Subject Code—2510

M.C.A. EXAMINATION

(Fifth Semester)

MS-31

DATA WAREHOUSING AND DATA MINING

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

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

1. (a) Write a note on evolution of data warehousing and discuss the advantages and its limitations in detail. **(10)**

(b) Explain the architecture and design techniques of data warehousing. **(10)**

2. Discuss in detail about the steps of implementing the warehouse. Also identify the obstacles while implementation. How is database different from datawarehouse ? **(20)**

3. (a) Define the following terms with suitable examples : (10)

(i) Data warehouse

(ii) Data mining

(iii) OLAP

(iv) OLTP

(v) Data Marts.

(b) Discuss in detail about the knowledge discovery in databases (KDD). (10)

4. (a) How is data mining different from data warehousing with suitable example, and discuss the major issues pertaining to data mining. (10)

(b) Write a note on association roles along with appropriate example. (10)

5. Discuss about the concept of classification rules and decision trees. Highlight the Bayesian classification and other classification methods with suitable examples. (20)

6. (a) Write a note on mining single-dimensional boolean association rules, from transaction database and also from multilevel-dimensional model. (12)

(b) Discuss the concept of clustering in data mining. **(8)**

7. (a) List the applications of data warehouse and data mining and also highlight the languages being used for implementing these mechanisms. **(10)**

   (b) Explain the concept of knowledge engineering and knowledge management. **(10)**

8. Write short notes on the following topics :

   (a) Data warehouse management

   (b) Unlocking the data asset for end users

   (c) Data generalization and summarization based characterization

   (d) 3-tier database architecture. **(20)**

Subject Code—2511

M.C.A. EXAMINATION

(Fifth Semester)

C SHARP (C#) Programming

MS-32

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

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

1. (a) Explain the basic concepts and features of C#.

(b) Explain next generation windows services.

2. Describe the following :

(a) Struct Type

(b) Enumeration Type

(c) Reference Type

(d) String Type.

3. Write the programs in C# to demonstrate the use of constructors and destructors.

4. Describe the following :
   (a) Multicast Delegates
   (b) Overriding
   (c) Indexes
   (d) Modifiers.

5. (a) Write a program in C# to implement Fibonacci series.
   (b) Explain switch statement with example program.

6. (a) Write a program in C# to throw the exception, also implement rethrowing exception.
   (b) Explain try-catch finally.

7. Explain Inheritance in detail.

8. Write short notes on the following :
   (a) Conditional Complication
   (b) Interface Mapping
   (c) Role based Security
   (d) Standard Permissions.

Subject Code—2512

M.C.A. EXAMINATION

(Fifth Semester)

MS-33

ADVANCED COMPUTER ARCHITECTURE

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

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

1. (a) A 40 MHz processor was used to execute a benchmark program with the following instruction mix and clock cycle counts :

Instruction Type	Instruction Count	Clock Cycle Count
Integer	45000	1
Data transfer	32000	2
Floating Pt.	15000	2
Control Transfer	8000	2

Determine the effective CPI, MIPS rate and execution time for this program. **(10)**

(b) Design an algorithm to find the maximum of n numbers in 0 (log n) time on an EREW-PRAM model. **(10)**

2. (a) Draw and explain the architecture of a vector supercomputer. **(10)**

   (b) Compare control flow, data flow and reduction computers. **(10)**

3. (a) Draw generalized structure of a multistage interconnection network with $a \times b$ switch modules. **(10)**

   (b) Draw and explain architecture of VLIW processor and its pipeline operations. Also discuss vector and symbolic processors. **(10)**

4. (a) Explain paging and segmentation in virtual memory technologies. Also discuss different memory replacement policies. **(10)**

   (b) Differentiate between the following : **(10)**

   (i) Unified and Split Cache

   (ii) Physical and Virtual Cache.

5. Draw and explain direct mapping, fully associative, set associative and sector mapping cache organization. **(20)**

6. Draw timing diagram and speedup factor for pipelined, superpipelined, superscalar and superscalar/superpipelined design system. **(20)**

7. (a) Discuss different snoopy bus protocols for snoopy bus protocols. **(10)**

   (b) Explain different message passing mechanisms in multiprocessors and multicomputers. **(10)**

8. Write short notes on the following : **(20)**

   (a) Multihreaded Architecture

   (b) Gamma Binomial Model

   (c) Vector Processors.

Subject Code—2513

M.C.A. EXAMINATION

(Fifth Semester)

MS-34

HIGH SPEED NETWORK

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

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

1. (a) Draw and explain flowchart to trouble-shoot poor network performance. **(10)**

   (b) Explain working of LAN emulation in ATM. Also explain multiple emulated LANs. **(10)**

2. (a) Explain route determination, data forwarding, ATM switches and cabling considerations of ATM network. **(10)**

(b) Explain relationship among the ISO-OSI, B-ISDN and ATM reference model. Also discuss all layers of ATM reference model. **(10)**

3. Explain the following Digital Subscriber Line (DSL) services : **(20)**

   (a) ADSL

   (b) HDSL

   (c) VDSL

   (d) SDSL

   (e) RADSL

   Also explain Cable Modems.

4. (a) Explain A, B, S and M port type of network connections supported by FDDI. **(10)**

   (b) Explain the following 802·3 standard :

   (i) 1000 Base SX

   (ii) 1000 Base LX

   (iii) 1000 Base CX

   (iv) 1000 Base T.

   Also discuss 8B/10B encoding used in 1000 Base CX. **(10)**

5. (a) Describe RSVP, vLAN and video compression service protocols for supporting voice and video. **(10)**

   (b) Discuss 4B/5B block encoding and different channels supported in Iso-Ethernet. **(10)**

6. Explain Fibre channel architecture with the following layers : **(20)**

   (a) FC–0

   (b) FC–1

   (c) FC–2

   (d) FC–3

   (e) FC–4

7. (a) Describe ISDN adapter and network terminal adapter in ISDN. **(10)**

   (b) Explain different issues in management system for high speed network. **(10)**

8. Write short notes on the following :

   (a) SMDS

   (b) Statistical Multiplexing in Frame Relay

   (c) Cell Switching in ATM. **(20)**