Subject Code—2506

M.C.S. EXAMINATION

(Third Semester)

MS-11

RDBMS

Time : 3 Hours *Maximum Marks : 100*

Note : Attempt any *Five* questions. All questions carry equal marks.

1. (a) Explain three Schema Architecture of DBMS. What is its goal ? How can it be used to explain data independence ? **(10)**

   (b) Explain the advantages of using a DBMS and the capacity that good DBMS should possess. **(10)**

2. (a) What is Integrity ? Describe various integrity rules. How do they affect on insert, delete and update operations ? **(10)**

(b) Describe the following : (10)
Select, Project, Join, Division.

3. What is Normalization ? Why is it performed ? Explain process of normalization with example. Describe what is most strongest normal form and why ? (20)

4. (a) Describe the Basic Algorithms for executing query operations in query processing. (10)

(b) What is recovery ? Explain the various recovery techniques. (10)

5. What do you understand by concurrency ? Describe in detail various concurrency control techniques. (20)

6. Explain the following : (20)

(a) Shadow Paging

(b) Time Stamp Ordering

(c) Database Languages

(d) Multivalued Functional Dependencies.

7. (a) Explain Client Server Architecture. Discuss advantages and disadvantages of Distributed Database. **(10)**

(b) Explain Data fragmentation, Replication and Allocation techniques for distributed database. **(10)**

8. (a) Explain the following Keys :
Primary Key, Secondary, Candidate, Foreign, Alternate Key. **(10)**

(b) Design E-R model for your organization and describe it properly. **(10)**

Subject Code—2507

M.C.S. EXAMINATION

(Third Semester)

MS-12

SOFTWARE ENGINEERING

Time : 3 *Hours* *Maximum Marks :* 100

Note : Attempt any *Five* questions. All questions carry equal marks.

1. (a) Describe about different phases of software development. **(10)**

(b) Explain relationship between people, process and product with example. **(10)**

2. (a) Explain spiral model and its phases. **(10)**

(b) Describe about software quality factors. **(10)**

3. (a) Explain COCOMO model for projects of different complexities. **(10)**

(b) Describe about PERT and CPM charts with examples. **(10)**

4. (a) Describe about the concept of functional dependencies, with suitable examples. **(10)**

(b) Explain system design tools and prototyping. **(10)**

5. (a) Differentiate between verification, validation and testing. **(10)**

(b) Explain code reading and writing practices. How are these helpful in code conversions ? **(10)**

6. (a) Explain test case designs. Give suitable test cases for OCR program. **(10)**

(b) What do you mean by Test Plan ? Explain different types of activities during testing. **(10)**

7. (a) Differentiate between Error, Faults and Bugs of project with examples. **(10)**

(b) Explain MUSA reliability model. **(10)**

8. Write short notes on the following :

(a) Complexity Metric **(10)**

(b) Project Monitoring. **(10)**

Subject Code—2508

M.C.S. EXAMINATION

(Third Semester)

MS-13

COMPUTER GRAPHICS

Time : 3 *Hours* *Maximum Marks :* 100

Note : Attempt any *Five* questions. All questions carry equal marks.

1. (a) Explain the term 'Computer Graphics'. What are the advantages and disadvantages of Interactive Computer Graphics ? **(10)**

(b) What do you understand by Interactive Techniques ? Explain the following interactive techniques : **(10)**

(i) Inking

(ii) Painting.

2. (a) What steps are required to plot a line whose slope is between 0° to 45° using Bresenham's method. (15)

(b) Explain major side effects of scan conversion. (5)

3. (a) Discuss the shadow mask technique for generating colours in circuits. (10)

(b) What is the difference between positioning and pointing devices ? Explain any *two* positioning and pointing devices respectively. (10)

4. (a) Define the following terms : (10)
   (i) Frame Buffer
   (ii) Resolution
   (iii) Precision
   (iv) Dragging
   (v) Window.

(b) Write Painter's algorithm for Hidden Surface Elimination. (10)

5. List the relative advantages and disadvantages of the major display technologies for Video moniters, Vector refresh systems, Raster refresh systems, DVST systems and Plasma panels. (20)

6. (a) What is Multimedia ? Explain its various components briefly. Also list various advantages of multimedia. **(10)**

(b) Discuss the various applications of multimedia in education and business. **(10)**

7. Write short notes on the following : **(5×4)**

(a) Rubber-Band Methods

(b) GKS

(c) Fractal Curves and Surfaces

(d) Zooming.

8. Differentiate the following : **(5×4)**

(a) Random Scan and Raster Scan

(b) Interactive and Passive Graphics

(c) Clipping and Shielding

(d) Parallel and Perspective Projection.

Subject Code—2509

M.C.S. EXAMINATION

(Third Semester)

MS-14

MANAGEMENT INFORMATION SYSTEM

Time : 3 *Hours* *Maximum Marks* : 100

Note : Attempt any *Five* questions. All questions carry equal marks.

1. Clarify the concept of Management Information System highlighting its advantages and limitations. **(20)**

2. Discuss the utility of MIS in the areas of Production and Marketing. **(10,10)**

3. Differentiate between Effectiveness and Efficiency. What criteria will you use to measure effectiveness and efficiency of an MIS ? **(4,8,8)**

4. If you are asked to develop an MIS for an organisation, how will you do that ? Discuss the steps involved citing suitable examples. **(20)**

5. Explain the following :
   (a) Advantages of Computer based MIS over mannual MIS **(10)**
   (b) Latest trends in MIS. **(10)**

6. Write short notes on the following :
   (a) Feasibility Studies **(10)**
   (b) CASE Tools. **(10)**

7. (a) What is the need of Modification of MIS ? How is it done ? **(10)**
   (b) Explain the concept of balance in the context of MIS. **(10)**

8. Write short notes on any *four* of the following :
   (a) Prototyping
   (b) Decision Table
   (c) Flow Chart
   (d) Object Oriented Programming
   (e) Networking
   (f) Application Software. **(5×4)**

Subject Code—2550-X

M. Sc. EXAMINATION

(Third/Fourth Semester)

(Re-appear)

(Elective Paper)

COMPUTER SCIENCE

MS-27

Microprocessor and Applications

Time : 3 *Hours* *Maximum Marks :* 100

Note : Attempt any *Five* questions. All questions carry equal marks.

1. Explain the working of 8085 based MPU, with a suitable diagram of 8085 architecture. (20)

2. (a) Interface 2K memory size to 8085 microprocessor and give the memory map of address range. (10)

(b) How many types of Registers are their in 8085 ? Explain each register. (10)

3. (a) Give the basic interfacing concepts required to interface an input and output device. (10)

(b) Differentiate between memory mapped and I/O mapped interfacing. (10)

4. Write a program to multiply two integers. (20)

5. (a) Explain the given instructions : (10)
   (i) CALL
   (ii) ANI
   (iii) LXI
   (iv) SUI
   (v) PCHL.

(b) Discuss the various addressing modes available with 8085. (10)

6. Discuss the block diagram of 8085 and write a program to transfer a date set with mode 0. (20)

7. (a) How the casecading of 8259A PIC is done ? Explain it with suitable example. (10)

(b) Discuss the basic concepts in serial input-output. (10)

8. Write short notes on the following :

(a) Logic Operations (6)

(b) Stack (6)

(c) Interrupts in 8085. (8)