9/5/2013

B.E(I-T) Sem VII (R)

VI-F.H.Exam. April(T)-13-135

Con. 7596–13.

Data Warehousing Mining & Business Intelligence

GS–5344

(REVISED COURSE)

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

N.B. : (1) Question No. 1 is **compulsory**.
(2) Attempt any **four** questions from **remaining six** questions.
(3) Assume **suitable** data if **required**.

1. Attempt any **four** :–
   (a) Give difference between OLTP and OLAP. **5**
   (b) Explain DBSCAN. **5**
   (c) Give difference between Classification and Clustering. **5**
   (d) Explain constraint based association rule mining. **5**
   (e) Explain Regression. **5**

2. (a) List the dimension and facts for hospital management system and also draw star schema and snowflake schema. **10**
   (b) Why preprocessing is required ? **5**
   (c) Explain multidimension association rule. **5**

3. (a) What is web structure mining ? Explain Technique of web structure mining. **10**
   (b) Explain data descritization and summarization with example. **10**

4. (a) Define the following terms with example – **10**
   (i) Item set (ii) frequent item set (iii) closed item set.
   (b) What is Market basket analysis ? Explain its use. **10**

5. (a) Following table gives fat and proteins content of items. Apply single linkage clustering and construct dendrogram :– **10**

Food item	Protein	Fat
1	1·1	60
2	8·2	20
3	4·2	35
4	1·5	21
5	7·6	15
6	2·0	55
7	3·9	39

   (b) Explain spatial data mining (SDM). Also explain a model of spatial data warehouse. **10**

6. (a) Use k-mean Algorithm to create three clusters for given set of values :– **10**
   { 2, 3, 7, 8, 9, 15, 17, 19, 25 }.
   (b) Explain Hoeffding tree algorithm with example. **10**

7. Write short notes on any **three** :– **20**
   (a) Spatial data cube construction (b) Bayesian classification
   (c) Text mining approaches (d) Issues in data mining.

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BE/IT/VII(R) 27/5/13
Artificial Intelligence

AGJ 1st half (n)con-code 727

Con. 9263-13. **(REVISED COURSE)** **GS–5863**

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

N.B. :(1) Question No. **1** is **compulsory**.
(2) Attempt any **four** of the remaining **six** questions.

Q1a) **Explain the working of a learning agent with example.** [08]

b) **What is knowledge?** [04]

c) **Explain conditional probability and its use in AI** [08]

Q2a) **What are Min-Max Search and α-β pruning?** [08]

b) **Show the use of α-β pruning for a two person game with example.** [12]

Q3a) **Differentiate between Unidirectional and Bidirectional Search.** [05]

b) **Apply Bidirectional Search to travel from A to K. The table gives edge cost between 2 nodes.** [15]

	A	B	C	D	E	F	G	H	I	J	K
A		17		8		2		9		6	
B	17		2		4	5	1		6		90
C		2		9			2			7	
D	8		9								
E		4									
F	2	5					5			7	
G		1	2			5					
H	9								56		
I		6						56			
J	6		7			7				99	
K		90									

Q4. Using a predicate logic convert the following sentences to predicates and prove that the statement "Ram did not jump?" is false. [20]

a) **Ram went to temple.**
b) **The way to temple is, walk till post box and take left or right road.**
c) **The left road has a ditch.**
d) **Way to cross the ditch is to jump.**
e) **A log is across the right road.**
f) **One needs to jump across the log to go ahead.**

[TURN OVER

Q5a) Consider Judges of volumes 3 and 7 units are available. Show the trace to measure 2 and 5 units. [10]

b) What is Ontology? How is it useful in knowledge representation? [10]

Q6a) Design a multilayer 'Exclusive OR (XOR)' neural network. [10]

b) How is a formal grammar used by a communicating agent? Explain with example. [10]

Q7a) Write a note on Simulated Annealing. [10]

b) Write a note on comparative analysis of search techniques. [10]

BE (IT) SEM VII (REV) May 2013
STQA 14/5/13

Con. 7725–13. **(REVISED COURSE)** **GS–5464**

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

N.B. (1) Question No. **1** is **compulsory**.
(2) Attempt any **four** questions out of remaining **six** questions.

