

BITS Pilani, Dubai Campus, Academic City, Dubai.

Comprehensive Examination Question Paper

II Semester 2012-2013

Degree: B.E.(Hons.)

Course No : EA C473 Course Title: Multimedia Computing

Date: 05/06/2013 Wednesday Time: 3 hours AN Total marks: 80

Weightage: 40% Data provided are complete. Closed Book

This question paper has 2 pages.

Answer all Questions.

1. Mention the names of the basic steps in the JPEG compression process. [2 M]
2. Distinguish between an AUDITORY DISPLAY and TACTILE DISPLAY. [2 M]
3. Mention the names of the layers in the MULTIMEDIA SYNCHRONIZATION REFERENCE MODEL. [2 M]
4. Draw the diagram corresponding to the AUDIO STREAM in MPEG-1 standard. [2 M]
5. What is VIEW-SPECIFIC and SIMULTANEOUS DATA ACCESS in an Multimedia DBMS? [2 M]
6. Distinguish between MOTION DYNAMICS & UPDATE DYNAMICS in ANIMATION. [2 M]
7. Draw the **QUICKTIME Architecture** Diagram w.r.t. Multimedia OS. [5 M]
8. Explain MEDIA PREPARATION w.r.t. Multimedia Application Architecture. [5 M]
9. Write a technical note on each of the following Multimedia Service Classes: [5 M]
 - a. Real-Time
 - b. Priority Data
 - c. Silver
 - d. Best Effort
 - e. Bronze
10. Explain in brief the following w.r.t. Compact Disk Digital Audio (CD-DA):
 - a) Eight-to-Fourteen Modulation
 - b) Areas: *Lead-In, Program and Lead-Out*. [5 M]
11. Explain the principles and mechanisms for DIRECT MANIPULATION in multimedia user interface. [5 M]
12. Distinguish between DITHERING & ANTI-ALIASING in images. [5 M]
13. Distinguish between MIDI and DIGITAL AUDIO. [5 M]
14. The following is the quantized sequence of Samples for an audio signal.
22, 24, 24, 28, 28, 28, 25, 26, 26, 26, 21, 19, 20, 20, 22, 24, 24, 24, 23, 24, 20, 16, 10, 10, 8, 11, 6, 9, 9, 12, 15, 19
Encode the above quantized sequence using DPCM. [3 M]

P.T.O.

15. The following **intensity values** in an image are to be transmitted using HUFFMAN CODING:

140	60	40	30	4	3	0	0
70	48	30	3	4	1	0	0
50	48	4	4	2	0	0	0
40	60	5	5	1	0	0	0
5	4	30	0	0	0	0	0
3	2	3	40	0	0	0	0
1	1	1	0	0	0	0	0
2	2	2	0	0	0	0	0

Construct the HUFFMAN Coding Tree for the above intensity values present in the above image and *determine* the number of bits required to code each intensity value.

[10 M]

16. Consider the transmission of a message comprising a string of characters. The probabilities of each character is given below:

$$p(\mathbf{I})=0.45 \quad p(\mathbf{L})=0.30 \quad p(\mathbf{N})=0.20 \quad p(\mathbf{O})=0.05$$

Using ARITHMETIC CODING,

a) **Encode** the string **LION**

b) **Decode 0.6248** [into a 4 letter string]

[10 M]

17. Construct Table II for dictionary-based LZW Compression Algorithm, as shown below (algorithm need not be written; **only the table entries are to be filled for successive steps, as necessary**).

[10 M]

Let the STRING TABLE (dictionary) initially contains only 3 characters with codes as shown in Table 1.

Table 1

Code	String
1	X
2	O
3	R

If the Input String is

XORRXORXXOROXOOOXORXOROXOROXORXORXOXO

write the output codes for the above input string.

TABLE II

s	c	output	code	string
			1	X
			2	O
			3	R
.....

