M.TECH. (CSE) – 3rd SEMESTER EXAMINATIONS; JANUARY-2018
(SUB.: KNOWLEDGE BASED SYSTEM DESIGN; PAPER CODE: 13110301)

TIME: 03:00 Hrs.   **Max. Marks: 100**

Instructions:-
1. Write your Roll no. on the Question paper.
2. Candidate should ensure that they have been provided with the correct question paper. Complaints in this regards, If any, should be made within 15 minutes of the commencement of the exam. No complaint(s) will be entertained thereafter.
3. Attempt Five (05) Questions in all, Question No.-01 is Compulsory. Students are required to attempt Four (04) questions from Q.No.-2 to Q.No.6. Parts of a question should be attempted in sequence order. Marks are indicated against each question.
4. Draw Diagram wherever required.

Q.1. Write short notes on following:-   **(4x5=20)**
  a) Semantic Nets.
  b) Prolog.
  c) Forward Chaining.
  d) Expert Systems.

Q.2. a) What is frame? How frames can be used to represent knowledge?   **(10)**
  b) Explain forward and backward chaining.   **(10)**

Q.3. a) What is FOPL? Explain with some example.   **(10)**
  b) Explain parallel implementation of semantic nets.   **(10)**

Q.4. a) Explain Breadth First Search (BFS) technique with an example.   **(10)**
  b) Explain A* searching algorithm.   **(10)**

Q.5. a) State and prove Baye's theorm.   **(10)**
  b) What are Agents? How agents are useful in intelligent systems?   **(10)**

Q.6. a) Explain Depth First Search (DFS) technique with an example.   **(10)**
  b) What is Bayes Network? How such networks are useful in represent knowledge in intelligent systems?   **(10)**

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M.TECH. (CSE) – 3rd SEMESTER EXAMINATIONS; JANUARY-2018
(SUB.: ADVANCED DATABASE MANAGEMENT SYSTEM; PAPER CODE: 13110302)

TIME: 03:00 Hrs.

Max. Marks: 100

Instructions:-
1. Write your Roll no. on the Question paper.
2. Candidate should ensure that they have been provided with the correct question paper. Complaints in this regards, If any, should be made within 15 minutes of the commencement of the exam. No complaint(s) will be entertained thereafter.
3. Attempt Five (05) Questions in all, Question No.-01 is Compulsory. Students are required to attempt Four (04) questions from Q.No.-2 to Q.No.6. Parts of a question should be attempted in sequence order. Marks are indicated against each question.
4. Draw Diagram wherever required.

Q.1. Answer the followings:- (5x4=20)
- a) Explain Query Optimization.
- b) What is Serializability? Explain.
- c) Discuss "wait-die" and "wound-wait" approaches of deadlock avoidance.
- d) What is disaster Recovery? Explain.
- e) Discuss the characteristics of Data warehousing.

Q.2.
- a) What is DBMS? What are the advantages and disadvantages of DBMS as compared to File Processing System? Explain. (10)
- b) Differentiate between Hierarchical, Network and Relational Database Models with their merits and demerits in detail. (10)

Q.3.
- a) What is Query Processing? Describe the steps involved in query processing. (10)
- b) What is recovery? Discuss the various methods of performing recovery. (10)

Q.4.
- a) What is Concurrency? Discuss the various problems associated with it. Also explain the various Concurrency Control Schemes in detail. (12)
- b) Discuss Object Query Language. (8)

Q.5. Explain the following:-
- a) Data Fragmentation in DDBMS. (6)
- b) Replication and Allocation Techniques. (7)
- c) Architecture of Data warehouse (7)

Q.6.
- a) What is Object Relational Database? Explain advantages of Object Relational Database. (10)
- b) Explain Enhanced SQL standard for Object Relational Database. (10)

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M.TECH. (CSE) – 3rd SEMESTER EXAMINATIONS; JANUARY-2018
(SUB.: SYSTEM & NETWORK ADMINISTRATION; PAPER CODE: 13110303)

