[3818] – 702

T.Y. B.Sc. (Computer Science) (Semester – III) Examination, 2010

COMPUTER SCIENCE (Paper – II)

(2004 Pattern)

CS : 332 : Theoretical Computer Science and Compiler Construction – I

Time : 2 Hours Max. Marks : 40

***Instructions** : 1) Black figures to the **right** indicate **full** marks.*
*2) **All** questions carry **equal** marks.*
*3) **All** questions are **compulsory**.*

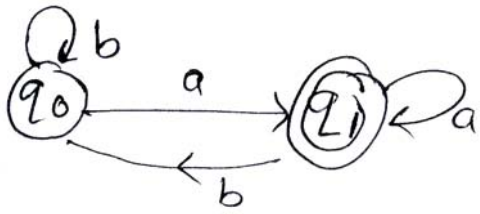
1. Attempt the following : **(10×1=10)**

a) Explain left linear grammar with example.

b) Explain universal set with example.

c) What is the limitation of F.A. ?

d) What is the language accepted by FA ?



e) Construct DFA for language

L = a(ab + ab)*

f) Write CFG for RE (01 + 1)*

g) (A*)* = A**. State true or false.

h) What is useless symbol in a grammar ?

i) How ‘δ’ function is mapped in PDA ?

j) When a PDA is called DPDA ?

P.T.O.

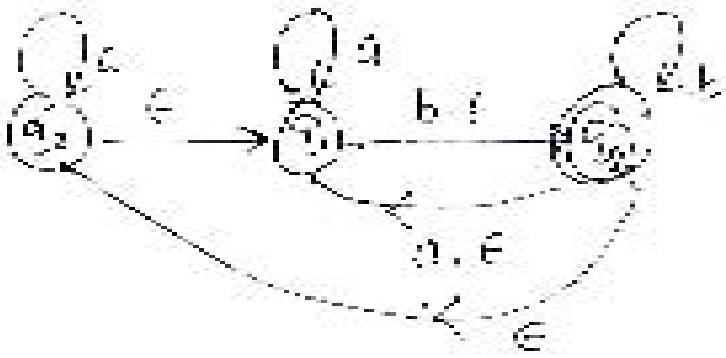
2. Attempt **any two** : **(2×5=10)**

   a) Construct Moore machine over {0, 1} which produces 'A' if the string ends with '000', produces 'B' if the string ends with '111', otherwise produces 'C'.

   b) Construct FA for the R.E.

   (1 (01)*) + (0 (01)* + (01) 1).

   c) Construct DFA equivalent to given NFA.



3. Attempt **any two** : **(2×5=10)**

   a) Construct CFG which generate set of even length string over {0, 1} whose 1st two and last two symbols are same.

   b) Construct PDA for

   $L = \{a^m b^n c^{n+2} d^m \mid n \geq 1, m \geq 1\}$.

   c) Convert following grammar to GNF

   $S \rightarrow AB$

   $A \rightarrow BS / b$

   $B \rightarrow SA / a$

4. Attempt **any two** : **(2×5=10)**

a) Construct PDA for given CFG.

$S \rightarrow AB$

$A \rightarrow aAb / ab$

$B \rightarrow cBd / cd$

b) Convert following grammar to CNF

$P \rightarrow aQRb \mid QRP$

$Q \rightarrow Rb \mid PR$

$R \rightarrow a \mid QRS$

$S \rightarrow b$

c) Minimize following DFA.