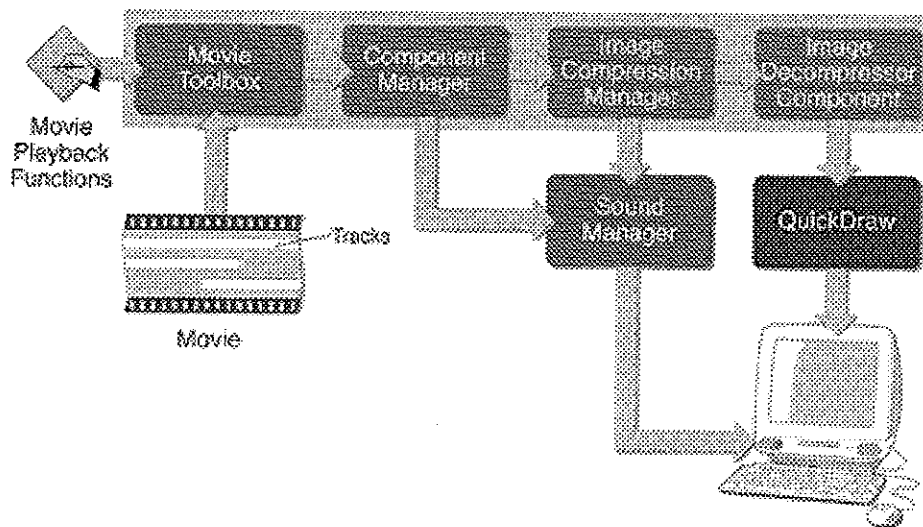
BITS Pilani, Dubai Campus, Academic City, Dubai.
Comprehensive Examination Marking / Answering Scheme
II Semester 2012-2013

Degree: B.E.(Hons.)

Course No : EA C473 Course Title: Multimedia Computing
Date: 05/06/2013 Wednesday Time: 3 hours Total marks: 80
Weightage: 40% Data provided are complete. ***Closed Book***

1. Mention the names of the basic steps in the JPEG compression process.
Picture Preparation, Picture Processing, Quantization, Entropy Encoding. [2 M]
2. Distinguish between an AUDITORY DISPLAY and TACTILE DISPLAY.
auditory displays: synthetic sounds with virtual objects. [2 M]
Tactile displays: sense of touch and movement.
3. Mention the names of the layers in the MULTIMEDIA SYNCHRONIZATION REFERENCE MODEL. [2 M]
Media, Stream, Object, Specification.
4. Draw the diagram corresponding to the AUDIO STREAM in MPEG-1 standard. [2 M]
3 slot layers [4B, 1B, 1B], samples [fixed no], playing times for different frequencies *8ms for 48kHz, 8.7ms for 44.1Khz, 12ms for 32 kHz* [2 M]
5. What is VIEW-SPECIFIC and SIMULTANEOUS DATA ACCESS in an Multimedia DBMS?
Consistent access to shared data by several applications using different queries. [2M]
6. Distinguish between MOTION DYNAMICS & UPDATE DYNAMICS in ANIMATION.
a) time varying positions b) shape, color, transparency , structure and texture of an object, changes in lighting, camera position, orientation and focus. [2 M]
8. Media Preparation [5 M]
 Multimedia I/O hardware + software
 Audio support Multiple-channel digital sound tracks, interaction via helmet
 Video support Video board + digitizers (up to 60 fps HDTV)
 Graphical displays Normal, head-mounted, surrounded displays, holography

 Scanner devices Image scanners, photo scanners (>2000 pixels/inch)
 Recognition devices
 Tracking devices



9. Write a technical note on each of the following Multimedia Service Classes:

Real-Time (also *Conversational*): two-way traffic, low latency and jitter, possibly with prioritized delivery, e.g., voice telephony and video telephony.

- **Priority Data**: two-way traffic, low loss and low latency, with prioritized delivery, e.g., E-commerce applications.

- **Silver**: moderate latency and jitter, strict ordering and sync. One-way traffic, e.g., streaming video, or two-way traffic (also *Interactive*), e.g., web surfing, Internet games.

- **Best Effort** (also *Background*): no real-time requirement, e.g., downloading or transferring large files (movies).

- **Bronze**: no guarantees for transmission.