1. (a) What is acceptance testing ? Explain acceptance testing criteria and acceptance test plan. **10**
   (b) Explain McCall's quality factors and criteria. **10**

2. (a) Explain ISO 9126 quality characteristics. **10**
   (b) Explain test design preparedness matrics. **10**

3. (a) Explain metrics for monitoring test execution. **10**
   (b) Explain evaluation and selection of test automated tools. **10**

4. (a) Explain the boundary value analysis with the help of example. **10**
   (b) What are the differences between performance, stress and scalability testing. **10**

5. (a) What are the objectives of testing ? Write the different issues of testing and write the difference between validation and verification. **10**
   (b) Draw and explain control flow graph for binary search function. **10**

6. (a) What is the difference between static unit testing and dynamic unit testing ? Explain static unit testing with the help of example. **10**
   (b) What is data flow testing ? Explain feasible paths and test selection criteria in data flow testing. **10**

7. (a) What is system integration testing ? Explain test plan for system integration testing. **10**
   (b) Describe the difference between black box and white box testing. **10**

BE | IT | VII (R) 31|5|2013

Con. 9835–13. **(REVISED COURSE)** DSIP **GS–6328**

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

N.B. (1) Question No. **1** is **compulsory**.
(2) Solve any **four** questions out of remaining **six** questions.
(3) **Figures** to the **right** indicate **full** marks.
(4) Assume **suitable** data if **necessary**.

1. Solve any **four** questions :—
   (a) Show that :- Highpass=original-lowpass. **5**
   (b) Justify lossy compression is not suitable for compressing executable files. **5**
   (c) For 8-point DFT the first five DFT coefficients are – **5**
   $x(k) = x\{10, 2+3j, 1+2j, j, 4\}$
   Find the remaining coefficients.
   (d) What is wavelet ? Explain wavelet transform in brief. **5**
   (e) Compare and contrast between contrast stretching and threasholding. **5**

2. (a) Perform the following operations on given signal :— **10**
   $x(n) = \{1, 2, 3, 5\}$
   (i) $x(-n-1)$
   (ii) $x(n-2)$
   (iii) $x(n+1)$
   (iv) $x(-n+2)$
   (v) $2x(n)$.
   (b) State and prove any four properties of DFT. **10**

3. (a) Perform histogram stretching so that the new image has a dynamic range of [0, 7]. **10**

Gray level :	0	1	2	3	4	5	6	7
No. of pixels :	100	90	85	70	0	0	0	0

   (b) Explain segmentation based on threasholding in detail. **10**

4. (a) Explain various frequency domain low pass filters in detail. **10**
   (b) Obtain linear convolution of 2 signals given as – **10**
   $x(n) = u(n)$
   $h(n) = a^n u(n), a < 1.$

5. (a) Give in detail classification of signals. **10**
   (b) For the given 3 bit, 4 × 4 size image perform the following operations – **10**
   (i) threasholding, (T = 4)
   (ii) intensity level slicing with background for $r_1 = 2$, $r_2 = 5$
   (iii) Bit plane slicing for LSB and MSB planes
   (iv) Negation.

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

6. (a) What is Morphology ? Name and explain basic operations in morphology. **10**
   (b) Find the Arithmatic codeword of message India. Calculate the percentage of compression and bit/pixel of the compression message. **10**

7. Write short notes on (any **four**) :— **20**
   (a) Lossy Vs Lossless compression techniques
   (b) Walsh transform
   (c) Discrete time systems
   (d) Sampling and Quantization
   (e) Digital watermarking.

21/05/13

IT Sem VII Rev.
Simulation & Modelling

AGJ 1st half (e+) 1

Con. 8859-13. **(REVISED COURSE)** **GS–5581**

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

N.B. : (1) Question No. **1** is **compulsory**.
(2) Solve any **four** questions out of remaining **six** questions.

1. (a) Define system state, Event notice, Activity, Event list delay and clock. **10**
   (b) What are characteristics of queuing system ? **5**
   (c) Describe the event scheduling simulation. **5**

2. (a) What one used to obtain information about a process in the absence of input data ? Explain data collection for input modelling. **10**
   (b) Explain steps involved in simulation study. **10**

3. (a) Describe the input model for an inventory system if the lead time and demand are related. **10**
   (b) Explain types of model with examples. **10**

4. (a) Discuss the vairous issues in manifacturing and material handling simulation. **10**
   (b) Why random numbers used in simulation ? What are techniques used to generate them ? **10**

5. (a) Decribe the inventory system when – **10**
      (i) Lead time is zero
      (ii) Lead time is independent of demand and random
      (iii) Lead time is constant.
   (b) Mention some of the area when simulation can be applied. Also explain when a system cannot be simulated. **10**

6. (a) Give the equation for steady state parameters of M/G/1 queue and derive M/M/1 from M/G/1. **10**
   (b) What do you understand by model verification and validation ? How would you validate input-output transformation of a model ? **10**

7. Write short notes on any **two** :– **20**
   (a) Inverse transform technique
   (b) Poisson process properties
   (c) Trends in simulation software
   (d) Cobweb model.
