Multimedia System   B E IT Sem VII   19|5|14

(3 Hours)   **[Total Marks : 100**

Instructions to the candidates, if any:-

N.B. : (1) Question No. 1 is compulsory.

    (2) Attempt any four questions out of remaining six questions.

Q.1 (a) What is Multimedia? List different categories of Multimedia Software Tools with
      proper example.   (10)

    (b) [i] Define various objects used in Multimedia System.   (5)

    [ii] Explain the need of segmentation in processing in image databases.   (5)

Q.2 (a) Explain how RTP with RTCP and RSVP are used for multimedia data transmission.   (10)

    (b) Draw neat labeled diagram for a Decoder and Encoder of H.261 and explain its
      working in details   (10)

Q.3 (a) With the help of block diagram explain Baseline JPEG compression in details   (10)

    (b) Explain MIDI file format in detail.   (10)

Q. 4 (a) Explain Object based visual coding and video bit stream in MPEG-4.   (10)

    (b) List and explain different Color Model used in Image and Video.   (10)

Q.5 (a) Compare between RIFF and TIFF file formats.   (10)

    (b) Explain in detail about MPEG-4 and also compare between MPEG-2 and MPEG-7 .   (10)

Q. 6 (a) Explain Speech Coding using ADPCM and write in detail about G.726.   (10)

    (b) Explain different techniques and terminologies use in multimedia network.   (10)

Q. 7 Write short notes on (Any Four)   (20)

    i) Multimedia Presentation and Authoring

    ii) Adaptive Huffman coding

    iii) Descriptors in MPEG-4

    iv) TV trees in text databases

    v) VRML

    vi) Multimedia over Wireless Networks.

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(3 Hours) [Total Marks : 100]

N. B. (1) Question no. 1 compulsory.
 (2) Answer any four out of the remaining questions.

Q.1 Attempt 20
  a) What are major issues in data mining?
  b) Explain different OLAP operations.
  c) Difference between database and data warehouse.
  d) Write a short note on Linear regression.

Q.2 a) Explain constraint based and multilevel association rules with an example. 10
  b) Explain market basket analysis and uses of it. 10

Q.3 a) Explain BIRCH method of clustering with an example. 10
  b) Explain Regression. Write short note on Non-linear regression. 10

Q.4 a) Explain data cleaning, data transformation and Integration with an example. 10
  b) Apply Bayesian classification to predict class of new tuple
  (Nicol, Female, 1.67m), Use the following data. 10

Person ID	Name	Gender	Height	Class
1	Kristina	Female	1.6 m	Short
2	Jim	Male	2 m	Tall
3	Maggie	Female	1.9 m	Medium
4	Martha	Female	1.85 m	Medium
5	John	Male	2.8 m	Tall
6	Bob	Male	1.7 m	Short
7	Clinton	Male	1.8 m	Medium
8	Nyssa	Female	1.6 m	Short
9	Kathy	Female	1.65 m	Short

Q.5 a) What are outlier. Explain outlier analysis. 10
  b) Explain K-means clustering and solve the following with k=3 10
    {2,3,6,8,9,12,15,18,22}

Q.6 a) Explain Business Intelligence issues. 10
  b) Describe the steps involved in data mining when viewed as a process of
    Knowledge discovery. 10

Q.7 Short note on any **Three** 20
  a) Application of Web Mining
  b) Market segmentation
  c) Sequence Mining in transaction
  d) Agglomerative clustering.

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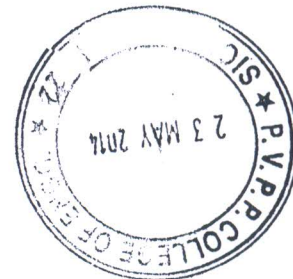
QP Code : MV-20184

(3 Hours)   [Total Marks: 100]

1) Question No.1 is compulsory
2) Attempt any four questions out of remaining Six questions.
3) Assume any data wherever required but justify the same.
4) Figures to the right indicate full Marks.

1.

  (a) Explain the properties of random numbers   05

  (b) Define the following terms –   05
      (I) Activity (II) System (III) Simulation (IV) Delay (V) Model

  (c) If the interarrival time ranges from 2 to six minutes with equal probability and random digits
      generated are 51, 27, 63, 89, 11 and 45. Generate FEL with primary events.   05

  (d) Explain Time series input model.   05

2.

  (a) Explain the steps in simulation study.   10

  (b) Distinguish between:-   10
      i) Terminating and non-terminating simulation.
      ii) Endogenous and exogenous event
      iii)Random numbers and random variates.

3.

  (a) Describe the characteristics of queuing systems. Name and explain some of the useful
      statistical models for queuing system.   10

  (b) Explain inventory system.   Discuss the cost involved in inventory systems.   10

4.

  (a) Describe the procedure to generate samples from :-   10
      i) Erlang distribution
      ii) Exponential distribution

  (b) Write down the steps for K-S test. The sequence of numbers 0.54, 0.75, 0.98, 0.12 and 0.68
      has been generated. Use K-S test with $\alpha = 0.05$ to learn whether the hypothesis that the
      numbers are uniformly distributed on the interval [0,1] can be rejected. (Critical value $D\alpha =$
      0.565)   10

5.

  (a) What do you understand by model verification and validation? Describe Briefly the various
      methods of validating input model   10

  (b) Describe initialization bias in steady-state simulation.   10

6.

  (a) Test the following random numbers for independence by runs up and down test.   10
      Take $\alpha=0.05$ and critical value $Z_{0.025} = 1.96$

[TURN OVER

(0.12, 0.01, 0.23,0.28, 0.89, 0.31,0.64, 0.28, 0.33,0.93)

(b) What are the methods used to generate random numbers?   10

7. Write short notes on (any two) :-   (2x10)   20

    a) Cobweb Model

    b) Selection of a simulation software

    c) Manufacturing system simulation