[5*1=5M]

10. Explanation regarding Compact Disk Digital Audio (CD-DA):

a) Eight-to-Fourteen Modulation

b) Areas: *Lead-In, Program and Lead-Out*.

[2.5+2.5 M]

11. Explain the principles and mechanisms for **DIRECT MANIPULATION** in multimedia user interface.

Multimedia UI : requirements, characteristics, classification, benefits, guidelines, tools
5*1=5 M

12. Distinguish **DITHERING & ANTI-ALIASING** in images.

[2.5+2.5 M]

Dither patterns and removal of stair case effect explanation or diagram.

13. Distinguish between **MIDI** and **DIGITAL AUDIO**.

any 5 differences between DA and MIDI. [5*1=5 M]

Marking / Answering Scheme EA C473 Multimedia Computing

Digital Audio

- _ Digital representation of physical sound waves
- _ File size is large if without compression
- _ Quality is in proportion to file size
- _ More software available
- _ Play back quality less dependent on the sound sources
- _ Can record and play back any sound including speech

MIDI

- _ Abstract representation of musical sounds and sound effects
- _ MIDI files are much more compact
- _ File size is independent to the quality
- _ Much better sound if the sound source is of high quality
- _ Need some music theory
- _ Cannot generate speech

14. The following is the quantized sequence of Samples for an audio signal.

22, 24, 24, 28, 28, 28, 25, 26, 26, 26, 21, 19, 20, 20, 22, 24, 24, 24, 23, 24, 20, 16, 10, 10, 8, 11, 6, 9, 9, 12, 15, 19

Encode the above quantized sequence using DPCM. [1+1+1 M]

DPCM values: 22, 2, 0, 4, 0, 0, -3, 1, 0, 0, -5, -2, 1, 0, 2, 2, 0, 0, -1, 1, -4, -4 -6,
0, -2, 3, -5, 3, 0, 3, 3, 4

15. The following **intensity values** in an image are to be transmitted using HUFFMAN CODING: *Construct* the HUFFMAN Coding Tree for the above intensity values present in the above image and *determine* the number of bits required to code each intensity value.

140	60	40	30	4	3	0	0
70	48	30	3	4	1	0	0
50	48	4	4	2	0	0	0
40	60	5	5	1	0	0	0
5	4	30	0	0	0	0	0
3	2	3	40	0	0	0	0
1	1	1	0	0	0	0	0
2	2	2	0	0	0	0	0

Marking / Answering Scheme EA C473 Multimedia Computing

Huffman Coding : Table Generation, Initial Tree, Intermediate steps & Final Tree, codes
2 + 1+5 + 2 M.

16. Consider the transmission of a message comprising a string of characters. The probabilities of each character is given below:

$p(I)=0.45$ $p(L) = 0.30$ $p(N) = 0.20$ $p(O) = 0.05$

Using ARITHMETIC CODING,

a) **Encode** the string **LION**

b) **Decode 0.6248** [into a 4 letter string]

Initial Step, successive steps, Coding & Decoding : 2 * (1+3+1) M

17. LZW Algorithm : Correct Entries in table : $10*1=10$ M

BITS Pilani – Dubai Campus Academic City, Dubai.
IV Year II Semester 2012-2013
Degree: B.E. Hons. *Elective QUIZ II*
Course No : EA C473 Course Title: Multimedia Computing
Date: 17/4/13 Wednesday Time: 20 min. (12.15-12.35) Total marks: 06
Weightage: 3% Venue : 215 ***Closed Book.***
This question paper has 2 pages [use backside for rough work]

SET A

IDNO:

Name:

Write answers in the space provided in question paper. Answer all questions.

1. Give an example scenario for a heterogeneous multimedia query. [1 M]

2. What is Substitution Relation in a multimedia database system? [1 M]

3. What are the factors considered for AESTHETICS in a multimedia user interface?
[1 M]

BITS Pilani – Dubai Campus Academic City, Dubai.
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This question paper has 2 pages [use backside for rough work]

IDNO: **SET A**
Name:

Scheme.

Write answers in the space provided in question paper. Answer all questions.

