

2022

COMPUTER SCIENCE — HONOURS

Paper : DSE-A-4

(Multimedia and its Applications)

Full Marks : 50

The figures in the margin indicate full marks.

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

Answer **question no. 1** and **any four** questions from the rest.

1. Answer **any five** questions : 2×5
- (a) Name the colour model used most in printing trade and the colour model that represents colour as an angle from 0 to 360 degrees on the colour wheel.
 - (b) List the three commonly used sampling rates often used in multimedia for digital audio.
 - (c) Name the most widely used tool for creating animation nowadays. Why is it so popularly used?
 - (d) How is lossy-to-lossy trans-coding different from lossless-to-lossy trans-coding?
 - (e) What is SCSI?
 - (f) “Transcoding is used extensively by home theatre PC”. Why?
 - (g) How is MPEG-4 different from MPEG-2?
 - (h) How is overscan different from underscan in video displaying?
2. (a) Explain with examples, any four principles of animation needed for effective animation.
(b) What is Chroma keys? (2×4)+2
3. (a) Explain in detail, the four basic stages of a multimedia project.
(b) Name any two features that are a must for a good image editing tool. (2×4)+2
4. (a) “AVI video format is a good choice for home video recordings, whereas WEBM video format is a good choice for online videos”.— Give reasons.
(b) If a multimedia project is built on a Windows platform and then played on a Macintosh platform, will there be any difference? How does font substitution and font mapping help one in such a situation?
(c) Explain with an example, the usefulness of hypertext when going through a text document with hypertexts and one without any hypertexts. 3+(1+2)+4

Please Turn Over

5. (a) What is 3D modelling? Describe different ways of 3D modelling.
(b) What is additive color model and subtractive color model? Give examples and state why we use additive or subtractive model respectively in the examples stated above. (2+2)+(2+4)
6. (a) List down the steps that one needs to follow to bring an audio recording into a multimedia project, either in Windows or in Macintosh.
(b) For music files, 128 Kbps sampled MP3 files are good to go, whereas human voice can be sampled at 64 Kbps.— Give reason. 8+2
7. (a) List down in detail, the different variety of input devices (other than traditional ones like mouse or keyboard), that can be used for the development and delivery of a good multimedia project.
(b) List down the key features that a good video conferencing software should possess. 5+5
8. (a) “The color white is a noisy mixture of all the colors in visible spectrum”. Cite four examples that justify this statement.
(b) Describe the capabilities and limitations of bitmap, vector and 3-D image representations. 4+(3+3)
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