

Roll No.

Total No. of Questions : 10]
(2040)

[Total No. of Printed Pages : 7

**B.C.A. (CBCS) RUSA Vith Semester
Examination**

3840

MULTIMEDIA TECHNOLOGY

Paper : BCA-0603

Time : 3 Hours]

[Maximum Marks : 70

Note :- The question paper contains *five* Parts. All questions in Part A are compulsory. Parts B, C, D and E each has *two* questions. The candidates are required to attempt *one* question each from each of these four Parts.

Part-A

1. (i) must be connected to the computer to record audio.

(a) Microphone

(b) Speaker

(c) Scanner

(d) Web camera

CA-696

(1)

Turn Over

(ii) A video consists of a sequence of :

- (a) Frames
- (b) Signals
- (c) Packets
- (d) Slots

(iii) Images can be converted into digital form with the help of

- (a) Scanner
- (b) Paint
- (c) Plotter
- (d) None of these

(iv) MPEG is used to compress :

- (a) Frames
- (b) Image
- (c) Audio
- (d) Video

(v) Jitter is introduced in multimedia data by the

- (a) Error caused during transmission
- (b) Delay between packets
- (c) Both (a) and (b)
- (d) None of these

(vi) A buffer is required for real-time traffic.

- (a) Playback
- (b) Reordering
- (c) Sorting
- (d) None of these

(vii) Full form of MIDI is :

- (a) Musical instrument data interface
- (b) Musical instrument digital interface
- (c) Musical image digital interface
- (d) Musical instrument digital image

(viii) bmp stands for

- (a) Bitmap
- (b) Bitmapping
- (c) Basemap
- (d) Basicmap

(ix) A pixel map is a matrix of dots.

- (a) One-dimensional
- (b) Two-dimensional
- (c) Three-dimensional
- (d) None of these

(x) Gzip stands for

- (a) General zip
- (b) GNU zip
- (c) Gun zip
- (d) None of these

1×10=10

2. (i) What is meant by the terms multimedia and hypermedia ? Distinguish between these two concepts.
- (ii) Illustrate the scope of multimedia in e-governance.
- (iii) What is Animation ? Explain the concept of key frames in designing animations.
- (iv) Describe the various steps in digitization and coding of audio signals.
- (v) Interactivity is important feature in any multimedia applications. What is interactivity and briefly explain what makes an application interactive ?

4×5=20

Part-B

10×1=10

3. Define Multimedia. What role of standards play in multimedia ? Why are standards necessary for compression ?

4. Briefly describe the four basic types of data redundancy that data compression algorithms can apply to audio, image and video signals.

Part-C

10×1=10

5. Describe, using a suitable diagram, the MPEG-1 audio compression algorithm.
6. What is frequency masking and what is its significance in audio coding ? In MPEG audio compression, what is frequency masking ?

Part-D

10×1=10

7. Draw block diagram of JPEG encoding and describe each of the stages. Clearly describe the inputs and outputs at each of the stages.
8. What is a colour lookup table and how is it used to represent colour ? Give advantages and disadvantages of this representation with respect to true Colour. How do you convert from true colour to color lookup table representation ?

Part-E

10×1=

9. Why is data compression necessary for multimedia activities ? Explain lossless compression and lossy compression techniques of images.
10. What is the difference between B frames and P frames in video encoding ? Describe the advantages and disadvantages of using P frames.