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T.E.(CSE) (Part - II) (Semester - VI) (Revised)
Examination, November - 2019
COMPILER CONSTRUCTION
Sub. Code :66858

Day and Date :wednesday , 13-11-2019
Time : 9.30 a.m.to 11.30 a.m.

Total Marks :50

- Instructions : 1) All questions are compulsory
2) Figures to the right indicate full marks.

SECTION - I

- Q1) a)** List and explain various error recovery strategies in Syntax analysis. [6]

OR

- List and describe different compiler construction tools. [6]
- How to recognize the tokens. [4]

- Q2) a)** Construct the LR (1) parsing table for the following grammar [6]

$$S \rightarrow CC$$
$$C \rightarrow cC$$
$$C \rightarrow d$$

OR

- a) What are the features of LR Parser. Write the algorithm for LR parsing. [6]

- b) $S \rightarrow iEtS \mid iEtSeS \mid a$

$$E \rightarrow b$$

Is the grammar ambiguous? If yes then remove the ambiguity. [4]



P.T.O.

Q3) Explain the role of lexical analyzer with appropriate block diagram. [5]

SECTION - II

Q4) a) What are inherited attributes? Explain with example. [6]

OR

a) Define Dependency Graph. Describe methods for evaluating the semantic rules. [6]

b) Explain Peephole code optimization technique and its characteristics. [4]

Q5) a) What are the rules for writing the Semantic actions in an SDT when we have both inherited and synthesized attributes. Explain how to convert SDD into SDT with the help of an example. [6]

OR

a) Write and explain SDD for generating syntax tree for an expression. [6]

b) Explain various transformations on Basic Blocks. [4]

Q6) Draw syntax tree and DAG for the expression and also write the intermediate code in three address code format. [5]

$a + a * (b - c) + (b - c) * d$



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T.E. (C.S.E.) (Part - III) (Semester - VI) (New)

Examination, November - 2019

STORAGE NETWORKS

Sub. Code : 66861

Day and Date : Tuesday, 19 - 11 - 2019

Total Marks : 100

Time : 10.00 a.m. to 1.00 p.m.

- Instructions :**
- 1) Question No.4 and 8 is compulsory.
 - 2) Attempt any two questions from question no. 1, 2 and 3.
 - 3) Attempt any two questions from question no. 5, 6 and 7.
 - 4) Figures to the right indicate full marks.

- Q1) a)** Explain different Components of an Intelligent Storage System. [8]
b) Explain SCSI Command Model. [8]

- Q2) a)** Explain Fibre Channel Protocol Stack with diagram. [8]
b) Explain FC-2: data transfer. [8]

- Q3) a)** Explain the different components of NAS. [8]
b) Explain NAS I/O Operations with diagram. [8]

- Q4) Write a short notes on (Any Three).** [3×6=18]

- a) Data Center Core Elements.
- b) RAID Level 3
- c) iSCSI Protocol Stack.
- d) NAS File-Sharing Protocols.

- Q5) a)** Explain Symmetric storage virtualization with advantages and disadvantages. [8]
b) Explain Storage virtualization in the server with advantages and disadvantages. [8]

P.T.O.



- Q6) a) Explain Failure Analysis with suitable example. [8]
b) Explain Backup Topologies. [8]
- Q7) a) What is Local Replication? Explain uses of Local Replicas. [8]
b) Explain Host-Based Local Replication. [8]
- Q8) Write a short notes on (Any Three). [3×6=18]
a) Information Availability.
b) Backup Process.
c) Storage Virtualization.
d) Storage Security Framework.



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T.E. (Computer Science & Engineering) (Semester - V)
Examination, November - 2019
COMPUTER GRAPHICS
Sub. Code :66293

Day and Date :Friday, 22-11-2019

Total Marks :50

Time : 02.30 p.m.to 4.30 p.m.

- Instructions :
- 1) Q. No. 3 and Q.No. 6 are compulsory Attempt any one from Q. NO. 1 and QNo.2 Q. any one from Q. NO. 4 and Q. NO. 5.
 - 2) Figures to the right indicate full marks.
 - 3) Assume suitable data if necessary.

Q1) a) Derive the transformation matrix for reflecting a two dimensional object through an arbitrary line. [6]

b) Explain Sutherland cohen subdivision algorithm for line clipping. [6]

Q2) a) Explain different criteria's used by bresenham's circle generation algorithm to select the appropriate pixel which best represents the actual circle.[6]

b) Define generalized 3D transformation matrix. Explain 3D rotation and reflection. [6]

Q3) a) Consider the clipping window $X_L=-1$, $X_R=+1$, $Y_B=-1$ and $Y_T=+1$ and the line From $P_1(-3/2,1/6)$ to $P_2(1/2,3/2)$. Clip the line using end point code algorithm. [7]

b) What is scan conversion. Explain run length encoding technique. [6]



P.T.O.

