CBCS SCHEME

Fifth Semester B.E. Degree Examination, Jan./Feb. 2021
Management and Entrepreneurship for IT Industry

Time: 3 hrs.   Max. Marks: 100

Note: *Answer any FIVE full questions, choosing ONE full question from each module.*

Module-1

1.   a. List and explain the functions of management.   (10 Marks)
    b. List and principles of management given by Henri Fayol.   (10 Marks)

OR

2.   a. Define and list the purpose of planning.   (10 Marks)
    b. List the principle of organization.   (10 Marks)

Module-2

3.   a. What is recruitment? Explain various sources of recruitment.   (10 Marks)
    b. Define Direction. List the principle of direction.   (10 Marks)

OR

4.   a. List the difference between Autocratic, Participative and Free-Rein   (12 Marks)
    b. Explain Maslow's theory of motivation with diagram.   (08 Marks)

Module-3

5.   a. Define Entrepreneur. Explain the characteristics of an entrepreneur.   (10 Marks)
    b. List the qualities of an entrepreneur.   (10 Marks)

OR

6.   a. What are the barriers of entrepreneurship?   (10 Marks)
    b. Write about Technical Feasibility and Social Feasibility study.   (10 Marks)

Module-4

7.   a. Define the project. Give the classification of project.   (10 Marks)
    b. List various factors influencing the selection of project.   (10 Marks)

OR

8.   a. Define ERP. List the importance of ERP.   (10 Marks)
    b. List the contents of project report.   (10 Marks)

Module-5

9.   a. List the category and objectives of MSME.   (10 Marks)
    b. Discuss the Case studies :
      i) Shri N.R Naryan Murthy and Infosys   (05 Marks)
      ii) Captain G.R Gopinath.   (05 Marks)

OR

10.   a. List the importance of IPR.   (10 Marks)
    b. Explain: i) TECKSOK   ii) KSFC.   (10 Marks)

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CBCS SCHEME

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17CS52

Fifth Semester B.E. Degree Examination, Jan./Feb. 2021
Computer Networks

Time: 3 hrs.   Max. Marks: 100

Note: *Answer any FIVE full questions, choosing ONE full question from each module.*

Module-1

1   a.   Many networks, including internet, provide more than one transport layer protocol. When you develop an application you need to choose one of the available transport layer protocol and consider various parameters. Explain the parameters and protocols to be considered while designing an application. **(08 Marks)**

   b.   True or False :
   i)   Processes on two different systems communicate with each other by exchanging messages across the computer networks
   ii) A client servser architecture achieves perfect security
   iii) Socket is a hardware interface through which a process sends message into, and receives messages from the network
   iv) No data loss is tolerated in multimedia applications such as conversational audio/video
   v)   Developing a new network application for the internet offen requires one to decide whether to choose UDP or TCP. **(05 Marks)**

   c.   With a simple sketch, explain how SMTP operate when A send mail to B where mail server of A and B are different. Show the sequence of events. **(07 Marks)**

OR

2   a.   HTTPRequest message
        GET/somedir/page.html HTTP/1.1
        HOST : www.someschool.edu
        Connection : close
        User_agent : Mozilla/5.0
        Accept_language : fr
        Interpret the meaning of each line in few sentences. **(05 Marks)**

   b.   Explain meaning of each line of
        HTTPResponse message given below :
        HTTP/1.1 200 ok
        Connection : close
        Date : Tue, 09 Aug 2011 15 : 44 : 04 GMT
        Server : Apache/2.2.3
        Last modified : Tue, 09 Aug 2011 15 : 11 : 03 GMT
        Content_Length : 6821
        Content_type : text/html
        (data data - - - - -). **(07 Marks)**

   c.   What is the service provided by DNS system? Explain the meaning of root DNS server, Top Level Domain Servers (TLD), Authoritative DNS servers. Explain the meaning of the following DNS records
        (relay1.bar.foo.com, 145.37.93.126, A)
        (foo.com, mail.bar.foo.com, MX). **(08 Marks)**