1. Give an example scenario for a heterogeneous multimedia query. [1 M]

query involving multiple media

2. What is Substitution Relation in a multimedia database system? [1 M]

different kinds of presentations
of same info.
eg n: tables, graphs, animation

3. What are the factors considered for AESTHETICS in a multimedia user interface?
[1 M]

- color comb
- chr set
- resolution
- form of window

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SET A

IDNO:

Name:

Scheme

4. Differentiate between ICON and MICON in a multimedia Interface. [1 M]

ICON : IMG

MICON : MOTION VIDEO

5. What is Long transaction in a multimedia database system?

[1 M]

*retrieval of a movie,
retrieval of vol. data in a
reliable way. long time.*

6. How can you provide a context-sensitive help function in a multimedia user interface?

According to APP. state. [1 M]

Diff. help texts.

Hypermedia tech.

BITS Pilani, Dubai Campus Academic City, Dubai.

IV Year SECOND SEMESTER 2012-2013

Degree: B.E. (Hons.)

TEST II Question Paper

Course No : EA C473 Course Title: Multimedia Computing

Date: 5, May., 2013 Sunday Time: 50 min. Total marks: 20

Data provided are complete. **OPEN Book.**

Text Books / REFERENCE BOOK and class notes permitted.

This question paper has two pages.

Answer all Questions.

1. Discuss The MHEG Class Hierarchy with reference to WEB BASED LEARNING MANAGEMENT SYSTEM (conducting and evaluating a course online) for the course "Computer Programming".

[3 M]

2. What can you infer from the results of the experiments on QOS parameters for POINTER Synchronization?

[3 M]

3. **Construct Table II** for dictionary-based LZW Compression Algorithm as shown below (algorithm need not be written; **only the table entries are to be filled for successive steps as necessary**).

Let the STRING TABLE (dictionary) initially contains only 2 characters with codes as shown in Table 1.

Table 1

Code	String
1	W
2	E

If the Input String is **WWEWEWEWEWEWEWEWEWEWEWE** write the *output codes* for the above input string.

TABLE II

s	c	output	code	string
			1	W
			2	E
...
...

(Draw this table with as many rows, as necessary)

[6 M]

P.T.O.

4. Consider the transmission of a message comprising a string of characters. The probabilities of each character is given below:

$p(D)=0.40$ $p(I) = 0.30$ $p(K) = 0.20$ $p(S) = 0.10$

Using ARITHMETIC CODING,

- a) Encode the string DISK
- b) Decode 0.2511 [into a 4 letter string]

[6 M]

5. What is the purpose of SCALABLE MODES in MPEG-2 ?

[2 M]

BITS Pilani, Dubai Campus Academic City, Dubai.
IV Year SECOND SEMESTER 2012-2013

Degree: B.E. (Hons.)

TEST II MARKING / ANSWERING SCHEME

Course No : EA C473 Course Title: Multimedia Computing

Date: 5/5/13 Time: 50 min. Total marks: 20

Data provided are complete. **OPEN Book.**

Text Books / REFERENCE BOOK and class notes permitted.

1. MHEG Class Hierarchy with reference to WEB BASED LEARNING
MANAGEMENT SYSTEM for the course "Computer Programming".

Application with classes ACTION, LINK, SCRIPT (BEHAVIOUR)

USER INTERACTION selection, modification), MACRO, DESCRIPTOR and
other subclasses, as necessary, COMPONENT, COMPOSITE. [3 M]

2. Pointer Synchronization

Areas:

- In sync: QoS -500 ms, +750 ms
- Transient
- Out of sync

[3 M]

3. LZW coding : correct entries;

6 M

4. ARITHMETIC CODING,

Consider the transmission of a message comprising a string of characters. The
probabilities of each character is given below:

$p(D)=0.40$ $p(I) = 0.30$ $p(K) = 0.20$ $p(S) = 0.10$

Using ARITHMETIC CODING,

- b) Encode the string DISK
- b) Decode 0.2510 [into a 4 letter string]

Initial Step, successive steps, Coding & Decoding : $2 * (0.5+2+0.5)$ M

5. What is the purpose of SCALABLE MODES in MPEG-2 ?

Prioritize video data and complexity division.