- Q4) a) Explain parametric representation of cubic spline curve? [6]
 b) What is warping? Explain Mesh warping method. [6]
- Q5) a) What is procedural animation? Differentiate between key-frame based animation and procedural animation [6]
 b) Explain Phong Shading method for rendering a polygon surface. [6]
- Q6) a) Explain the convex hull property of B-spline Curve [7]
 b) Explain diffuse reflection model for calculating surface intensity at a given point [6]



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T.E. (C.S.E.) (Semester - VI) (Revised)
Examination, November - 2019
DATABASE ENGINEERING
Sub. Code : 66860

Day and Date : Friday, 15 - 11 - 2019

Total Marks : 50

Time : 9.30 a.m. to 11.30 a.m.

- Instructions :
- 1) All questions are compulsory.
 - 2) Figures to right indicate full marks.
 - 3) Assume suitable data wherever required.

Q1) Attempt any two:

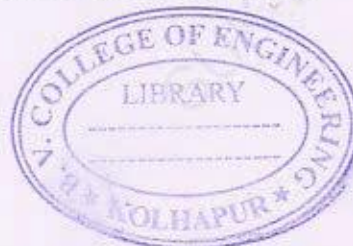
[2×7]

- a) Draw an ER diagram for university database and explain it.
- b) State and briefly explain the advantages of DBMS over traditional file based system.
- c) Draw the schema diagram for a student database & explain.

Q2) Attempt any two:

[2×6]

- a) What is a DML? State the types of access using DML.
- b) With reference to relational databases, explain the following terms:
 - i) Relation
 - ii) Tuple
 - iii) Relation instance
 - iv) Domain of attributes.
- c) State & specify the SQL datatypes supporting dates & times.



P.T.O.

Q3) Attempt any two:

[2×6]

- a) What are functional dependencies? State the rules to find logically implied functional dependencies.
- b) What is normalization? Explain 1NF and 2NF.
- c) What is stable storage? How it can be implemented?

Q4) Attempt any two from:

[2×6]

- a) What is a transaction? Explain the ACID properties of transaction.
- b) Explain 2 phase commit protocol.
- c) Explain buffer management.



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T.E. (C.S.E.) (Part - III) (Semester - VI) (New)

Examination, November - 2019

STORAGE NETWORKS

Sub. Code : 66861

Day and Date : Tuesday, 19 - 11 - 2019

Total Marks : 100

Time : 10.00 a.m. to 1.00 p.m.

- Instructions :
- 1) Question No.4 and 8 is compulsory.
 - 2) Attempt any two questions from question no. 1, 2 and 3.
 - 3) Attempt any two questions from question no. 5, 6 and 7.
 - 4) Figures to the right indicate full marks.

Q1) a) Explain different Components of an Intelligent Storage System. [8]

b) Explain SCSI Command Model. [8]

Q2) a) Explain Fibre Channel Protocol Stack with diagram. [8]

b) Explain FC-2: data transfer. [8]

Q3) a) Explain the different components of NAS. [8]

b) Explain NAS I/O Operations with diagram. [8]

Q4) Write a short notes on (Any Three). [3×6=18]

a) Data Center Core Elements.

b) RAID Level 3

c) iSCSI Protocol Stack.

d) NAS File-Sharing Protocols.

Q5) a) Explain Symmetric storage virtualization with advantages and disadvantages. [8]

b) Explain Storage virtualization in the server with advantages and disadvantages. [8]

P.T.O.



Q6) a) Explain Failure Analysis with suitable example. [8]

b) Explain Backup Topologies. [8]

Q7) a) What is Local Replication? Explain uses of Local Replicas. [8]

b) Explain Host-Based Local Replication. [8]

Q8) Write a short notes on (Any Three). [3×6=18]

a) Information Availability.

b) Backup Process.

c) Storage Virtualization.

d) Storage Security Framework.



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T.E. (Computer Science & Engineering) (Part - II) (Semester - VI)
Examination, November - 2019
OPERATING SYSTEM - II
Sub. Code : 66859

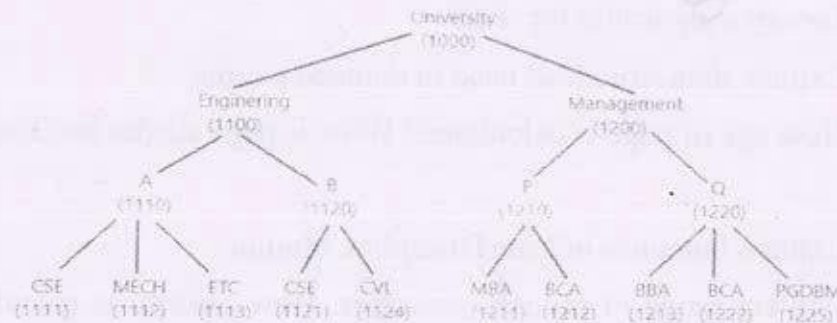
Day and Date : Thursday, 14 - 11 - 2019

Total Marks : 100

Time : 10.00 a.m. to 1.00 p.m.

- Instructions :**
- 1) Figures to the right indicate full marks.
 - 2) Solve any two questions from Q.1 to Q.3.
 - 3) Solve any two questions from Q.4 to Q.6.