δ	a	b
$\rightarrow q_0$	q_2	q_4
q_1	q_0	q_5
q_2	q_2	q_4
(q_3)	q_0	q_5
q_4	q_1	q_3
(q_5)	q_0	q_5

[3818] – 301

T.Y.B.Sc. Comp. Sci. (Semester – III) Examination, 2010
COMPUTER SCIENCE (Paper – I)
(2008 Pattern)
CS-331 : System Programming and Operating System – I

Time: 2 Hours Max. Marks: 40

Instructions *:1)* ***Neat*** *diagrams must be drawn* ***wherever*** *necessary.*
2) ***All*** *questions carry* ***equal*** *marks.*
3) Assume ***suitable*** *data, if* ***necessary****.*
4) ***All*** *questions are* ***compulsory****.*

1. Attempt **all** of the following : **(10×1=10)**

a) What do you mean by device driver ?

b) Explain the use of viewing buffer in editor.

c) What is literal ? Give the syntax.

d) Explain the role of POOLTAB in assembler.

e) State the use of SET keyword.

f) What is the role of lexical analyzer ?

g) Give the parse tree for the following expression c = a + b.

h) What is dynamic pointer ?

i) Give any two differences between compiler and interpreter.

j) What is absolute address ?

2. Attempt **any two** of the following : **(2×5=10)**

a) How forward references are handle in one pass assembler ?

b) Write a short note on memory allocation for block structured languages.

c) What is relocation logic ? Is it applicable to the relocatable and nonrelocatable program ? Justify.

P.T.O.

3. Attempt **any two** of the following : **(2×5=10)**

   a) What is intermediate code ? Explain the two forms of intermediate code ?

   b) Explain in brief various aspects of compilation.

   c) What is binding ? Give the differences between static and dynamic binding.

4. Attempt either **A** or **B**. **10**

   A) a) Explain with suitable example : displays. **5**

   b) What is assembler ? Give any two features of assembly languages. **3**

   c) Define : Address sensitive instruction and address constant. **2**

   B) a) Using suitable example, explain REPT and IRP statements. **5**

   b) What is basic block ? How constant folding and frequency reduction is applicable to basic block ? **3**

   c) Give any two uses of interpreter. **2**

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[3818] – 701

T.Y. B.Sc. Computer Science (Semester – III) Examination, 2010
COMPUTER SCIENCE (Paper – I)
CS – 331 : System Programming – I
(2004 Pattern)

Time : 2 Hours Max. Marks : 40

***Instructions** : 1) **All** questions carry **equal** marks.*
*2) **All** questions are **compulsory**.*
*3) Black figures to the **right** indicate **full** marks.*
*4) Neat diagrams must be drawn **wherever** necessary.*
*5) **Assume** suitable data, if necessary*

1. Attempt **all** : **(10×1=10)**

   a) Define system program.

   b) Give long form of RISC and SPARC.

   c) Give 2 advantages of using assembly language.

   d) Give syntax of LTORG and write what action assembler takes when it encounters.

   e) What is the need for using Table of Incomplete Instructions (TII) by an assembler ?

   f) Define compiler.

   g) Write basic task of scanner.

   h) Which type of grammar is suitable for writing programming language grammars ?

   i) Define Ambiguous Grammar.

   j) What do you mean by linking ?

2. Attempt **any two** : **(2×5=10)**

   a) Explain two-pass assembler in detail.

   b) Explain Nested macro calls with the help of suitable example.

   c) Explain code optimization in detail.

P.T.O.

3. Attempt **any two** : **(2×5=10)**

   a) Explain two phases of compiler with the help of suitable diagram.

   b) Explain different types of loaders.

   c) Explain macros with mixed parameter lists with the help of suitable example.

4. Attempt **any two** : **(2×5=10)**

   a) What do you mean by quadruples, direct triples and indirect triples ?

   b) Explain memory allocation in block structured programming languages.

   c) Explain listing and Error reporting in the context of assemblers.

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[3818] – 304

T.Y. B.Sc. (Computer Science) (Semester – III) Examination, 2010
COMPUTER SCIENCE (Paper – IV)
CS-334 : Web Development and php Programming – I
(2008 Pattern)

Time : 2 Hours Max. Marks : 40

Instructions *: 1)* ***All*** *questions are* ***compulsory****.*
2) ***Neat*** *diagrams must be drawn* ***wherever*** *necessary.*
3) Black figures to the ***right*** *indicate* ***full*** *marks.*

1. Attempt **all** of the following : **(10×1=10)**

a) List any four web browser names.

b) Write any two conditions for boolean variable returns false value.

c) How to find the number of parameters passed into function ?

d) Echo is a language construct – Comment.

e) How to locate and remove the last element of an array ?

f) State the purpose of $this variable.

g) What is the difference between accessing a class method via –> and :: ?

h) Give a function of random access to file data.

i) State the difference between GET and POST methods.

j) How to register the variables into a session ?