[2 M]

Spatial, Data, Temporal, SNR scalabilities

BITS Pilani, Dubai Campus, Academic City, Dubai.

IV Year SECOND SEMESTER 2012-2013

Degree: B.E. (Hons.)

TEST I Question Paper

Course No : EA C473 Course Title: Multimedia Computing

Date: 18, Mar., 2013 Monday Time: 50 min. Total marks: 25

Data provided are complete. **Closed Book.**

This question paper has one page.

Answer all Questions.

1. Draw the diagram for the following Chroma Subsampling Scheme
w.r.t. digital video: **4:4:4** [3 M]
2. What is FULL Explicit Control in Animation ? Mention an example in this category.
[3 M]
3. Draw the schematic (block diagram) for JPEG ENCODER. [5 M]
4. A photograph of (6 X 8 inches) is scanning in 300 dpi resolution and **24 bit colour** (per pixel). The image is then saved in a JPEG file with 1:20 compression ratio. It is then used on a web page. If a viewer connecting to internet uses a modem of transfer rate 2048 Kilobits / sec., how long will it take to download the compressed image to his/her computer?
[3 M]
5. a) Find SSD [sum of squared differences] correlation and SAD [sum of absolute differences] correlation for the following data pertaining to MPEG P-Frames:

MATCH WINDOW [macro-block]	SEARCH WINDOW
7 9 5 8	6 10 5 9
5 4 7 6	4 5 7 6
9 8 9 2	10 7 10 3

[3M]

- b) Which type of frame in MPEG 1 offers highest compression level? [1 M]

6. The following character string is to be transmitted using HUFFMAN CODING:

LINUXMULTIUSERTIMESHARINGMULTITASKINGOPERATING

Construct the HUFFMAN Coding Tree for the letters present in the above string and *determine* the number of bits required to code each letter. [7 M]

BITS Pilani, Dubai Campus, Academic City, Dubai.
IV Year SECOND SEMESTER 2012-2013

Degree: B.E. (Hons)

TEST I Answering / Marking Scheme

Course No : EA C473 Course Title: Multimedia Computing

Date: 18/3/13 Monday Time: 50 min. Total marks: 25

Data provided are complete. **Closed Book.**

Answer all Questions.

1. Draw the diagram for the following Chroma Subsampling Scheme w.r.t. digital video:

4:4:4

[2+1 M]

Diagram with Y Cb and Cr and Labels

2. What is FULL Explicit Control in Animation ? Mention an example in this category.

Full Explicit Control: animator describes changes like Rotation, Translation, Scaling, key frames, interpolation methods. Any practical example such as Java Applet for Towers of Hanoi or any suitable example. [2+1 M]

3. Draw the schematic (block diagram) for JPEG ENCODER.

[5 M]

JPEG Encoder Block diagram:

Source Image, I.P., B.P., FDCT, QN & Tables, Vectoring (DE RLE), HC, Tables, frame builder, encoded bit stream. [5 mks 0.5 for each]

4. A photograph of (6 X 8 inches) is scanning in 300 dpi resolution and **24 bit colour** (per pixel). The image is then saved in a JPEG file with 1:20 compression ratio. It is then used on a web page. If a viewer connecting to internet uses a modem of transfer rate 2048 Kilobits / sec., how long will it take to download the compressed image to his/her computer? [3 M]

$$6 * 300 * 8 * 300 * 24$$

$$\hline 20 * 2048 * 1024$$

2.47 sec. [1+1 +1 for the steps in calculation and final answer]

5. a) Steps and Calculations for SSD and SAD [1+1 0.5+0.5 M]

5.b) Which type of frame in MPEG 1 offers highest compression level? B- Frame. [1 M]

6. Huffman Coding : Table Generation, Intial Tree, Intermediate steps & Final Tree, codes [1 + 1+4 + 1 M]

46 (Not noted)
297
2 (17)

BITS Pilani, Dubai Campus, Academic City, Dubai.
IV Year SECOND SEMESTER 2012-2013

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Answer all Questions.

