPER CODE: BCAN401**

1. List the advantages of DBMS.
2. Draw and explain with diagram the DBMS architecture.
3. Difference between candidate key and alternate key.
4. Draw an ER diagram for a library management system.
5. Difference between primary key and secondary key.
6. What is DBA? How it is work?
7. With proper example explain – i) Generalization & ii) Aggregation.
8. Discuss the usefulness of ACID properties to ensure integrity during transaction process.
9. Briefly describe the 3-layer architecture of DBMS.
10. Consider a BANK database having customer, loan, account, employee and branch as entity types. Each banks of branch allows customers to open accounts and borrow loans. A customer can open more than one account and one account may also belong to one or more customers (joint account). Design an E-R diagram for the BANK database.

## **SUB: PROGRAMMING WITH JAVA**

### **PAPER CODE: BCAN 402**

1. Explain the features of java
2. Write short notes on method Overloading
3. Briefly explain about abstract class
4. Explain about inheritance in details with example
5. Explain the life cycle of an applet with an example
6. What is a package? Explain it with example.
7. Explain with example exception
8. What is AWT? Explain it with an example
9. How to create and run threads. Explain it with example.
10. Explain the various Java class libraries.

## **SUB: COMPUTER NETWORKING**

### **PAPER CODE: BCAN 403**

1. What are different type of Network Topology ? Explain with diagrams.
2. What are Routers ? write down the configuration of RJ 45 .
3. Write down differences between LAN, MAN, WAN.
4. What is the differences between Hub, Switch, and Router ?
5. What are differences between TCP and UDP ?
6. What is Firewall ? What is DNS?
7. What is the difference between the Internet, Intranet, and Extranet ?
8. What is congestion ? Write down different techniques of congestion control.
9. Explain the Leaky bucket and token bucket algorithm.
10. Write down the difference between circuit switching, packet switching and message switching.

## SUB: NUMERICAL ANALYSIS

### PAPER CODE: BMN 401

Answer the following question

1. Solve the system of equations, by Gauss – elimination method

$$3x_1 + 9x_2 - 2x_3 = 11$$

$$4x_1 + 2x_2 + 13x_3 = 24$$

$$4x_1 - 2x_2 + x_3 = -8$$

Correct up to two decimal places.

2. Given  $\frac{dy}{dx} = x^3 + y$ ,  $y(0) = 1$ , compute  $y(0.02)$ , by Euler's method correct up to four decimal places, taking step length  $h = 0.01$ .

3. Find the Lagrange's formula the interpolating polynomial which corresponds to the following data

X	-1	0	2	5
f(x)	9	5	3	15

4. Derived the Newton-Raphson Method. Using this formula to find the roots of the equation  $x^2 - 5x + 2 = 0$  correct up to three places of decimals.

5. Use Runge-Kutta Method of fourth order to compute the numerical values of the differential equation  $\frac{dy}{dx} = x^2 + y^2$ ;  $y(1)=0$ , find  $y$  at  $x = 1.3$ .

6. Calculate the value of  $\int_{1.2}^{1.6} \left(x + \frac{1}{x}\right) dx$  correct up to two significant figure taking four intervals, by Trapezoidal Rule.

7. Solve by using Modified Euler method the following differential equation for  $x = 1$  by taking  $h = 0.1$ :  $\frac{dy}{dx} = x + y$ ,  $y = 1$  when  $x = 0$

8. Show the sum of the coefficient of Lagrange's Interpolation formula is 1

9. Discuss the Bisection method for finding a root.

10. Solve the system of linear equations by LU-factorization method:

$$2x - 6y + 8z = 24$$

$$5x + 4y - 3z = 2$$

$$3x + y + 2z = 16$$

## BBA- 4TH SEM

### SUB: PRODUCTION & MATERIALS MANAGEMENT

#### PAPER CODE: BBAN401

1. Define cost of quality. Enumerate the three categories of cost of quality. Write a short note on ISO 9000 series of standard on quality management systems.
2. What is make or buy decision? What are the elements of PPC? Discuss various objectives of PPC.
3. Define plant layout. State its objectives. Briefly discuss various types of Plant Layout with example.
4. Give a short note on:
  - (a) Statistical Quality Control
  - (b) Performance Rating
  - (c) Work Measurement
5. What is production system? Explain various types of production system with example.
6. Advantages & Disadvantages of Product layout
7. Briefly state the Significance of Quality Control.