TIME: 03:00 Hrs.   **Max. Marks: 100**

Instructions:-
1. Write your Roll no. on the Question paper.
2. Candidate should ensure that they have been provided with the correct question paper. Complaints in this regards, If any, should be made within 15 minutes of the commencement of the exam. No complaint(s) will be entertained thereafter.
3. Attempt Five (05) Questions in all, Question No.-01 is Compulsory. Students are required to attempt Four (04) questions from Q.No.-2 to Q.No.6. Parts of a question should be attempted in sequence order. Marks are indicated against each question.
4. Draw Diagram wherever required.

Q.1. **Answer the followings:-**   **(4x5=20)**
   a) What do you mean by RSA?
   b) What do you mean by Cryptography?
   c) Explain TCP/IP.
   d) Define Digital signature.

Q.2. a) What do you mean by TCP/IP? Explain its all layers with diagrams.   **(10)**
   b) Explain the network interconnecting devices.   **(10)**

Q.3. **Explain the following:-**   **(20)**
   a) AES algorithms.
   b) DES algorithms.
   c) Firewall
   e) VAN

Q.4. a) What is system and network administration? Write the various goals that need to be taken care of for system and network administration.   **(10)**
   b) Explain the following:-   **(10)**
      i) What is the role of swap Space in installing UNIX operating system?
      ii) Explain the directory structure of UNIX operating system in detail.

Q.5. a) What is mean by subnetting and supernetting? Discuss the different class of IP address in detail.   **(10)**
   b) Write a short note on:-   **(10)**
      i) FAT
      ii) NTFS

Q.6. a) Write the use and syntax of the following TCP/IP trouble shooting commands: ping,ipconfig.tracert,ifconfig and netstat.   **(5)**
   b) Differentiate between static and dynamic routing. what is the need of routing protocols. Explain any one protocol in detail   **(15)**

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M.TECH. (CSE) – 3rd SEMESTER EXAMINATIONS; JANUARY-2018
(SUB.: SOFTWARE PROJECT MANAGEMENT; PAPER CODE: 13110307)

TIME: 03:00 Hrs.

Max. Marks: 100

Instructions:-
1. Write your Roll no. on the Question paper.
2. Candidate should ensure that they have been provided with the correct question paper. Complaints in this regards, If any, should be made within 15 minutes of the commencement of the exam. No complaint(s) will be entertained thereafter.
3. Attempt Five (05) Questions in all, Question No.-01 is Compulsory. Students are required to attempt Four (04) questions from Q.No.-2 to Q.No.7. Parts of a question should be attempted in sequence order. Marks are indicated against each question.
4. Draw Diagram wherever required.

(4x5=20)

Q.1.   Answer the followings:-
a) Differentiate between software projects and infrastructure projects. What are the specific problems with software projects?
b) Explain with diagrammatic illustration the project management life cycle.
c) What is a test plan? List the contents of a test plan.
d) What are the costs of conformance and cost of non-conformance? How can we reduce Cost of Quality?

Q.2. a) Discuss the advantages and disadvantages of different project organization types. **(10)**
b) What is project scheduling? Discuss the various project scheduling activities. **(10)**

Q.3. a) What is a critical path? Why is it important to identify the critical path? **(10)**
b) Write notes on six common metrics in software projects. **(10)**

Q.4. a) Describe Cost of Quality and different components of COQ. **(10)**
b) What are the seven QC Tools? Describe in detail the use of Control charts. **(10)**

Q.5. a) What are the costs of conformance and cost of non-conformance? How can we reduce Cost of Quality? **(10)**
b) Explain WBS based estimation methodology. **(10)**

Q.6. a) What are the different categories of risks? Give examples from a software project. **(10)**
b) What are the activities under Software Configuration Management (SCM)? **(10)**

Q.7. a) Why is Risk Management important in a project? What are the common causes and effects of software project risks? **(10)**
b) What are the benefits of agile project management? How does agile methodology bring transparency in projects. **(10)**

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