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w.r.t. digital video: **4:4:4** [3 M]
2. What is FULL Explicit Control in Animation ? Mention an example in this category.
[3 M]
3. Draw the schematic (block diagram) for JPEG ENCODER. [5 M]
4. A photograph of (6 X 8 inches) is scanning in 300 dpi resolution and **24 bit colour** (per pixel). The image is then saved in a JPEG file with 1:20 compression ratio. It is then used on a web page. If a viewer connecting to internet uses a modem of transfer rate 2048 Kilobits / sec., how long will it take to download the compressed image to his/her computer? [3 M]
5. a) Find SSD [sum of squared differences] correlation and SAD [sum of absolute differences] correlation for the following data pertaining to MPEG P-Frames:

MATCH WINDOW [macro-block]	SEARCH WINDOW
7 9 5 8	6 10 5 9
5 4 7 6	4 5 7 6
9 8 9 2	10 7 10 3

[3M]

- b) Which type of frame in MPEG 1 offers highest compression level? [1 M]

6. The following character string is to be transmitted using HUFFMAN CODING:

LINUXMULTIUSERTIMESHARINGMULTITASKINGOPERATING

Construct the HUFFMAN Coding Tree for the letters present in the above string and *determine* the number of bits required to code each letter. [7 M]

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BITS Pilani, Dubai Campus, Academic City, Dubai.

IV Year SECOND SEMESTER 2012-2013

Degree: B.E. (Hons)

TEST I Answering / Marking Scheme

Course No : EA C473 Course Title: Multimedia Computing

Date: 18/3/13 Monday Time: 50 min. Total marks: 25

Data provided are complete. **Closed Book.**

Answer all Questions.

1. Draw the diagram for the following Chroma Subsampling Scheme w.r.t. digital video:
4:4:4 [2+1 M]

Diagram with Y Cb and Cr and Labels

2. What is FULL Explicit Control in Animation ? Mention an example in this category.
Full Explicit Control: animator describes changes like Rotation, Translation, Scaling, key frames, interpolation methods. Any practical example such as Java Applet for Towers of Hanoi or any suitable example. [2+1 M]

3. Draw the schematic (block diagram) for JPEG ENCODER. [5 M]

JPEG Encoder Block diagram:

Source Image, I.P., B.P., FDCT, QN & Tables, Vectoring (DE RLE), HC, Tables, frame builder, encoded bit stream. [5 mks 0.5 for each]

4. A photograph of (6 X 8 inches) is scanning in 300 dpi resolution and **24 bit colour** (per pixel). The image is then saved in a JPEG file with 1:20 compression ratio. It is then used on a web page. If a viewer connecting to internet uses a modem of transfer rate 2048 Kilobits / sec., how long will it take to download the compressed image to his/her computer? [3 M]

$$6 * 300 * 8 * 300 * 24$$

$$\frac{\text{-----}}{20 * 2048 * 1024}$$

2.47 sec. [1+1 +1 for the steps in calculation and final answer]

5. a) Steps and Calculations for SSD and SAD [1+1 0.5+0.5 M]
b) Which type of frame in MPEG 1 offers highest compression level? B- Frame. [1 M]
6. Huffman Coding : Table Generation, Intial Tree, Intermediate steps & Final Tree, codes [1 + 1+4 + 1 M]

Course No : EA C473 Course Title: Multimedia Computing
Date: 27, Feb., 2013 Wednesday Time: 20 min. Total marks: 08
Weightage: 8% Venue : 215 *Closed Book*.
This question paper has 2 pages [back to back]

IDNO: _____

Name: _____

Write answers in the space provided in question paper. Answer all questions.

Note: _____ means one or more words to be filled within a line.

1. What is an INFORMATION EXCHANGE MEDIUM ? [1 M]

2. What is a Weakly Periodic Data Stream ? [1 M]

3. A multimedia presentation has 30 minutes of CD-Quality Digital Audio in .wav files.

Given the following parameters for CD-DA,

Sample Frequency : 44.1 KHz

Quantization : 16 bits / sample

No of Channels = 2 (assume stereo)

What is the storage capacity required for these files in MB ?