2. Attempt **any two** of the following : **(2×5=10)**

a) Explain features of php.

b) Describe string decomposing functions with suitable examples.

c) What is file upload ? Explain in detail with example.

P.T.O.

3. Attempt **any two** of the following : **(2×5=10)**

   a) Explain different functions available in php to extract values from the array.

   b) How does php support to introspect classes and objects with suitable built in constructs ?

   c) Write a php script to accept filename from user and print total number of words.

4. Attempt either **A** or **B** : **10**

   A) i) Write a php script to create user defined functions Xsubstr (string, start [, length]) and illustrate the same.

      ii) What is serialization ? Explain it with different built in functions.

   B) i) Create a form to accept employee details like name, address and mobile-no. Once the employee information is accepted, then accept LIC information like policy no, name, premium. Display employee detail and LIC detail on the next form.

      ii) Write a php script to accept two strings and check whether equal or not using sticky form.

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[3818] – 305

T.Y. B.Sc. Computer Science (Semester – III) Examination, 2010
COMPUTER SCIENCE (Paper – V)
CS – 335 : Programming in Java – I
(2008 Pattern)

Time : 2 Hours Max. Marks : 40

Instructions : *1) Black figures to the **right** indicate **full** marks.*
*2) **All** questions carry **equal** marks.*
*3) **All** questions are **compulsory**.*

1. Attempt **all** of the following : **(10×1=10)**

a) What is the purpose of the jar tool ?

b) Give the difference between = = operator and equals ( ) method.

c) State the purpose of a static block.

d) A final method cannot be overridden. State True/False and justify.

e) What happens when the clone ( ) method is involved on a class which does not implement cloneable ?

f) Give the two forms of the assertion statement.

g) What is the difference between string and string Buffer class ?

h) Which event is generated when the following components are updated ?

i) Scroll bar ii) Slider

i) How can we pass parameters to an applet ?

j) What is the role of layout manager in AWT or swing ?

P.T.O.

2. Attempt **any two** of the following : **(2×5=10)**

   a) What is an interface ? How does it differ from an abstract class ?

   b) Write a Java program using swing to display names of cities in a combo box and display the name of the selected city in a text field.

   c) Explain the use of key words-super and final with reference to inheritance.

3. Attempt **any two** of the following : **(2×5=10)**

   a) What are adapter classes ? Explain their use in event handling.

   b) Accept n strings from the user and write only those strings to a file which begin with the letter 'A' or have 'OBJ' at the end.

   c) Read two arguments from the command prompt. If the number of arguments are not equal to two, throw a user defined exception "Invalid Parameter Exception", otherwise display the two parameters.

4. Attempt **any one** of the following (**I** or **II**) : **(1×10=10)**

   I a) Write a short note on garbage collection and finalize ( ) **5**

   b) Which stream classes would you use for the following operations ? **3**

      i) Read primitive data types from a file

      ii) Read a string from the console

      iii) Read data from a specific location in a file

   c) Give the structure of the APPLET tag. **2**

   II a) Write a Java program to create an applet which has a list of radio buttons with titles of various colors. Set the background color of the applet to the selected color. **5**

   b) Explain the concept of Wrapper classes in briefs. **3**

   c) Explain any two features of Java. **2**

[3818] – 306

T.Y.B.Sc. Computer Science (Semester – III) Examination, 2010
COMPUTER SCIENCE (Paper – VI)
CS-336 : object oriented software engineering
(2008 Pattern)

Time: 2 Hours Max. Marks: 40

Instructions *: 1)* ***All*** *questions are* ***compulsory****.*
2) ***Neat*** *diagrams must be drawn* ***wherever*** *necessary.*
3) Black figures to the ***right*** *indicate* ***full*** *marks.*