Module-2

3 a. State the assumptions in rdt 2.0 and explain the behavior of the stop-and-wait protocol. Draw the FSM of sender and receiver clearly showing the events and action. **(10 Marks)**

    b. Show the operation of GBN protocol of with a sketch. Window size is 4 packets. Show the sequence of sending six packets (pkt0-pkt5) where pkt0 and pkt1 are correctly received and packet (pkt2) 2 is lost. **(10 Marks)**

OR

4 a. With a diagram, explain the TCP segment structure write one line about each field. **(07 Marks)**

    b. Explain TCP connection management with appropriate sketches (three way handshake, closing). Explain use of SYN, FIN, RST. **(07 Marks)**

    c. Explain the flow control service provided by TCP with a simple sketches show the buffer variation and derive the formula for rwnd. Explain how the window information at receiver side is communicated to the sender. **(06 Marks)**

Module-3

5 a. Explain router architecture with a simple sketch. How packet queueing occur at router? **(08 Marks)**

    b. Compare the routing protocols RIP and OSPF. **(04 Marks)**

    c. With a diagram, explain each field in the IPV_4 datagram. Write only few sentences about each field. **(08 Marks)**

OR

6 a. Suppose a router receives an IP packet containing 4020 bytes and to be forwarded to an outgoing link with MTU(Maximum Transmission Unit) of 1500 bytes. Assume the IP header is 20 bytes. Show the fragments the router creates and specify relevant values for each fragment (ID, offset and flag) and bytes in each. **(08 Marks)**

    b. Draw the IPV_6 datagram format. Indicate two key differences between IPV_4 an IPV_6 format. **(04 Marks)**

    c. Refer the following network. Find the shortest path from node 'C' to all other nodes using link state algorithm.
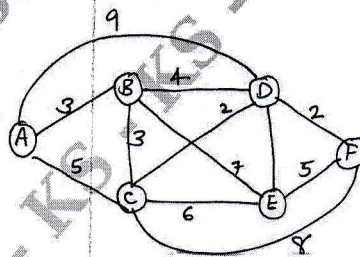

Fig.6(c)

(08 Marks)

Module-4

7 a. Explain the components in a cellular network. **(10 Marks)**

    b. Explain steps of hand off for a mobile users. **(10 Marks)**

OR

8 a. With a diagram explain two different types of routing approach to mobile node. **(10 Marks)**

    b. Explain agent discovery in mobile IP. Show the ICMP message and registration steps with home agent. **(10 Marks)**

Module-5

9 a. Explain the working of video streaming over HTTP. Explain perfecting, buffer etc and the roles in this process.   (08 Marks)

   b. Explain how DASH helps to improve streaming over different available bandwidth.
                                                                                    (03 Marks)

   c. Explain CDN operation with a simple sketch in a scenario a user try to get video from a site NetCinema.   (09 Marks)

OR

10 a. Explain how classes of service (RoS) is achieved in network with a sketch showing two users, one is doing VOIP and the other browsing. Explain packet marking using IPV_4 header.   (10 Marks)

   b. Explain how leaky bucket algorithm is used to achieve traffic policing.   (10 Marks)

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Fifth Semester B.E. Degree Examination, Jan./Feb.2021
Database Management System

Time: 3 hrs.   Max. Marks: 100

Note: *Answer any FIVE full questions, choosing ONE full question from each module.*

Module-1

1 a. Discuss the main characteristics of the database approach and how it differs from traditional file systems? **(08 Marks)**

b. What are the different types of database end users? Discuss the main activities of each. **(06 Marks)**

c. Describe the three schema architecture? **(06 Marks)**

OR

2 a. Design an ER diagram for company database with atleast four entities. **(08 Marks)**

b. What is meant by Recursive relationship type? Give some example of recursive relationship type. **(06 Marks)**

c. What is Generalization? Illustrate how it is helpful with an example. **(06 Marks)**

Module-2

3 a. Discuss the characteristics of relation that make them different from ordinary tables. **(08 Marks)**

b. Discuss DIVISION operation. Find the quotient for the following : A/B_1, A/B_2 and A/B_3; where A, B_1, B_2 and B_3 are

