MCA Sem III - CBSGS
Database Mgn Sys.
May 2016

QP Code : 26692

(3 Hours) **[Total Marks: 80]**

Note:
- Q1 is compulsory. Attempt any four out of remaining six questions.
- Assumptions made should be clearly stated.

1	a)	Construct an ER diagram for the online tour and travel system. Document all assumptions that you make for designing.	10
	b)	Create relational schema for the above ER diagram and normalize the same till 3NF.	10
2	a)	Differentiate the following(Any two) a) Dense Index and Sparse Index b) Primary Key,Unique Key and Foreign Key c) 2PL,Strict 2PL and Rigorous 2PL	08
	b)	Draw and explain the state diagram for the transaction in database	07
3	a)	Explain and draw the architecture of DBMS	08
	b)	Explain log based recovery technique in database management system	07
4	a)	What is deadlock? Explain the various deadlock detection and prevention techniques.	08
	b)	Explain the main responsibilities handle by DBA.	07
5	a)	What is timestamp protocol? Explain how it is used for concurrency control in database	08
	b)	What is Bell-LaPadula model? Explain how it is used for database security.	07
6	a)	What is B tree ?Explain how it is used for enhancing the performance to fetch the data from database	08
	b)	Explain the heuristic approach for query optimization	07
7		Write short note on the following (Any Three) a) Aggregation b) Weak Entity c) Shadow paging d) Closure of attribute	15

CA/ Sem-III(CBSGS) / Computer Graphics / May'16

QP Code : 26695

[3 hours] 80 marks

N.B. : (1) Q1. Is compulsory
(2) Attempt any 4 questions out of remaining six questions
(3) Figures to the right indicate full marks
(4) Use of scientific calculator is allowed

Q1 a) Derive the Liang Barsky's line clipping algorithm and use it to clip a line P1-P2 with P1(-75,-100) , P2(175,50) against the window with (Xwmin, Ywmin) ≡(0,0) and (Xwmax, Ywmax) ≡ (150,100) (10)

b) How is image sampling and quantization done, Explain in detail. (05)

c) What are Octrees? How can they be used to represent Three-Dimensional Objects (05)

Q2 a) Explain the Z-Buffer algorithm for hidden surface removal and compare it with A-buffer algorithm. (08)

b) Apply the following transformations on the following 3BPP image (07)

1) Image Negative
2) Gray-level slicing with background range of interest (r1=3, r2=5)
3) Thresholding with threshold value =4

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

Q3 a) Equalize the following histogram and draw the original and equalized histogram. (08)

Intensity	0	1	2	3	4	5	6	7
No. Of Pixels	15	28	5	7	24	5	6	10

b) What is a fractal? What are its different types? How is a fractal dimension measured? (07)

Q4 a) Use Bresenham's line drawing algorithm to rasterize the line P1-P2 with endpoints P1(10,10), P2(20,16) (08)

Q4 b) Write the properties of B-Spline curves. How are they different from Bezier curves? (07)

[TURN OVER

Q5 a) A rectangle has lower left corner at (20,20), and upper right corner at (60,40) (08)
Perform the following transformations one after another on the rectangle and obtain its coordinates after every transformation.
1) Rotation by 90 degrees in anticlockwise direction, about its center
2) Scale the rectangle about origin so that it reduces to half of its size
3) Reflection in Y axis.

b) Explain with examples i) Inside – Outside test. ii)Winding number rule test (07)

Q6 a) Derive the Scanline polygon filling algorithm (08)

b) Explain in detail Halftoning and Dithering techniques. (07)

Q7

a) Derive the Sutherland Hodgeman Polygon clipping algorithm (08)

b) How is a parallel projection taken? What are its different types? How is it different from perspective projection? (07)

A/SEM-III (CBSGS)/ Network Security /MAY-2016

QP Code : 26696

(3 Hours) [total Marks: 80]

N. B.: (1) Question number 1 is compulsory
(2) Attempt any 4 from question Nos. 2 to 7.
(3) Illustrate answers with sketches wherever necessary.

1. A] Define Network Security. What are the services and mechanisms provided by Network Security? 10
   B] What are the algorithm modes uses for secret key cryptography? 10

2. A] Explain in details on DES algorithm with reference to its overview and a DES round. 08
   B] What do you mean by Hash function? Compare the terms SHA1 and MD5. 07

3. A] Explain RSA algorithm with a suitable example. 08
   B] Write an algorithm of Diffie – Hellman Key distribution and explain the concept of Man – in – the – Middle attack with proper numerical example. 07

4. A] What are the various forms of Authentication? Explain in details. 08
   B] Explain KDC. How does the key distribution work with multiple KDC domains? 07

5. A] How are Kerberos ticket lifetimes in V5 different from V4? 08
   B] Discuss Inter – realm authentication in Kerberos. 07

6. A] What is a digital certificate? Explain the stepwise process of certificate generation? 08
   B] Explain how SET ensures a secure e – commerce transaction. 07

7. Write short notes on: (any three) 15
   a) Honey Pots
   b) Intrusion Detection and its types
   c) Integrity check
   d) SSL

MCA / SEM-III (CBSGS) / Software Project Management / MA4-16

QP Code : 26703

[Total Marks: 80]

(3 Hours)

N.B.: (1) Question No.1 is **compulsory.**
(2) Attempt any **four** from the remaining **six** questions.
(3) Answers to questions should be grouped and written together.
(4) Draw the diagrams whenever required.

Q1 (a): What is role of Project Manager in an IT project? What is skill set required for good project manager? (10)

Q1 (b): What do you mean by cost and budgeting of an IT project? What are the basic principles of cost management should be considered at time of cost estimation? Explain which type of estimate should be used when and why? (10)

Q2 (a): What is project implementation? Explain different approaches for the Project implementation. (08)

Q2 (b): What is MOV? What are the steps to develop the MOV? (07)

Q3 (a): Why quality of IT project is necessary? What do you mean by cost of Quality and cost categories related to quality? (08)

Q3 (b): Explain the difference between scope verification and scope control. (07)

Q4 (a) : Discuss the common sources of risk on information Technology projects and describe the contents of risk register and how the risk register is used in several risk management processes? (08)

Q4 (b): Explain control charts and seven run rule in quality management. (07)

Q5 (a): What is project procurement management? Explain different processes involved in it? (08)

Q5 (b): What are the steps required for Project Closure. (07)

Q6 (a): What are the main types of contracts if you decide to outsource? What are the advantages and disadvantages of each? (08)

Q6 (b): Discuss the project metrics in detail. (07)

Q7: Write Short Notes on any three: - (15)

a) WBS.

b) Responsibility Assignment matrix

c) Matrix organization

d) Statistical Sampling.

YQ-Con. 6765-16.