1. Attempt **all** of the following : **(10×1=10)**

a) Give advantages of object oriented analysis.

b) "Objects cannot be constructed from other objects". State true or false and justify in short.

c) Define the term concrete class.

d) "Due to inheritance modifications/maintenance of system become difficult". State true or false and justify in short.

e) Which are three kinds of building blocks of UML ?

f) What is collaborations ?

g) Define constraints.

h) Give any two standard stereotypes that apply to components.

i) Define fork.

j) What is meant by a test case ?

2. Attempt **any two** of the following : **(2×5=10)**

a) Discuss the components of sequence diagram.

b) Give any five activities and artefact considered in inception.

c) Give decisions to be made by the system designer during system design process.

P.T.O.

3. Attempt **any two** of the following : **(2×5=10)**

   a) What is deployment diagram ? What it contains ? Give uses of it in short.

   b) Explain integration testing with its types.

   c) Prepare a class diagram for airport system consisting of atleast 3 classes. Define appropriate relationships, associations with multiplicity.

4. Attempt the following : **10**

   a) A system is to be designed for a travel company for computerizing their booking. They have coaches running on different routes, each has a start and destination and several stop overs. A customer booking can be done from any stop to any other stop in a group or as individual and charges are according to routes.

   Company has offices in every city where the booking clerk handles the cash. Customer can check the availability and also cancel the booking, get appropriate refund according to the rules. Model the system using UML techniques and draw the following diagrams by giving supporting specifications, if required.

   i) Draw activity diagram. **3**

   ii) Draw sequence diagram. **4**

   b) For an automated vending machine for coffee/tea, a customer deposits a coin, select coffee/tea and get proper quantity of it from a machine. Draw a state transition diagram for the same. **3**

   OR

   b) Draw use case diagram for college library management system. **3**

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[3818] – 705

T.Y. B.Sc. (Computer Science) (Semester – III) Examination, 2010
COMPUTER SCIENCE
CS-335 : Programming in Java – I (Paper – V)
(2004 Pattern)

Time : 2 Hours

Max. Marks : 40

1. Attempt **all** of the following : **(10×1=10)**

   a) "Bytecodes are what make java platform independent". State whether True/False and justify.

   b) Why is the main function declared public and static ?

   c) State the purpose of the "throws" keyword.

   d) What is a final class ?

   e) "An interface is a pure abstract class". State whether True/False and justify.

   f) Which exceptions could arise in the following statement ?

      int x = Integer.parseInt (args [0]);

   g) State the difference between the use of = = operator and equals ( ) method.

   h) What is the advantage of using adapter classes ?

   i) List the mandatory attributes of the APPLET tag.

   j) Why are swing components called "lightweight" components ?

2. Attempt **any two** of the following : **(2×5=10)**

   a) Write a note on garbage collection in java. Also explain the use of finalize () method.

   b) Write a java program to accept the name of a directory as command line argument. If the directory exists, list its contents and count the number of files and subdirectories.

   c) What is a layout manager ? Explain various layout managers in java.

P.T.O.

3. Attempt **any two** of the following : **(2×5=10)**

   a) What is an exception ? Explain how a user defined exception can be created. Give a suitable example.

   b) Define an interface for Queue operations. Define the queue size as a constant value 10. Implement this interface in a class. Create one queue object and perform operations.

   c) Write a java program using swing to create a list box which contains TY subjects. Display the selected subject or subjects in a text field.

4. Attempt **any two** of the following : **(2×5=10)**

   a) What is a package ? Discuss various levels of access protection used in packages.

   b) Write a java program using swing to create a frame with a text field. Handle mouse movement and mouse click events and display co-ordinates in the text field.

   c) Define an abstract class “Staff” with protected members id and name. Define a parameterized constructor. Define one subclass “Officestaff” with member department. Create n objects of officestaff and display all details.