## **SUB: MANAGEMENT INFORMATION SYSTEM**

### **PAPER CODE: BBAN402**

1. Define SDLC.
2. Describe the steps of waterfall model with the help of a neat diagram
3. Write a short note on CASE tools
4. What do you mean by hospital information system? Describe the basic management cycle in hospitals.
5. What are the sources of health information?
6. Discuss the need of information in hospital
7. Define Transaction Processing System.
8. Describe the functions and limitations of Transaction processing system.
9. What is ERP?
10. What are the difference between real time processing and batch processing?
11. What is executive information system? Explain its basic features.
12. **Write short notes on any three the followings:**
  - a) Discuss the role of a manager in business organization.
  - b) Prototyping model
  - c) SCM
  - d) Objectives of MIS
  - e) Classification of information system

## **SUB: COST ACCOUNTING**

### **PAPER CODE: BBAN403**

1. Write four essential features which a good Cost Accounting System should possess?
2. What is economic ordering quantity? How do you calculate economic order quantity?
3. What is Labour turnover and how is it calculated?
4. How do you calculate overhead recovery rate?
5. What do you mean by transport operating costing? How is transportation cost calculated?

## **SUB: MARKETING MANAGEMENT**

### **PAPER CODE: BBAN404**

1. What is SWOT analysis? What is its importance?
2. Discuss the importance of PEST analysis in the context of marketing environment elements.
3. What do you mean by new product? Illustrate the stages involved in New Product Development (NPD) with an example.
4. Define the concept of Consumer Behavior. What are factors of consumer buying behavior? Explain Consumer Buying Process in details.
5. Discuss the different stages of a 'Product Life Cycle', giving implications of the changes in strategy for each stage. Name and define the different types of consumer products, explaining marketing conditions and giving examples of each. Elucidate the STPD concept of marketing.
6. What are the methods of pricing?
7. Explain some Functions of Marketing Channels.

## **SUB: HUMAN RESOURCE MANAGEMENT-I**

### **PAPER CODE: BBAN405**

1. Objectives and importance of Human Resource Planning
2. Human Resource Policy
3. Process of Selection
4. Different methods of Training.
5. Importance of executive development
6. Limitations of Career Planning.

## **MCA- 4TH SEM**

### **SUB: SOFTWARE ENGINEERING & TQM**

#### **PAPER CODE: MCA401**

1. What is DFD? Draw a DFD for Hospital management system
2. What is McCall's quality model? Explain the different factor associated with this model?
3. What is the difference between Cohesion and coupling? With proper example explain why a good system requires high cohesion low coupling?
4. What is testing? What is the importance of testing? What are terms related to testing?
5. What is use case diagram? Draw a use case diagram for ATM system.
6. What is 4Ps of software project management?
7. What is iterative waterfall model? What are the advantages of iterative waterfall model over classical waterfall model?
8. What is prototype? Explain the model which use prototype.
9. What are the features of good software? What are the Top-down, Bottom-up approach?
10. What is software maintenance? What are the different types of software maintenance?

### **SUB: GRAPHICS & MULTIMEDIA**

#### **PAPER CODE: MCA 402**

1. Write two techniques for producing color displays with a CRT.
2. Explain Mid-point circle drawing algorithm.
3. Draw a circle with radius=10 cm. using Mid-point circle drawing algorithm.
4. Briefly explain the raster scan display with a neat diagram.
5. Distinguish between Raster Scan and Random Scan Display
6. Discuss DDA line drawing algorithm with the help of an example.
7. Difference between DDA and Bresenham's line drawing algorithm
8. What is polygon?
9. What are the types of polygon?
10. Explain boundary fill and flood fill algorithm.

