

POKHARA UNIVERSITY

Level: Bachelor	Semester: Fall	Year : 2019
Programme: BE		Full Marks: 100
Course: Multimedia Systems		Pass Marks: 45
		Time : 3hrs.

*Candidates are required to give their answers in their own words as far as practicable.*

*The figures in the margin indicate full marks.*

*Attempt all the questions.*

- |    |  |  |     |
|----|--|--|-----|
| 1. | a)                                       | Define multimedia. Explain global structure of multimedia.   | 8   |
|    | b)                                       | With necessary diagrams explain how the sound is digitized and the sound stored in a multimedia system is played?  | 7   |
| 2. | a)                                       | What are the steps involved in Image recognition. Explain with necessary block diagram.  | 8   |
|    | b)                                       | Explain the principles of animation.   | 7   |
| 3. | a)                                       | How is progressiveness achieved in lossy DCT-mode in JPEG? Explain the different image frames in MPEG.   | 8   |
|    | b)                                       | What do you understand by the term data compression? Write its advantages in terms of multimedia computing. Differentiate between lossless and lossy compression techniques. | 7   |
| 4. | a)                                       | List out the advantages and limitation of optical disks. Explain data storage mechanism in optical disk.   | 7   |
|    | b)                                       | Explain the working principle of the Compact Disk – Magneto Optical (CD-MO).   | 8   |
| 5. | a)                                       | What is a resource in terms of multimedia? What are the phases of the resource reservation and management process? Explain different ways of reserving the resources.        | 7   |
|    | b)                                       | What is Multimedia and Hypermedia Information Coding Expert Group Techniques? Explain different types of class defined by MHEG.  | 8   |
| 6. | a)                                       | Write about the ODA and SGML document architecture.  | 8   |
|    | b)                                       | Explain QoS layered model for multimedia communication system.   | 7   |
| 7. | Write short notes on: ( <b>Any two</b> ) |  | 2×5 |
|    | a)                                       | Application subsystem of Multimedia Communication System   |     |
|    | b)                                       | Methods of controlling Animation   |     |
|    | c)                                       | Dynamics in Graphics   |     |

## POKHARA UNIVERSITY

Level: Bachelor Semester: Spring Year : 2019  
 Programme: BE Full Marks: 100  
 Course: Multimedia System Pass Marks: 45  
 Time : 3hrs.

*Candidates are required to give their answers in their own words as far as practicable.*

*The figures in the margin indicate full marks.*

*Attempt all the questions.*

- |   |    |  |    |
|---|----|--|----|
| 1.  | a) | What is multimedia and multimedia systems? Describe the global structure of multimedia systems.  | 8  |
|   | b) | With necessary diagrams explain how the sound is digitized and the sound stored in a multimedia system.  | 7  |
| 2.  | a) | Describe the applications of multimedia.   | 5  |
| <b>OR</b>   |    |  |    |
| Describe the main properties of multimedia systems. |    |  |    |
|   | b) | What is speech analysis? What are the areas of research in speech analysis?  | 5  |
|   | c) | What is an image? List the different types of image formats with brief description.  | 5  |
| 3.  | a) | How long will it take to transmit a minute long video of spatial resolution $1024 \times 786$ , 24 bits per pixel and 30 frames per second through a communication link at a constant rate of 56 Kbps. | 8  |
|   | b) | How is source coding different from entropy encoding? Describe about the JPEG compression.   | 7  |
| 4.  | a) | What is Huffman Coding? Encode the Huffman code for the symbol P, Q, R S, T, U with probabilities 0.4, 0.25, 0.13, 0.12, 0.05, 0.03, 0.02 respectively.  | 10 |
|   | b) | Explain Mode 1 and Mode 2 CD-ROM structure with block, capacity and data rate.   | 5  |
| 5.  | a) | Describe in brief about different layers in CD with suitable diagram. Also describe the audio data rate used in CD.  | 8  |
|   | b) | What are the different types of communication architecture used in multimedia systems? Describe them.  | 7  |
| 6.  | a) | How can we present multimedia information in non-linear fashion? Explain MHEG with structure and class hierarchy.  | 7  |
|   | b) | What do you understand by the term QoS? Explain QoS-layered model for the Multimedia Communication System.   | 8  |



7. Write short notes on: **(Any two)**

- a) Multimedia Workstation
- b) SGML document processing
- c) Color Encoding