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[3818] – 302

T.Y. B.Sc. (Comp. Sci) (Semester – III) Examination, 2010
COMPUTER SCIENCE
(2008 Pattern) Paper – II
CS – 332 : Theoretical Computer Science & Compiler Construction – I

Time : 2 Hours Max. Marks : 40

Instructions : *1)* ***All*** *questions carry* ***equal*** *marks.*

2) ***All*** *questions are* ***compulsory****.*

3) Black figures to ***right*** *indicate* ***full*** *marks.*

1. Attempt **all** of the following : **(1×10=10)**

a) Write any two operations on sets.

b) Define Kleen closure.

c) Write any two difference between DFA and NFA.

d) Draw NFA for (a+b)* b.

e) Define CFG

f) Write tuples of T.M.

g) Write a language for CFG

$S \rightarrow aSa / bSb / a / b / \in$

h) State **True** or **False**. Class of CFG and PDA is same.

i) Define Chomsky Normal Form (CNF).

j) Which tool is used to prove language is not regular ?

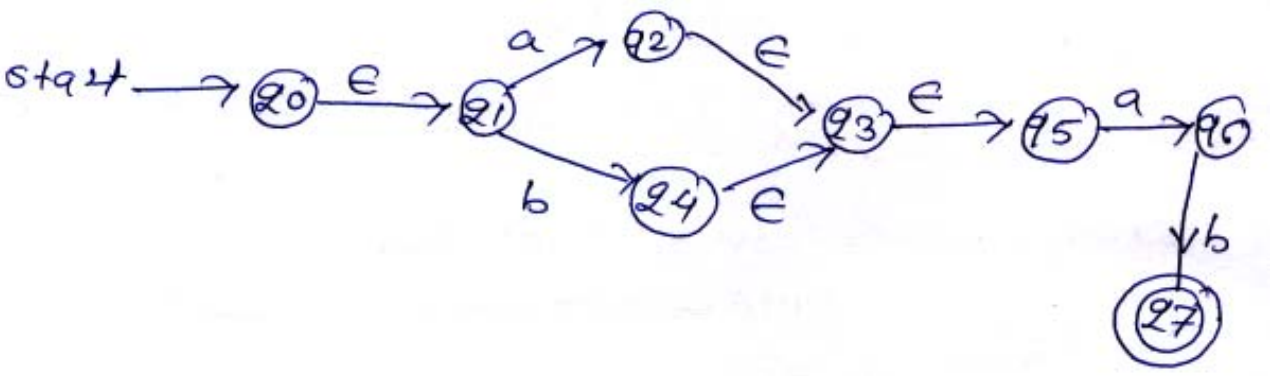
P.T.O.

2. Attempt **any two** : **(2×5=10)**

a) Construct DFA for a language over {a, b, c} which starts with 'b' and not having 'bac' as a substring.

b) Construct Mealy machine for a language over {0, 1}, which output 'A' if string ends with '010' outputs 'B' if string ends with '011' otherwise outputs 'C'.

c) Convert NFA with $\in$ to DFA.



3. Attempt **any two** : **(2×5=10)**

a) Construct CFG for a language, L where L = $\{a^n b^n c^m d^r / m, n, r \geq 1\}$.

b) Convert into GNF.

$A_1 \rightarrow A_2 A_3$

$A_2 \rightarrow A_3 A_1 / a$

$A_3 \rightarrow A_1 A_2 / b$.

c) Draw PDA for a language, L where L = $\{a^n b^{2n} / n \geq 1\}$.

4. Attempt **any two** : **(2×5=10)**

a) Convert into CNF :

$S \rightarrow XaX / aXa / a$

$X \rightarrow XbX / bXb / \in$

b) Construct T.M. for a language L, where L = $\{a^{m+n}\, b^m c^n / m, n \geq 1\}$.

c) Check whether given language is regular or NOT, where L = $\{a^n b^m c^m d^n / m, n > 1\}$.

