Total No. of Questions : 8] [Total No. of Printed Pages : 2

Roll No. .....

MCA–501(N)

M. C. A. (Fifth Semester) EXAMINATION, June, 2008

(New Course)

DATA WAREHOUSING AND DATA MINING

[MCA–501(N)]

Time : Three Hours

Maximum Marks : 100

Minimum Pass Marks : 40

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

1. (a) Discuss briefly the various data pre-processing techniques. 10

   (b) Discuss the architecture of Data Warehouse. 10

2. (a) Explain Market Basket Analysis with example. 10

   (b) Discuss various issues regarding classifiction and prediction. 10

3. (a) Explain generation of association rules from Frequent items. 10

   (b) Explain various Data Mining Applications and Tools. 10

4. (a) What are the steps involved in Data Mining ? Explain them. 10

   (b) What are the various data types used in Data Mining ? 10

P. T. O.

5. (a) What are the methods of Evolution Analysis ? Explain briefly. 10

   (b) What are different types of Mining Multilevel Association rules ? Explain briefly. 10

6. (a) Discuss different classification methods. 10

   (b) Discuss data Cube technology briefly. 10

7. (a) Differentiate between data mining and OLAP. 10

   (b) Discuss the a priori algorithm for association rule mining with the help of a suitable example. 10

8. Write short notes on any *two* of the following : 20

   (a) Types of databases

   (b) Outlier analysis

   (c) Constraint based association rule mining

   (d) Cluster analysis

Total No. of Questions : 8] [Total No. of Printed Pages : 2

Roll No. .....

MCA–501(O)

M. C. A. (Fifth Semester) EXAMINATION, June, 2008

(Old Course)

MULTIMEDIA AND ANIMATION

[MCA–501(O)]

Time : Three Hours

Maximum Marks : 100

Minimum Pass Marks : 40

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

1. (a) Explain multimedia system architecture. 10

   (b) What are the different types of authoring tools in multimedia ? Discuss each in brief. 10

2. (a) Explain RIFF and TIFF file formats. 10

   (b) What are various file formats for storing image data which are popular for image scanners and why ? Which are the most common bit map formats used on web ? 10

3. (a) Describe AV_1 format. 10

   (b) Explain the characteristics of speech. What are the types of voice recognition system ? 10

4. (a) What is sampling process ? 10

   (b) Explain the principles of MPEG compressor. Describe how I, P, and B frames are generated ? 10

P. T. O.

5. (a) Write a multimedia softwares and multimedia authoring tools. 10

   (b) How does video animations differ from full motion video ? 10

6. (a) What do you understand by morphing ? Explain with example. 10

   (b) Why is ATM suitable for transporting multimedia data ? Explain this using ATM Protocol Stack. 10

7. (a) Discuss the purpose of arthoware. 10

   (b) Discuss the relationship between Hypertext, Hypermedia and Multimedia. 10

8. Write short notes on any *four* of the following : 5 each

   (a) Animation functions

   (b) Tweening motion specification

   (c) Multicasting

   (d) Multimedia hardware

   (e) Multimedia transmission protocols

Total No. of Questions : 5] [Total No. of Printed Pages : 3

MCA–501(N)

M. C. A. (Fifth Semester)
EXAMINATION, Nov.-Dec., 2007

(New Course)

DATA MINING AND WAREHOUSING

[MCA – 501(N)]

Time : Three Hours

Maximum Marks : 100

Minimum Pass Marks : 40

Note : Attempt all questions. Attempt any *two* parts in each question.

1. (a) What do you understand by Data mining and knowledge discovery ? Explain how the evolution of database technology led to data mining. 10

   (b) Define the following data mining functionalities characterization, discrimination, association and correlation analysis, classification, prediction and clustering. Give example of each using a real life database. 10

   (c) Discuss major issues in data mining regarding mining methodology, user interaction, performance and diverse data types. 10

2. (a) What is a data warehouse ? How it is different from an operational database ? Explain data marts. 10

P. T. O.

(b) Discuss 3-tier data warehousing architecture and explain ROLAP, MOLAP and HOLAP servers. 10

(c) Compare the following : 5 each

(i) Star schema and Snow flake schema.

(ii) Data cleaning and Data transformation.

