

**UNIVERSITI TUN HUSSEIN ONN MALAYSIA**

**FINAL EXAMINATION  
SEMESTER II  
SESSION 2011/2012**

**COURSE NAME** : **MULTIMEDIA DATABASE**

**COURSE CODE** : **BIT 3193 /BIT 31903**

**PROGRAMME** : **BACHELOR OF INFORMATION  
TECHNOLOGY**

**EXAMINATION DATE** : **JUNE 2012**

**DURATION** : **2 HOURS AND 30 MINUTES**

**INSTRUCTION** : **ANSWER ALL QUESTIONS**

**THIS QUESTION PAPER CONSISTS OF FIVE (5) PAGES**

**PART A**

**Instruction:** State whether each of the following statement is **TRUE** or **FALSE**.

- Q1** Multimedia data is dynamic because their contents and meanings do not depend on the presentation time.
- Q2** Graphics elements which are represented in mathematical formulas are pixel based.
- Q3** In offline merging, the storage patterns of multimedia objects are adjusted prior to merging.
- Q4** In order to provide better performance for media objects with different data transfer rate requirements, staggered stripping technique can be used.
- Q5** Content Independent Metadata does not depend on the contents of the media information.
- Q6** Direct Content Based Metadata describes the contents of a document with direct utilization of those contents.
- Q7** Query-Directed extraction is a process that manipulates large collections of related text objects such as e-mail.
- Q8** In 'Query by Example', the similarity matching required by the user can be on texture, color, spatial characteristics or the shape of the object.
- Q9** There are five sub-components in MMDBMS server which are Storage Manager, Metadata Manager, Index Manager, Data Manager, and Communication Manager.
- Q10** User interface for multimedia presentation is also influenced by hardware characteristics such as monitor resolution, width and height.

(10 marks)

**PART B**

**Q11** Given the following scenario:

Entertainment systems - video on demand

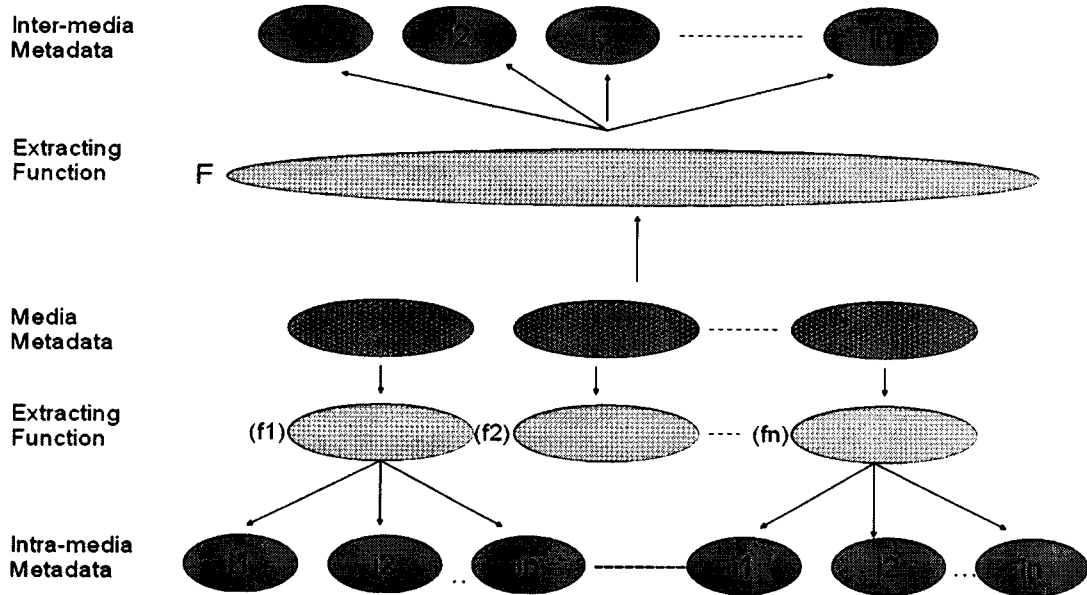
The registered user of the system can request a video from the catalog. The video may be available according to a previously advertised fixed schedule or available at any time, subject to a small delay. The user can select the video based on textual information of the cast, production team and synopsis of the plot. Production information such as story-boards, screenplay and production notes can be included. Users can view the video contiguously or play randomly selected scenes. The video can be paused and resumed play as requested within constraints.

- (a) Identify types of multimedia data used for video on demand based on the article above. (5 marks)
- (b) Determine the characteristic of video on demand application. (5 marks)
- (c) Describe **FOUR(4)** management issues for multimedia application. (8 marks)

**Q12** Process of querying multimedia data in MMDBMS (Multimedia Database Management System) can be approached in two ways.

- (a) Differentiate between those **TWO (2)** approaches. (4 marks)
- (b) Explain the process of approaches given in **Q13(a)**. (8 marks)

**Q13** Figure Q13 below describes the ways of generation of metadata from various media objects. Based on that figure, answer the questions below:



**Figure Q13.**

- (a) Explain the metadata generation based on Intra-media and Inter-media Metadata. (4 marks)
- (b) Interpret the Extracting Function happened at F. (8 marks)

**Q14** In Multimedia Database Querying Process, there are Simple Query Process and Multiple Query Process.

- (a) Explain both processes with appropriate diagram. (12 marks)
- (b) Multiple Query Process can be done in two processes. Explain both of them. (8 marks)

**Q15** In Multimedia Database Management System Architecture, there are several issues need to be considered before any development. Discuss **THREE (3)** issues in the implementations consideration.

(12 marks)

**Q16** The most commonly used features for CBIR (Content-Based Image Retrieval) are color, shape, texture and position.

**(a)** Explain the purpose of CBIR

(4 marks)

**(b)** Tabulate the features used in CBIR based on measure, theory and main use.

(12 marks)