OR

4. Attempt **any two** : **(2×5=10)**

a) Construct PDA for CFG

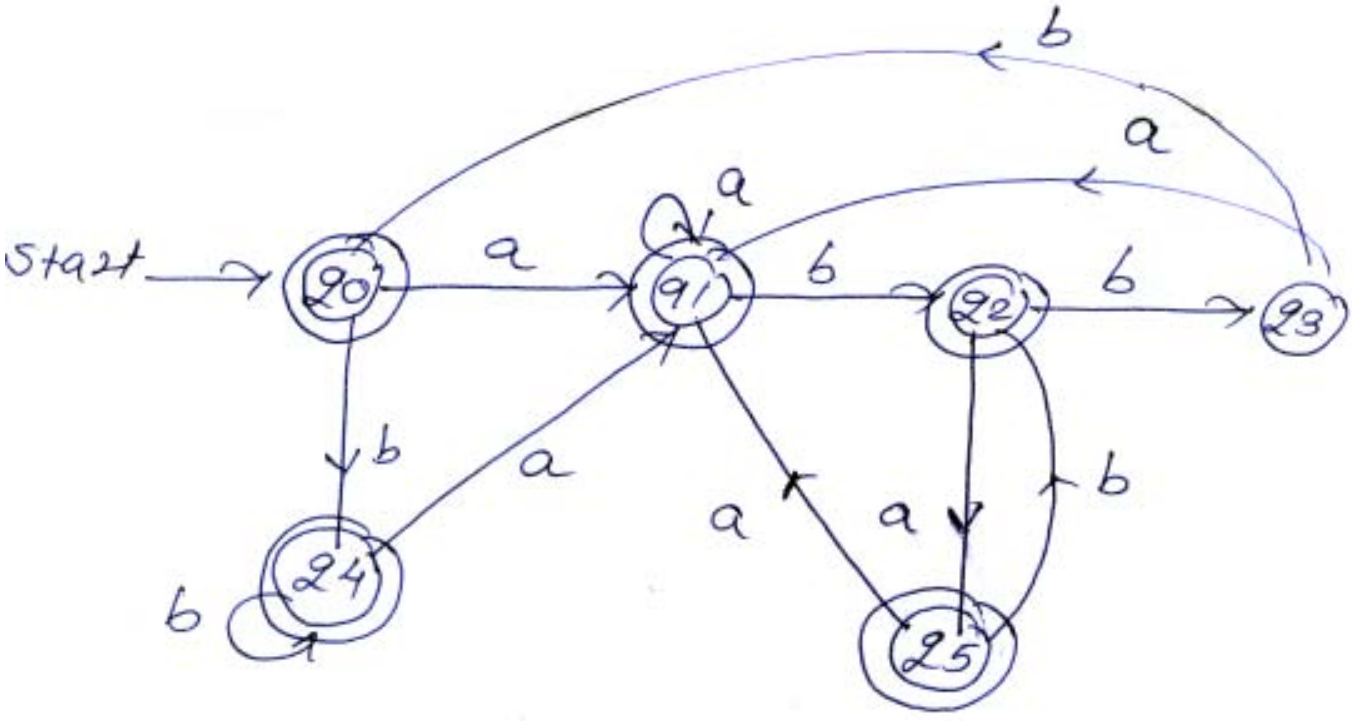
$S \rightarrow 0A1$

$A \rightarrow 0A1 / B$

$B \rightarrow 1B / 1$

b) Construct T.M. for a language, L, where L = $\{WW^r / w \in (a+b)^*\}$

c) Minimize above DFA.



[3818] – 303

T.Y. B.Sc. Computer Science (Semester – III) Examination, 2010
COMPUTER SCIENCE (Paper – III)
CS – 333 : Computer Networks – I
(2008 Pattern)

Time : 2 Hours Max. Marks : 40

N.B. : *1) **All** questions are **compulsory**.*
*2) Figures to the **right** indicate **full** marks.*

1. Attempt **all** of the following : **(10×1=10)**

   a) What is autonegotiation ?

   b) Define Internet works.

   c) Which layers in the Internet model are network support layer ?

   d) Draw differential Manchester encoding for 01011100 pattern.

   e) A network with bandwidth of 20 mbps can pass only an average of 18,000 frames per minute with each frame carrying an average of 20,000 bits. What is the throughput of this network ?

   f) Define non persistent CSMA.

   g) Byte stuff the following data.