3. (a) Describe various methods for : 5 each

(i) Data preprocessing

(ii) Explain how concept hierarchies are useful in data mining.

(b) Why analytical characterization is needed and how it can be performed ? Compare the result of two induction methods with relevence analysis and without relevance analysis. 10

(c) Describe various data mining premitives for specifying a data mining task. 10

4. (a) Explain a priori algorithm for association rule mining taking suitable example. 10

(b) A database has four transactions. Let min. support = 60% and min. conf = 80% :

T 1D	Date	Item Bought
T 100	15/10/07	{K, A, D, B}
T 200	15/10/07	{D, A, C, E, B}
T 300	19/10/07	{C, A, B, E}
T 400	20/10/07	{B, A, D}

Find all frequent item sets using A priori and FP-growth respectively. Compare the efficiency of the two methods. 10

(c) Discuss mining of multilevel association rules and explain how to check redundant multilevel association rules. 10

5. (a) What is Classification ? Discuss any *one* method of Decision tree induction. 10

(b) Write an algorithm for kNN classification. 10

(c) Describe the partitioning and density based methods of clustering. Write applications of clustering. 10

Total No. of Questions : 8] [Total No. of Printed Pages : 2

MCA–501

M. C. A. (Fifth Semester) EXAMINATION, May/June, 2006

MULTIMEDIA AND ANIMATION

(MCA – 501)

Time : Three Hours

Maximum Marks : 100

Minimum Pass Marks : 40

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

1. (a) What do you mean by the term 'Multimedia' ? What are the essential elements of any multi media application ? 10

   (b) Explain MPEG standard for Audio Encoding. What are the *four* different MPEG modes ? 10

2. (a) Write about TIFF and GIF image formats along with advantages and disadvantages. 10

   (b) How does video animation differ from full motion video ? 10

3. (a) Explain Interpolative technique for video compression. 10

   (b) What is the need of Digital Video and Image compression ? What *three* parameters must be considered while compressing files ? 10

P. T. O.

4. (a) What are the various steps involved in developing interactive multimedia system ? Write in detail. 10

   (b) What is authoring tool ? Why are they needed ? Name any *three* authoring tool. 10

5. (a) Write in brief about any *three* scripting languages. How is scripting language different from normal language ? 10

   (b) Explain the *two* video compression techniques. What do you mean by lossy and lossless compression ? 10

6. (a) Explain the following terms used in video data : 10

   (i) Vertical Resolution

   (ii) Perception of depth

   (iii) Luminance

   (iv) Video Bandwidth

   (b) Explain about TIFF and PDF encoding formats. 10

7. (a) Write in brief about various TV transmission techniques.

   (b) Explain the term sampling. How does it effect sound quality ?

8. Write short notes on any *four* of the following : 5 each

   (i) LZW compression

   (ii) Hyper media

   (iii) Interlaced GIF

   (iv) Morphing

   (v) Quick time movie format

Total No. of Questions : 8] [Total No. of Printed Pages : 3

MCA–501

M. C. A. (Fifth Semester) EXAMINATION, Dec., 2005

MULTIMEDIA AND ANIMATION

(MCA–501)

Time : Three Hours

Maximum Marks : 100

Minimum Pass Marks : 40

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

1. (a) What do you understand by Multimedia ? Describe application areas and main properties of multimedia. 2, 3, 3

   (b) What are the components of a multimedia system ? How they are linked with each other ? 3, 3

   (c) Discuss the relationship between Hypertext, Hypermedia and Multimedia. 6

2. (a) Discuss different protocols for multimedia transmission. Explain *two* of them in detail. 10

   (b) How is bandwidth related with compression ? Explain different compression standards for image. 4, 6

3. (a) Explain MIDI messages. Also discuss the components of MIDI synthesizer device. 5, 5

P. T. O.

(b) Describe the benefits of compression schemes in designing multimedia system. 10

4. (a) Explain the mechanism to obtain synchronization between audio, video and text for playing multimedia presentation at remote location through computer network. What will be the effect of losing one audio, video frame during transmission ? 6, 4

(b) Discuss advantages and disadvantages of different techniques used for implementing key frame base animation. 5, 5

5. (a) What are the advantages of using feature based correspondence for generation of a morph sequence ? 6