## **SUB: DATABASE MANAGEMENT SYSTEM-II**

### **PAPER CODE: MCA-403**

1. Describe 3-layer architecture of DBMS with diagram.
2. Short notes on Data models.
3. What are entity, primary key and candidate key?
4. What is normalization? What are the anomalies?
5. Draw an E-R diagram on banking system?
6. Compare 1NF, 2NF and 3NF.
7. What is BCNF.
8. What is functional dependency?
9. What is Data dictionary? What do you mean by unary operations in Relational algebra? Give example.
10. Discuss the usefulness of ACID properties to ensure integrity during transaction process.

## **SUB: OPERATION RESEARCH & OPTIMIZATION TECHNIQUES**

### **PAPER CODE: MM 401**

1. Use two-phase simplex method to solve the following LPP problem

$$\text{Maximize } z = 3x_1 + 2x_2 + 2x_3$$

$$\text{Subject to } 5x_1 + 7x_2 + 4x_3 \leq 7$$

$$-4x_1 + 7x_2 + 5x_3 \geq -2$$

$$3x_1 + 4x_2 - 6x_3 \geq 29/7, \quad x_1, x_2, x_3 \geq 0.$$

2. A company that operates for 50 weeks in a year is concerned about its stocks of copper cable. This costs Rs 240 a meter and there is a demand for 8,000 meters a week. Each replenishment costs Rs 1,050 for administration and Rs 1,650 for delivery, while holding costs are estimated at 25 per cent of value held a year. Assuming no shortages are allowed, what is the optimal inventory policy for the company ?

How would this analysis differ if the company wanted to maximize its profits rather than minimize cost? What is the gross profit if the company sells the cable for Rs 360 a meter.

3. Use dynamic programming to solve the following problem

$$\text{Minimize } Z = y_1^2 + y_2^2 + y_3^2$$

$$\text{Subject to the constraint } y_1 + y_2 + y_3 \geq 15,$$

$$y_1, y_2, y_3 \geq 0.$$

4. Write down the differences between PERT and CPM.

5. A television requirement finds that the time spent on his jobs an exponential distribution with mean of 30 mins. If he repairs the sets in the order in which they come in, and if the arrival of sets follows a Poisson distribution with an approximate average of a 10 per 8-hour day, what is the requirements of expected idle time each day? How many jobs are ahead of the average set just brought in?

- 6.. Use the simplex method to solve the following LPP:

$$\text{Maximize } z = 3x_1 + 5x_2 + 4x_3$$

$$\text{Subject to } 2x_1 + 3x_2 \leq 8$$

$$2x_2 + 5x_3 \leq 10$$

$$3x_1 + 2x_2 + 4x_3 \leq 15, \quad x_1, x_2, x_3 \geq 0.$$



## **SUB: ENVIRONMENT & ECOLOGY**

### **PAPER CODE: HU 401**

1. Define the term environment. What is Biome? What is biodiversity?
2. What is greenhouse effect? Name major greenhouse gases. What are the effects of greenhouse gases on the global climate?
3. What is acid rain and how does it develop? What are the effects of acid rain?
4. What is Ozone hole? How does it happen chemically in the stratosphere?
5. What is noise pollution? What are the sources of noise pollution? How is human system affected with noise pollution?
6. What are different types of solid wastes? Discuss the modes of municipal waste disposal.
7. What is BOD? Describe the BOD<sub>5</sub> test.
8. Discuss the working principle of trickling filters used in the secondary treatment of waste water.
9. Write short notes:
  - a. Catalytic Converter
  - b. Nitrogen Cycle
  - c. Earth's Albedo
  - d. Chemical Oxygen demand