P	Flag	Flag	q	Esc	S

   h) What is need of medium access control ?

   i) List the goals of computer network.

   j) Define the connection oriented service.

2. Attempt **any two** of the following : **(2×5=10)**

   a) What is the difference between random access protocol with controlled access protocol ? Explain any one.

   b) Explain the common standard ethernet implementations.

   c) What is physical topology ? Explain any two topologies with advantages and disadvantages.

P.T.O.

3. Attempt **any two** of the following : **(2×5=10)**

   a) Given message polynomial $x^6 + x^5 + x^3 + x + 1$ and generator polynomial $x^3 + x^2 + 1$. Find CRC.

   b) What are the responsibilities of session and presentation layer in the OSI model ?

   c) Explain the different stages of ISDN evolution.

4. Attempt **any one** of the following (**I** or **II**) : **(1×10=10)**

   I) a) Discuss serial transmission in detail.

      b) Compare and contrast sliding window go back n and selective repeat protocol.

   II) a) Explain one bit sliding window protocol. Also discuss the two scenarios that can occurs in sliding window.

      b) Write a note on :

         i) Gigabit ethernet implementations

         ii) FDMA.

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[3818] – 703

T.Y. B.Sc. (Computer Science) (Semester – III) Examination, 2010
COMPUTER SCIENCE (Paper – III)
CS-333 : Computer Networking and Network Administration – I
(2004 Pattern)

Time : 2 Hours Max. Marks : 40

Instructions : *1)* ***All*** *questions are* ***compulsory****.*

2) Black figures to the ***right*** *indicate* ***full*** *marks.*

3) ***All*** *questions carry* ***equal*** *marks.*

1. Attempt **all** of the following : **(10×1=10)**

a) What are the types of services ?

b) Define FDMA.

c) Define multiplexing.

d) List out any 4 factors affecting protocol efficiency.

e) Define internetworking.

f) Explain piggybacking method.

g) Define unreliable datagram services.

h) What is interface and SAP ?

i) List out static channel allocation advantage.

j) Write difference between TCP and UDP.

P.T.O.

2. Attempt **any two** of the following : **(2×5=10)**

   a) Compare pure and slotted aloha.

   b) Explain PAR and ARQ protocols.

   c) Describe the ISO-OSI reference model with suitable diagram.

3. Attempt **any two** of the following : **(2×5=10)**

   a) Define framing. Explain the methods of framing.

   b) Describe one bit sliding window protocol.

   c) What is networking ? What are the goals of computer networks ?

4. Attempt **any one** of the following : **(1×10=10)**

   I) a) Describe traditional Ethernet.

      b) Draw Manchester, Differential Manchester and NRZ-I encoding for 010011001001 bit pattern.

   II) a) Write short note on CSMA.

      b) Explain Network architecture.

[3818] – 704

T.Y. B.Sc. (Computer Science) (Semester – III) Examination, 2010
COMPUTER SCIENCE (Paper – IV)
CS-334 : Server Databases and Application Development – I
(2004 Pattern)

Time: 2 Hours Max. Marks: 40

Instructions *: 1) Neat diagrams must be drawn* ***wherever*** *necessary.*
2) Black figures to the ***right*** *indicate* ***full*** *marks.*
3) ***All*** *questions are* ***compulsory****.*

1. Attempt **all** of the following : **(1×10=10)**

   a) What is implicit cursor ?

   b) Explain % Row type attribute.

   c) State the purpose of rollback command.

   d) Define consistent state.

   e) What is use of check points ?

   f) Define multilevel relations.

   g) What is use of curval function in sequence ?

   h) Define term thin server.

   i) What is cascadeless schedule ?

   j) State the concept starvation.