(b) Explain in brief the product development life cycle of any multimedia product. 6

(c) Describe multimedia document architecture. Write the steps of processing of a multimedia document. 4, 4

6. (a) What are common formats for storing audio, video and still pictures in a multimedia system ? 10

(b) Write multimedia softwares and multimedia authoring tools. Take *one* example of each and discuss in brief. 5, 5

7. (a) What do you understand by morphing and tweening ? Explain each of them by taking *one* practical application. 4, 4

(b) Explain different animation languages along with the scope of their use. 6

(c) What are the features to be kept in mind while developing any multimedia application ? 6

8. Write short notes on any *four* of the following : 5 each

(a) Internet and multimedia

(b) Video conferencing

(c) IDTV and HDTV principles

(d) Metaphores

(e) Motion specifications

(f) Encoding and compression

Total No. of Questions : 8] [Total No. of Printed Pages : 3

MCA–501

M. C. A. (Fifth Semester) EXAMINATION, June, 2005

MULTIMEDIA AND ANIMATION

(MCA–501)

Time : Three Hours

Maximum Marks : 100

Minimum Pass Marks : 40

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

1. (a) Identify the steps in the planning, production and delivery of a multimedia application. Why are these critical for the successful development of a multimedia application ?

   (b) How can you integrate the use of concrete works and multimedia elements to reinforce a message ?

   (c) Discuss the rules for property designed instructional interfaces. Base your answer on the psychology of learning.

2. (a) Discuss the benefits and disadvantages of integrating digitized video into a multimedia application.

   (b) Define MIDI technology and how it can enhance or hamper a multimedia presentation ?

P. T. O.

(c) Explain how the elements of interactivity such as bottom, by per text and pull-down menus are used in an interactive application.

3. (a) Why are Navigation and Interactivity important in multimedia development ? Discuss it precisely.

(b) What are the essential requirements on the networks, when images are transmitted focussing the image format representations.

4. (a) Explain how theatrical metaphor based authoring-program works ? Compare it with the icon based authoring program's working.

(b) Discuss different types of storage media with regard to their potential use in distributing multimedia applications. Also describe the future trends for distribution of storage media to be adopted.

5. (a) Explain the characteristics of Hypermedia/Hypertext editors.

(b) Explain CD-ROM extended Architecture. How is it different from CD-ROM technology ?

6. (a) What do you understand by the LDU (Logical Data Units) hierarchy ? Describe the classification of Logical Data Units (LDVs) considering suitable example(s).

(b) Describe the synchronisation Reference Model. What is the relevance of the various layer in it, briefly discuss them ?

7. (a) Discuss the various techniques which could be employed by Animation Control Mechanism.

(b) Describe various video compression techniques in a very concise way.

8. Write short notes on any *five* of the following :

(i) Multimedia and Network

(ii) Computer Video Format

(iii) Digital Video Interactive (DVI)

(iv) Quality of Service-Layered model for the multimedia communication system

(v) Multimedia and Open Document Architecture (ODA)

(vi) Multimedia Objects in a Distributed Environment (MODE)

(vii) Digital Video and Electronic Commerce

(viii) Standard General Markup Language (SGML)

Total No. of Questions : 8] [Total No. of Printed Pages : 2

MCA–501

M. C. A. (Fifth Semester) EXAMINATION, Dec., 2004

MULTIMEDIA AND ANIMATION

(MCA – 501)

Time : Three Hours

Maximum Marks : 100

Minimum Pass Marks : 40

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

1. (a) What are different types of authoring tools in multimedia ? Discuss each in brief. 10
   (b) Compare digital, audio and MIDI data. 6
   (c) Discuss object oriented authoring tools. 4

2. (a) What is hypertext ? Discuss the structure of hypertext. Explain how HTML helps in the generation of hypertext. 2, 5, 3
   (b) Describe AVI format. 4
   (c) Describe Sampling and Quantization. 6

3. (a) Discuss various image and sound file formats in multimedia. 10
   (b) Explain RTF, NIFE, MPEG. 10

4. (a) Indicate the use of velocity curves for developing animation sequence on the screen. 10

