Babasaheb Bhimrao Ambedkar Bihar University, Muzaffarpur
Directorate of Distance Education
Professional / Technical 2ⁿᵈ Semester (Session 2014-17)
Subject:- MCA (Master of Computer Applications)
Paper – 8
Model Paper (Full Marks – 70)
Information Systems: Analysis, Design and Implementation

1. Define System. Characteristics of system. Types of system.

2. What is data modeling? Define different types of data modeling techniques used.

3. Define testing and different types of testing.

4. Spiral vs. Waterfall model.

5. What are the steps in project management process?

6. What is documentation? Characteristics of documentation. Types of documentation

7. Define work involved in preliminary investigation.

8. How quality of software can be measured? Define different measures.

9. Input design guidelines.

10. What is the use of user interface design? Write the important guidelines for graphical user interface?

11. What is CASE?

12. Write down the steps in feasibility analysis?

13. Cost estimation. COCOMO Model.

14. Prototyping

15. Short notes:-

    (i)   E-R Diagram

    (ii) Questionnaire

    (iii) Open vs Closed System

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Paper – 9
Model Paper (Full Marks – 70)
Operating System

1. Explain difference between single processor, multi processor and clustered.
2. Briefly explain the following features of a modern Operating System- Multiprogramming & Multitasking.
3. What do you mean by process scheduling? Explain different types of scheduling queues maintained by an Operating System.
4. What do you mean by a defunct/zombie process? Illustrate it by taking an example of a C language program.
5. Explain difference between shared memory and message passing system for cooperating processes.
6. What do you mean by critical section? Explain Perterson's solution to critical section problem. Also explain Test and Set method.
7. Explain the concept of semaphore. Also differentiate between binary and counting semaphores.
8. Explain the use of semaphore variable to solve the readers/writers problem.
9. What do you mean by deadlock? Explain necessary conditions for deadlock to occur.
10. What do you mean by contiguous memory allocation? Explain the following algorithms to search for free space in contiguous memory allocation: a. First Fit b. Best Fit c. Worst Fit
11. What do you mean by fragmentation? Explain the difference between internal and external fragmentation.
12. Explain different page replacement algorithms in the paging environment.
13. Explain different access methods of a file.
14. Explain following file implementation methods
15. Write short notes on the following:
    a. Socket   b. Remote Procedure Call   c. Remote Method Invocation

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Professional / Technical 2nd Semester (Session 2014-17)
Subject:- MCA (Master of Computer Applications)
Paper – 10
Model Paper (Full Marks – 70)
Oral and Written Management Control

1. Explain oral presentation.

2. What is listening and discuss the barriers to listening?

3. What is oral communication? Write advantages of oral communications?

4. How to improve listening skill?

5. What are the uses of Internet in various fields?

6. What is meeting and discuss the different types of meeting?

7. What is the role of listening in a business context?

8. What is intranet ?Discuss advantages and disadvantages of intranet?

9. What do you mean by communication ?Discuss the characteristics of communication?

10. What is group discussion ?Discuss the types of group discussions?

11. What is resume ?Discuss the types and parts of resumes?

12. Explain characteristics of grapewine.

13. Write a sales letter by sales manager to customer offering a discount of goods.

14. Write an application to the personal manager T.C.S for the post of software developer.

15. Write short notes on any two of the following:
    (a). Filing and indexing   (b). Job interview   (c). Non verbal communication

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Paper – 11
Model Paper (Full Marks – 70)
Probability and Combinatory

1. Define with suitable examples of Mutually exclusive or disjoint events & Conditional probability.

2. if A, B and C are any three events in a sample space S, then
   $P(A \cup B \cup C) = P(A) + P(B) + P(C) P(A \cap B) P(B \cap C) P(A \cap C) + P(A \cap B \cap C)$.

3. The probability that A can solve a problem is 4/5 B can solve it is 2/5 and C can solve it is 3/5.if all of them try independently; find the probability that the problem will be solved.

4. State and prove Bayes's theorem.

5. Define probability distribution. Two cards are drawn successively, with replacement, from a well shuffed deck of 52 cards. Find the probability distribution of the number of kings.

6. Define Poisson distribution and give some examples of it. An office switchboard receives telephone calls at the rate of 3 calls per minute on average. What is the probability of receiving no call in one minute interval?

7. Define standard normal distribution. Assume the mean height of children to be 8.22cm with a variance of 10.8cm. How many children in a school of 1000 would you expect to be over 72cm tall?

8. calculate the coefficient of correlation of the following data:(1,2),(2,4),(3,8),(4,7),(5,10),(6,5),(7,14),(8,16),(9,2), (10, 20).

9. Find the generating function of the numeric function I. $= 7.2^r$,$r \geq 0$ & II. $= 2^r + 3^r$, $r \geq 0$.

10. Find the numeric function of the following generating function $G(x) = 1/(5 - 6x + x^2)$.

11. Find the coefficient of correlation between the heights of brothers and sisters from the following data:

Heights of brothers (x) in cm	65	66	67	68	69	70	71
Heights of sisters (y) in cm	67	68	66	69	72	72	69

12. Find the number of integers from 1& 250 that are divisible by any of the integer 2,3and 7.

13. Show that among 13 people, there are at least two people who were born in the same month.

14. Show that if seven colours are used to paint 50 cars at least 8 cars will have the same colour.

15. Write short notes on any two
    a) Generic Function b) Numeric Function c) Inclusive and exclusive principle.

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Paper – 12: Model Paper (Full Marks – 70)
Accounting and Management control

1. What is accounting? Discuss the different types of accounts?

2. Discuss any five accounting concepts with suitable examples?

3. What do you mean by assets? Discuss the different types of assets?

4. Write and explain about Trading Account and P/L Account.

5. What is fund flow statement and write the steps for preparing the fund flow statements?

6. Discuss the concept of standard cost? How it can be suitably determined explain?

7. What do you mean by variance? Discuss the different types of variance?

8. What is budget? How does it differ from forecasting?

9. From the following particulars calculate :

   1.Material cost variance

   2. Material price variance

   3. Material usage variance

   When

   > Standard quantity =100 kg
   >
   > Standard price =Rs 15 per kg
   >
   > Actual quantity=105 kg
   >
   > Actual price=Rs 14 per kg

10. With the help of the following data for a 60% activity. Prepare a budget for production at 80% and 100% capacity.

    Production at 60% capacity – 600unit

    Materials – Rs. 100 P.U.

    Labour – Rs. 40 P.U.

    Expenses – Rs. 10 P.U.

    Factory expences – Rs. 40,000(40% fixed)

    Administrative expences – Rs. 30,000(60% fixed)

11. What do you mean by NPO and discuss the management and audit of NPO?

12. What is long range planning and discuss the main points for the success of long range planning?

13. What is reporting? Explain the difference between report and order?

14. Write and explain about Non Profit Organisations and Organizational relationship in control.

15. Write short notes on any two:
   a) Balance sheet b) Financial statements   c) Book keeping.