

26 C TRIBHUVAN UNIVERSITY
 INSTITUTE OF ENGINEERING
Examination Control Division
 2075 Bhadra

Exam.	Regular		
Level	BE	Full Marks	80
Programme	BCT	Pass Marks	32
Year / Part	IV / II	Time	3 hrs.

Subject: - Multimedia System (Elective III) (CT78503)

- ✓ Candidates are required to give their answers in their own words as far as practicable.
- ✓ Attempt **All** questions.
- ✓ The figures in the margin indicate **Full Marks**.
- ✓ Assume suitable data if necessary.

1. Explain the global structure views for multimedia systems and also briefly explain the multimedia application development method. (5+4)
2. Explain in detail the process of speech recognition and generation. Calculate the file size in bytes for a 30 second recording at 44.1 KHz, 8 bits resolution stereo sound. (5+5)
3. What are bitmap images? Explain the advantages and disadvantages of bitmap over vector images. (3+6)
4. Differentiate between video and animation. Explain the various techniques associated with animation and also explain the various software tools available for animation nowadays? (4+7)
5. Compare JPEG and MPEG. What are the steps to create the Huffman code tree? Explain with example how Huffman code reduce the file size? (4 +4+6)
6. Discuss the user interface design process for multimedia with block diagram. (9)
7. Explain the abstraction levels of the programming of multimedia with block diagram. (9)
8. Explain the applications of multimedia in media entertainment such as interactive TV and video on demand. (9)

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36C TRIBHUVAN UNIVERSITY
INSTITUTE OF ENGINEERING
Examination Control Division
2074 Bhadra

Exam.	Regular		
Level	BE	Full Marks	80
Programme	BCT	Pass Marks	32
Year / Part	IV / II	Time	3 hrs.

Subject: - Multimedia System (Elective III) (CT78503)

- ✓ Candidates are required to give their answers in their own words as far as practicable.
- ✓ Attempt All questions.
- ✓ The figures in the margin indicate Full Marks.
- ✓ Assume suitable data if necessary.

1. What are the different stages in multimedia application development? Explain with example. (3+6)
2. Explain about audio hardware and audio software. Differentiate between MIDI over digital audio. (5+5)
3. Explain the steps of the JPEG compression process in detail. (9)
4. Different colour models are often used in different applications. What is the CMYK colour model? Give an application in which this colour model is mostly used and explain the reason. (-3+3+5)
5. Explain why lossy data compression is sometimes preferred over lossless. Justify. A certain source emits symbols {A,B, C, D, E} with corresponding probabilities $P(A)=0.06$, $P(B)=0.48$, $P(C)=0.02$, $P(D)=0.20$, $P(E)=0.24$. Create a Huffman code tree and also derive the Huffman code for each symbol. (4+5+5)
6. Explain the general design guidelines for the multimedia user interface design and also mention the multimedia interface components. (5+4)
7. Explain the abstraction levels of the programming use in multimedia system with block diagram (9)
8. Explain the applications of multimedia in Video Conference system with example. (9)

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2074 Magh

Exam.	Back		
Level	BE	Full Marks	80
Programme	BCT	Pass Marks	32
Year / Part	IV / II	Time	3 hrs.

Subject: - Multimedia System (*Elective III*) (CT78503)

- ✓ Candidates are required to give their answers in their own words as far as practicable.
- ✓ Attempt **All** questions.
- ✓ The figures in the margin indicate **Full Marks**.
- ✓ Assume suitable data if necessary.

1. Explain the components used to build the multimedia systems. (9)
2. Explain the Image recognition steps in detail. (10)
3. What are the steps of the JPEG compression process? Explain. (9)
4. Explain the Dithering technique. Differentiate between RGB and CMY colour models with example. (5+6)
5. Why do we need data compression? Explain the Huffman coding algorithm with example. (4+10)
6. Explain the steps of the multimedia user Interface design with example. (9)
7. What are the abstraction levels of the programming of multimedia system? Explain with block diagram. (9)
8. Explain the applications of multimedia in media communication and entertainment. (9)

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36 C TRIBHUVAN UNIVERSITY
INSTITUTE OF ENGINEERING
Examination Control Division
2073 Bhadra

Exam.	Regular		
Level	BE	Full Marks	80
Programme	BCT	Pass Marks	32
Year / Part	IV / II	Time	3 hrs.

Subject: - Multimedia System (Elective III) (CT78503)

- ✓ Candidates are required to give their answers in their own words as far as practicable.
- ✓ Attempt All questions.
- ✓ The figures in the margin indicate Full Marks.
- ✓ Assume suitable data if necessary.