[1.5 M]

4. In Amplitude Envelop for MIDI, the time it takes for the envelop to go from the Peak

Level to the Sustain Level is called _____

[0.5 M]

ROUGH WORK ONLY in this space

[P.T.O. after finishing this page]

BITS Pilani, Dubai Campus, Academic City, Dubai.
IV Year Second Semester 2012-2013
Degree: B.E. Hons. Branch: C.S. / EEE / MECH / EIE / BIOTECH / ECE
QUIZ I (SET A)

Course No : EA C473 Course Title: Multimedia Computing
Date: 27, Feb., 2013 Wednesday Time: 20 min. Total marks: 08
Weightage: 8% Venue : 215 ***Closed Book***.
This question paper has 2 pages [back to back]

IDNO:

Name:

4. What is an Instrument Patch in MIDI? [1 M]

6. Define Spatial dimensions w.r.t. representation space. [1 M]

7. Distinguish between OPEN LDU and CLOSED LDU (note: LDU: Logical data Unit). [1 M]

8. The **max data rate** for a Noisy Channel = _____ bits/sec. [1 M]

ROUGH WORK ONLY in this space

M/A bcheme

BITS Pilani, Dubai Campus, Academic City, Dubai.

IV Year Second Semester 2012-2013

Degree: B.E. Hons. Branch: C.S. / EEE / MECH / EIE / BIOTECH / ECE

QUIZ I (SET A)

Course No : EA C473 Course Title: Multimedia Computing

Date: 27, Feb., 2013 Wednesday Time: 20 min. Total marks: 08

Weightage: 8% Venue : 215 **Closed Book**.

This question paper has 2 pages [back to back]

IDNO:

Name:

Write answers in the space provided in question paper. Answer all questions.

Note: _____ means one or more words to be filled within a line.

1. What is an INFORMATION EXCHANGE MEDIUM? [1 M]

combined storage and transmission medium

2. What is a Weakly Periodic Data Stream? [1 M]

Time interval between successive packets is not same, but total time T for a sequence of packets ($T = T_1 + T_2 + T_3$) is constant.

3. A multimedia presentation has 30 minutes of CD-Quality Digital Audio in .wav files.

Given the following parameters for CD-DA,

Sample Frequency : 44.1 KHz

Quantization : 16 bits / sample

No of Channels = 2 (assume stereo)

What is the storage capacity required for these files in MB?

[1.5 M]

$$2 \times \frac{16}{8} \times 44100 \times 30 \times 60 \text{ Bytes}$$

$$4 \times 44100 \times 1800 = 317.520000 \text{ MB} /$$

or

$$= 302.81 \text{ MB}$$

4. In Amplitude Envelop for MIDI, the time it takes for the envelop to go from the Peak

Level to the Sustain Level is called

DECAY

[0.5 M]

ROUGH WORK ONLY in this space

[P.T.O. after finishing this page]

M/A scheme

BITS Pilani, Dubai Campus, Academic City, Dubai.

IV Year Second Semester 2012-2013

Degree: B.E. Hons. Branch: C.S. / EEE / MECH / EIE / BIOTECH / ECE

QUIZ I (SET A)

Course No : EA C473 Course Title: Multimedia Computing

Date: 27, Feb., 2013 Wednesday Time: 20 min. Total marks: 08

Weightage: 8% Venue : 215 **Closed Book**.

This question paper has 2 pages [back to back]

IDNO:

Name:

4. What is an Instrument Patch in MIDI?

[1 M]

specific Instrument or sound effect.

6. Define Spatial dimensions w.r.t. representation space.

[1 M]

NOT dependent on Time. (images/text/ graphic) 2D/3D

7. Distinguish between OPEN LDU and CLOSED LDU (note: LDU: Logical data Unit).

[1 M]

open LDU: Time is not known in adv.
closed LDU: Time is known.

8. The max data rate for a Noisy Channel = $\frac{1}{2} \log_2 \left(1 + \frac{S}{N} \right)$ bits/sec. [1 M]

ROUGH WORK ONLY in this space