2. Attempt **any two** of the following : **(2×5=10)**

   a) Write note on sequence.

   b) Describe the three most common concurrent transaction execution.

   c) Explain the different levels of security.

P.T.O.

3. Attempt **any two** of the following : **(2×5=10)**

a) What is deadlock ? Explain different methods used to prevent deadlock.

b) Consider the following transactions.

T_1	T_2	T_3
Read(A)	Read(B)	Read(A)
Read(B)	B = B + 5	Read(B)
A = A – B	Read(C)	B= B – A
Write (A)	C = C + B	Write (B)
	Write (B)	
	Write (C)	

Give atleast two non-serial schedule that are serializable to serial schedule $\langle T_1, T_2, T_3 \rangle$.

c) Consider the following log entires at the time of system crash.

[start T_1]
[Start T_2]
[Read T_1, A]
[Write T_2, B, 30]
[Start T_3]
[Commit T_2]
[Start T_4]
[Write T_1, C, 100]
[Commit T_1]
[Write T_3, D, 60]
[Read T_3, E]
[Write T_4, 75]
[Commit T_4]
system crash.
If immediate update with check point is used what will be the recovery procedure ?

4. Attempt **any two** of the following : **(2×5=10)**

   a) Explain in detail server component.

   b) Explain in brief timestamp ordering protocol.

   c) Consider the following relational database.

      Train (Train-no, Train-name, arrival-time, depart-time) passenger (pass-no, pass-name, address, age)

      Train passenger (Train-no, pass-no, Date, ticket-amt) create a trigger to validate train arrival time must be less than train departure time.

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[3818] – 706

T.Y. B.Sc. (Computer Science) (Semester – III) Examination, 2010
CS-336 : SOFTWARE ENGINEERING – I (Paper – VI)
(2004 Pattern)

Time: 2 Hours Max. Marks: 40

Instructions : *1)* ***All*** *questions are* ***compulsory****.*
2) ***Neat*** *diagrams must be drawn* ***wherever*** *necessary.*
3) Black figures to the ***right*** *indicate* ***full*** *marks.*

1. Attempt **all** of the following : **(10×1=10)**

   a) Give any two characteristics of software.

   b) What is meant by prototyping ?

   c) Explain tracable characteristics of S.R.S.

   d) Explain Requirement Anticipation.

   e) Define economical feasibility.

   f) What is the role of a co-ordinate module ?

   g) What is mean by balanced system ?

   h) Explain sequential cohesion.

   i) Give any two points considered while output design.

   j) What is the role of system analyst ?

2. Attempt **any two** of the following : **(2×5=10)**

   a) Explain testing and implementation phases of waterfall model.

   b) Explain product operation level in McCall's quality factor.

   c) Prepare a questionniare format asking students about various problems occured and expectations from college administration. Questionniare must have at least five questions and proper choices to select.

P.T.O.

3. Attempt **any two** of the following : **(2×5=10)**

   a) What is data dictionary ? Explain any five components of it.

   b) Indian Airlines decides to give discount to customers on the following rules :

   If the customer is regular flyer and travelling 5000 km. distance in one year, discount is 10%, more than 5000 km, discount is 20%.

   If the customer is non-regular flyer and travelling 5000 km. distance in one year, discount is 5%, more than 5000 km., discount is 10%, Draw a decision table for above.

   c) What is coupling ? Explain normal coupling with its all sub-types.

4. Attempt the followig : **10**

   a) A Gymnecium started recently provides facilities like latest equipments under the guidance of trainers, special diet preperations, weight loss programs, Sona bath etc.

   They are having about 25 machinaries, 15 trainers and more than 500 customers. The admission is given on monthly, half-yearly and yearly basis.

   Organisation wants an automated system to maintain all data and produce various types of reports.

   For the above case : **7**

   i) Identify all entities

   ii) Draw a context level logical D.F.D.

   iii) Draw first level D.F.D.S.

   b) What is a module ? Give attributes of a module. **3**

   OR

   b) Explain structured interview in detail. **3**

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