1. Explain the various phases of multimedia application development. (9)
2. Differentiate between MIDI and WAV audio formats. ? Calculate the file size in bytes for a 20 second recording at 44.1 KHz, 16 bits resolution stereo sound. (5+5)
3. Define dithering. Explain in detail of Image recognition steps with example. (3+6)
4. Compare between Video and animation. Explain the HSB color model and YUV colour model. (4+7)
5. Differentiate between loss-less and Lossy data compression. What are the steps to create the Huffman code tree? Explain with example. (6 +8)
6. Discuss the design guidelines for multimedia user Interface with example. (9)
7. Explain the abstraction levels of the programming with respect to multimedia data and their relations with block diagram. (9)
8. Explain the applications of multimedia in media entertainment such as interactive video and audio. (9)

Exam.	Regular		
Level	BE	Full Marks	80
Programme	BCT	Pass Marks	32
Year / Part	IV / II	Time	3 hrs.

Subject: - Multimedia System (Elective III) (CT78503)

- ✓ Candidates are required to give their answers in their own words as far as practicable.
- ✓ Attempt All questions.
- ✓ The figures in the margin indicate Full Marks.
- ✓ Assume suitable data if necessary.

1. Explain the global structure of multimedia system with diagram. (9)
2. Differentiate between MIDI and digital audio. Explain the Computer representation of sound with example. (4+6)
3. What is image enhancement? The table on the left below represents an indexed image. The table on the right is colour index table. What is the colour of the following pixels: (0,2), (1,1),(1,3) (2,1), (2,2),(3,0). (3+6)

	0	1	2	3
0	2	3	0	3
1	7	2	1	5
2	5	6	4	4
3	2	7	5	0

	R	G	B
0	0	255	0
1	255	0	0
2	0	0	255
3	0	0	0
4	255	255	0
5	127	127	127
6	255	0	255
7	255	255	255

4. Differentiate between Video and animation. Explain the RGB color model and CMY colour model. (4+7)
5. Explain the data compression methods. Explain the steps to create Huffman code tree with example. (6+8)
6. What are the design guidelines for designing the multimedia user Interface for Multimedia system? Explain with example. (9)
7. Explain the Libraries, system software, higher programming languages and object-oriented approaches in terms of multimedia system. (9)
8. Explain the applications of multimedia in media entertainment. (9)

Exam.	New Back (2066 & Later Batch)		
Level	BE	Full Marks	80
Programme	BCT	Pass Marks	32
Year / Part	IV / II	Time	3 hrs.

Subject: - Multimedia System (Elective III) (CT78503)

- ✓ Candidates are required to give their answers in their own words as far as practicable.
- ✓ Attempt All questions.
- ✓ The figures in the margin indicate Full Marks.
- ✓ Assume suitable data if necessary.

1. Compare among application domain, system domain and device domain. ✓ (9)
2. Explain the audio hardware. Calculate the file size if we record the 20 second of stereo music at 44.1 KHz with 8 bits. (5+5)
3. Differentiate between image and graphics. Explain the computer image processing with example. (3+6)
4. What is dithering technique? Differentiate between HSB color model and YUV colour model. (5+6)
5. Explain the Huffman Coding and also explain the steps to create Huffman code tree with example. (4+10)
6. Explain the general design guidelines for designing the multimedia user interface for Multimedia system with example. (9)
7. What are the abstract levels of programming of multimedia systems? Explain. (9)
8. Explain the applications of multimedia in tele-services. (9)

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36B TRIBHUVAN UNIVERSITY
INSTITUTE OF ENGINEERING
Examination Control Division
2071 Bhadra

Exam.	Regular / Back		
Level	BE	Full Marks	80
Programme	BEX, BCT	Pass Marks	32
Year / Part	IV / II	Time	3 hrs.

Subject: - Multimedia System (Elective III) (CT78503)

- ✓ Candidates are required to give their answers in their own words as far as practicable.
- ✓ Attempt All questions.
- ✓ The figures in the margin indicate Full Marks.
- ✓ Assume suitable data if necessary.

1. Explain the global structures of multimedia system with diagram. (9)
2. Explain the audio software. Calculate the file size if we record the 10 second of stereo music at 44.1 KHz with 16 bits. (4+6)
3. Distinguish between image and graphics. Explain about image synthesis, analysis and transmission. (3+6)
4. Explain the Video and Animation. Differentiate between RGB color model and CMY colour model (5+6)
5. What do you mean by data compression techniques? What are the steps to create a Huffman code tree? Explain with example. (4+10)
6. Explain with example of the structure guidelines for designing good user interface for multimedia system. (9)
7. Differentiate between higher programming language approaches and Object oriented approaches (9)
8. What are the applications of multimedia in educations? Explain. (9)