P. T. O.

(b) Which transform domain technique is used in JPEG compression ? Explain. 5

(c) Explain working with its practical applications. 5

5. (a) Describe different protocols for multimedia transmission. Explain *two* of them in detail. 4, 3, 3

(b) Explain the bottleneck in transmission of multimedia. How they can be overcome ? 5, 5

6. (a) What is the file size of 40 seconds recording at 44·1 kHz and 32 bit resolution ? 5

(b) What are different mechanism of searching the information in hypertext document ? 5

(c) What is multimedia ? What configuration is required for multimedia computers ? 10

7. (a) Discuss on the relationship between hypertext, hyper media, and multimedia. 8

(b) What are different kinds of storage devices available in multimedia hardware ? Explain at the level of memory and I/O. 7

(c) What are advantages of using feature based correspondence for generation of a morph sequence. 5

8. Write short notes on any *four* of the following : 5 each

(a) Motion Estimation

(b) Video conferencing

(c) Production process and multimedia

(d) Tweening motion

(e) Synchronization

(f) Metaphores

Total No. of Questions : 8] [Total No. of Printed Pages : 2

MCA–501

M. C. A. (Fifth Semester) EXAMINATION, Dec., 2003

MULTIMEDIA AND ANIMATION

(MCA–501)

Time : Three Hours

Maximum Marks : 100

Minimum Pass Marks : 40

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

1. (a) What do you mean by MIDI ? How one can generate the background music for Multimedia Applications ?

   (b) How many types of data compression methods are there ? What steps are involved in compression of images ?

2. (a) Describe different protocols for multimedia transmission. Explain *three* of them in detail.

   (b) What are the features to be kept in mind while developing any multimedia applications ?

3. (a) What do you mean by graphics animation ? Explain virtual reality.

   (b) Explain fundamental steps along with the block diagram to process the still images.

P. T. O.

4. (a) How one can generate the speech using :
   (i) Time dependent sound concentration ?
   (ii) Frequency dependent concentration ?
   (b) What do you mean by MPEG compression ? What is the significance of I. B. and P frames in MPEG ?

5. (a) What do you understand by morphing of tweening ? Explain each of them by taking practical application.
   (b) Find out the transfer rate for transferring data at the sampling rate of 60·2 kHz using 32 bit for quantization and stereo mode.

6. (a) Explain in detail the product development life cycle of any multimedia product.
   (b) What are the advantages of using features based correspondence for generation of a morph sequence.

7. (a) Write down any *five* general computer animation functions with its purposes.
   (b) List *four* typical formats for storing image data. Explain how they are different from each other. Which are more popular for image scanners and why ?

8. Write short notes on any *five* of the following :
   (a) Raster animations
   (b) Visual perception of eye and its defects
   (c) Authorwall
   (d) Synchronization
   (e) Multimedia and network
   (f) Production process
   (g) Multimedia and Interactivity

Total No. of Questions : 8] [Total No. of Printed Pages : 2

MCA–501

M. C. A. (Fifth Semester)
EXAMINATION, June, 2004
MULTIMEDIA AND ANIMATION
(MCA–501)

Time : Three Hours

Maximum Marks : 100

Minimum Pass Marks : 40

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

1. (a) Explain main properties of multimedia system.
   (b) Explain data streams characteristics for continuous media.

2. (a) Explain the meanings of the terms "encoding and compression". Does encoding always impty compression ? If not illustrate under what types of encoding this is not true ?
   (b) How does video animations differ from full motion video ?

3. (a) Compare and contrast JPEG and MPEG. How would motion JPEG differ from MPEG ?
   (b) What benefits are offered by compression schemes in designing multimedia systems ?

P. T. O.

4. (a) Describe negative compression with an example.
   (b) Compare and contrast the TIFF file format with the RIFF formats.

5. (a) Why is the access latency higher in optical storage systems ?
   (b) Explain basic concepts of MIDI. Describe MIDI and SMPTE timing standards.

6. (a) Write a short note on digital image representation. Explain different image formate.
   (b) Explain different Animation language.

7. (a) Describe methods of controlling animations.
   (b) Describe multimedia document architecture. Write and explain the steps of processing of a multimedia document.

8. (a) Explain synchronization issues. Draw and explain reference model for multimedia synchronization.
   (b) Explain product development processes. Write a short note on authoring tools.