UTHM
Universiti Tun Hussein Onn Malaysia

UNIVERSITI TUN HUSSEIN ONN MALAYSIA

FINAL EXAMINATION
SEMESTER II
SESSION 2017/2018

COURSE NAME	:	DIGITAL MEDIA PROCESSING
COURSE CODE	:	BIM 33303
PROGRAMME CODE	:	BIM
EXAMINATION DATE	:	JUNE / JULY 2018
DURATION	:	3 HOURS
INSTRUCTION	:	ANSWER **ALL** QUESTIONS

TERBUKA

THIS QUESTION PAPER CONSISTS OF **FOUR (4)** PAGES

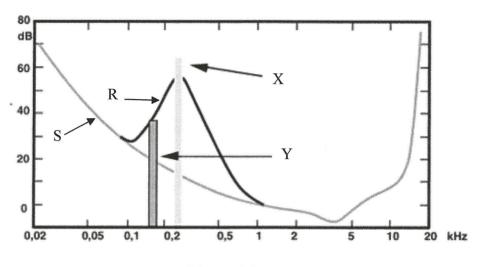**Q1** Answer **Q1(a) – Q1(b)** based on **Figure Q1** below.

Figure Q1

(a) State the labels for R, S, X and Y.

(6 marks)

(b) Discuss what is shown in **Figure Q1**.

(6 marks)

Q2 (a) By using **ONE (1)** everyday example/analogy, explain how a dynamic processor works.

(6 marks)

(b) Discuss the difference between compression and expansion in dynamics processing.

(6 marks)

Q3 (a) List **THREE (3)** principal Analogue Video Signal formats.

(6 marks)

(b) Explain **TWO (2)** advantages of video.

(4 marks)

Q4   Answer **Q4(a)** – **Q4(d)** based on the source video `rhino.avi`. Write a Matlab code for the following tasks:

(a)   Create an object that contains properties of the video.

(2 marks)

(b)   Determine the height and width of the video frames.

(4 marks)

(c)   Identify other supported video file formats.

(2 marks)

(d)   Play the video at 30fps.

(2 marks)

Q5   (a)   Explain the underlying idea of digital video coding/compression.

(10 marks)

(b)   Draw **ONE (1)** example **EACH** to differentiate between spatial redundancy and temporal redundancy.

(6 marks)

Q6   (a)   How can motion be detected?

(2 marks)

(b)   Discuss **TWO (2)** conditions where block-based motion estimation is not applicable.

(6 marks)

(c)   What should you assume when using motion to perform video segmentation.

(2 marks)

Q7   Advancement in audio and video signal processing has increased the quality of life. However, many challenges still exists. Choose **ONE (1)** audio or video processing application and suggest solutions to current challenges.

(10 marks)

- END OF QUESTION -

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