- Q1) a)** Draw and Explain Block diagram of Unix Kernel. [7]
- b)** Explain following system calls in detail: [8]
- i) Open ii) Read iii) Chmod iv) Mount
- c)** Describe the working of namei algorithm. Consider the following File System and explain how namei algorithm will respond in following situations /* no. in () are representing inode no.*/ [10]



- i) Current working directory is root (University) and pathname is "/ Engineering / A / CSE"
- ii) Current working directory is B and pathname is "/ B / ETC"
- iii) Current working directory is root (University) and pathname is "../ Management / Q / BCA"



P.T.O.

- Q2) a) Explain buffer retrieval algorithm. Is sleep action in scenario 4 and scenario 5 are same? Justify your answer [8]
- b) How inode structure is maintains address of data blocks? Consider the Unix with block size 512 bytes and address size 16 bits, What will be the maximum file size supported by system? [8]
- c) What is Context of process? Why context switch is permissible only in asleep state of process? Explain using example. [9]
- Q3) a) Explain the File System Layout. What is remembered inode? [7]
- b) What are different data structures associated with file subsystem? [6]
- c) List the I/O parameters saved in U-area while executing read system call? also Explain their purpose [6]
- d) What is the purpose of pipe system call? How it is differ from named pipe? [6]
- Q4) a) With the help of state transition diagram explain life cycle of process [9]
- b) What is Region? Describe algorithm for allocate region [8]
- c) What is signal? Explain checking and handling of signal [8]
- Q5) a) Describe algorithm for 'exit' [9]
- b) Explain data structures used in demand paging [8]
- c) How age of page is calculated? What is page stealer process? [8]
- Q6) a) Explain functions of Line Discipline Module [7]
- b) Explain range of process priorities. How priority is calculated? How priority of process can be controlled? [6]
- c) What is swapping? How swapping device is managed? [6]
- d) Describe how size of region can be changed (GrowReg algorithm) [6]

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T.E. (C.S.E.) (Part - III) (Semester - VI) Examination, November - 2019
INFORMATION SECURITY
Sub. Code: 66862

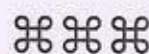
Day and Date : Wednesday, 20 - 11 - 2019

Total Marks : 50

Time : 9.30 a.m. to 11.30 a.m.

- Instructions :
- 1) Q.3 and Q.6 are compulsory.
 - 2) Solve any one out of Q.1 and Q.2.
 - 3) Solve any one out of Q.4 and Q.5

- Q1) a) Explain key distribution using Public key Certificates. [6]
 b) Describe the model for Network Security with neat diagram. [6]
- Q2) a) Illustrate key generation in DES algorithm with neat diagram. [6]
 b) State the requirements of MAC. What are the basic uses of MAC? [6]
- Q3) a) Compare : [6]
 i) Block Cipher and Stream Cipher.
 ii) Confusion and Diffusion.
 b) Explain the RSA algorithm. Perform encryption & decryption using RSA algorithm if $p = 5$, $q = 11$, $e = 3$, $M = 9$. [7]
- Q4) a) Distinguish between Kerberos Version 4 and Version 5. [6]
 b) Give the participants of SET and also briefly describe the sequence of events in them, that are required for an electronic transactions. [6]
- Q5) a) How Kerberos works in multiple Realm. [6]
 b) Explain various services provided by PGP. [6]
- Q6) a) Explain X-509 Certificate format in detail with diagram. [6]
 b) Explain in detail ESP Format in IPSEC. [7]



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T.E. (C.S.E.) (Semester - VI) (Revised)
Examination, November - 2019
DATABASE ENGINEERING
Sub. Code : 66860

Day and Date : Friday, 15 - 11 - 2019

Total Marks : 50

Time : 9.30 a.m. to 11.30 a.m.

- Instructions :
- 1) All questions are compulsory.
 - 2) Figures to right indicate full marks.
 - 3) Assume suitable data wherever required.

Q1) Attempt any two:

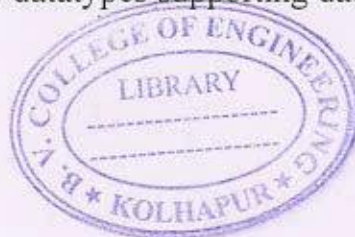
[2×7]

- a) Draw an ER diagram for university database and explain it.
- b) State and briefly explain the advantages of DBMS over traditional file based system.
- c) Draw the schema diagram for a student database & explain.

Q2) Attempt any two:

[2×6]

- a) What is a DML? State the types of access using DML.
- b) With reference to relational databases, explain the following terms:
 - i) Relation
 - ii) Tuple
 - iii) Relation instance
 - iv) Domain of attributes.
- c) State & specify the SQL datatypes supporting dates & times.



P.T.O.

Q3) Attempt any two:

[2×6]

- a) What are functional dependencies? State the rules to find logically implied functional dependencies.
- b) What is normalization? Explain 1NF and 2NF.
- c) What is stable storage? How it can be implemented?

Q4) Attempt any two from:

[2×6]

- a) What is a transaction? Explain the ACID properties of transaction.
- b) Explain 2 phase commit protocol.
- c) Explain buffer management.

