UTHM
Universiti Tun Hussein Onn Malaysia

UNIVERSITI TUN HUSSEIN ONN MALAYSIA

FINAL EXAMINATION
ONLINE
SEMESTER II
SESSION 2019/2020

COURSE NAME	:	MULTIMEDIA SYSTEM AND APPLICATION
COURSE CODE	:	BIM 20404
PROGRAMME CODE	:	BIM
EXAMINATION DATE	:	JULY 2020
DURATION	:	2 HOURS AND 30 MINUTES
INSTRUCTION	:	1. ANSWERS **THREE (3)** QUESTIONS ONLY. 2. THE STUDENT SHOULD UPLOAD THE ANSWER BOOKLET (PDF/WORD FORMAT) WITHIN 30 MINUTES AFTER EXAMINATION PERIOD 3. **OPEN BOOK EXAMINATION**

THIS QUESTION PAPER CONSISTS OF **THREE (3)** PAGES

Q1 Question **Q1(a)** to **Q1(c)** are based on the following scenario:

Alfims IT Bhd was appointed by Ministry of Health to develop an interactive Covid-19 case tracker. The application should enable the ministry to track patient's movement history, self health assessment, send latest news and information and monitor Covid-19 cases in Malaysia. This application should also able to detect and display Covid 19 cases within 1km radius of the user. The application also should able to monitor Covid-19 cases around the world by displaying interactive 3D dashboard. This application should be able to run in all devices and platform.

(a) Suggest an appropriate programming or scripting language that is most suitable to develop the interactive 3D dashboard for this project

(2 marks)

(b) Discuss **TWO (2)** reasons for your answer in **Q1(a).**

(6 marks)

(c) Draw **FOUR (4)** interface designs based on the stated requirements.

(12 marks)

Q2 Question **Q2(a)** to **Q2(c)** are based on the following scenario:

SAVA Bhd. was assigned by Ministry of Education to develop a video streaming system to enable online educational video on demand services. The video content is captured and stored on an HTTP server and is delivered using HTTP. Video is streamed over the Internet so that the client devices does not have to download the entire video file before playing it. The streaming system should employ HTTP adaptive bitrate streaming to handle multiple speed of connectivity.

(a) Recommend a multimedia streaming implementation that is most suitable for the given scenario with appropriate justification.

(4 marks)

(b) Suggest the best multimedia streaming technique if the company required to implement HTML5 as their client's platform with appropriate justification.

(4 marks)

(c) Draw the appropriate and complete high-level architecture of the suggested video streaming technique as answered in **Q2(b).**

(12 marks)

Q3 Question **Q3(a)** to **Q3(c)** are based on the following scenario:

MRM Labs Sdn. Bhd. was hired by Ministry of Education to develop interactive e learning content for the new KSSR standard. All content must be complied to the Shareable Content Object Reference Model (SCORM) standard. All interactive e learning content shall consist of all media elements. Pupil progress shall be recorded and can be monitored by parents and teachers.

(a) Suggest the best way the multimedia data is structured with appropriate justification.

(4 marks)

(b) Recommend **TWO (2)** most suitable Multimedia Database Management System (MMDBMS) design approach based on your answer in **Q3(a)** with appropriate justification.

(8 marks)

(c) Elaborate **ONE (1)** content-based retrieval technique that can be applied in the recommended MMDBMS design approach as answered in **Q3(b)**.

(8 marks)

Q4 Question **Q4(a)** until **Q4(c)** are based on the following **Figure Q4**:

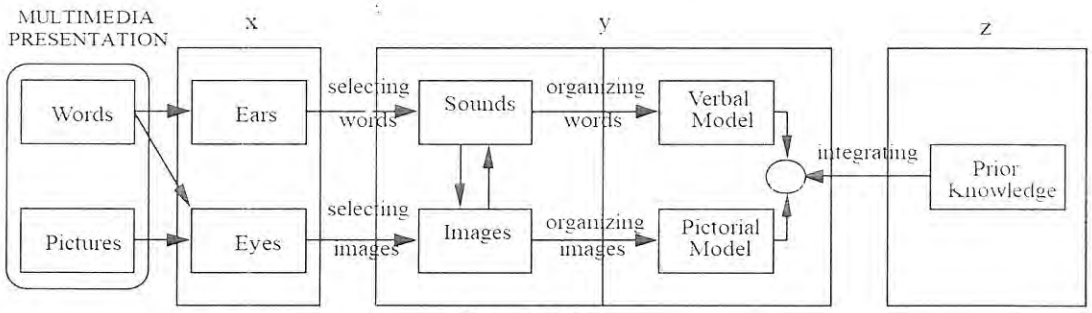

Figure Q4

(a) Elaborate the relationships of component x, y and z in **Figure Q4**.

(10 marks)

(b) Elaborate **THREE (3)** metaphors of multimedia learning related to **Figure Q4**.

(6 marks)

(c) Discuss the importance of theory in the given **Figure Q4** in developing multimedia learning application.

(4 marks)

- END OF QUESTIONS -