SNo.	PNo.
S_1	P_1
S_1	P_2
S_1	P_3
S_1	P_4
S_2	P_1
S_2	P_2
S_3	P_2
S_4	P_2
S_4	P_4

$A =$ (above)

$B_1 =$

PNo.
P_2

$B_2 =$

PNo.
P_2
P_4

$B_3 =$

PNo.
P_1
P_2
P_4

(08 Marks)

c. Explain the basic datatypes available for attributes in SQL. **(04 Marks)**

OR

4 a. Explain the steps to convert the basic ER model to Relational Database Schema? **(10 Marks)**

b. For the following relations for a book club :
MEMBERS (member-id, Name, Designation, Age)
BOOKS (Bookid, BookTitle, Book-Author, Book-Publisher, Book-price)
RESERVES (Member-id, Book-id, Date)
Write the SQL queries,
(i)   Find the names of members who are professors older than 45 years.
(ii) List the titles of books reserved by professors.
(iii) Find ID's of members who have not reserved books that cost more than Rs.500.
(iv) Find the authors and titles of books reserved on 27-May-2017.
(v)   Find the names of members who have reserved all books. **(10 Marks)**

Module-3

5 a. What are the components of the JDBC architecture? Describe four different architectural alternatives for JDBC drivers. **(10 Marks)**

    b. Why are stored procedures important? How do we declare stored procedure and how they called from application code? **(05 Marks)**

    c. Explain the impedance mismatch between host Languages and SQL. **(05 Marks)**

OR

6 a. What is a three tier architecture? What advantages it offer over single tier and two tier architectures? Give a short overview of the functionality at each of the three tiers. **(10 Marks)**

    b. What is SQLJ and how it is different from JDBC? **(05 Marks)**

    c. What is CGI and what problems does it address? **(05 Marks)**

Module-4

7 a. Explain an Informal design guidelines for a relational schema design. **(08 Marks)**

    b. What do you understand by attribute closure? Give an example. **(04 Marks)**

    c. Consider the following relations for published books"
Book (Book_title, Author_Name, Book_type, List_Price, Author_Application, Publisher)
Suppose the following dependencies exists"
Book_Title $\rightarrow$ Publisher, Book_Type
Book_Type $\rightarrow$ List_price
Author_Name $\rightarrow$ Author_Affiliation.

      (i) What normal form is the relation in? Explain your answer.

      (ii) Apply normalization until you cannot decompose the relations further, state the reasons behind each decomposition. **(08 Marks)**

OR

8 a. A set of functional dependencies for the relation R{A, B, C, D, E, F} is AB$\rightarrow$C, C$\rightarrow$A, BC$\rightarrow$D, ACD$\rightarrow$B, BE$\rightarrow$C, EC$\rightarrow$FA, CF$\rightarrow$BD, D$\rightarrow$E. Find minimal cover for this set of functional dependencies. **(10 Marks)**

    b. Define fourth normal form? When is it violated? Why is it useful? **(06 Marks)**

    c. Why is the domain key normal form (DKNF) known as ultimate normal form? **(04 Marks)**

Module-5

9 a. Explain the desirable properties of transaction. **(08 Marks)**

    b. Describe the four levels of isolation in SQL. **(06 Marks)**

    c. What is the two phase locking protocol? How does it Guarantee serializability? **(06 Marks)**

OR

10 a. What is a time stamp? How does the system generates time stamps? **(06 Marks)**

    b. Describe the actions taken by the recovery manager during checkpointing. **(06 Marks)**

    c. Explain shadow paging with an example. **(08 Marks)**

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Fifth Semester B.E. Degree Examination, Jan./Feb.2021
Advanced Java and J2EE

Time: 3 hrs.   Max. Marks: 100

Note: *Answer any FIVE full questions, choosing ONE full question from each module.*

Module-1

1 a. Illustrate with an example how enumerations are declared and used in Java programming. Also list out the enumeration restrictions. **(08 Marks)**
   b. Describe Auto-boxing and Un-boxing and how it is different from boxing and unboxing. Illustrate with an example. **(06 Marks)**
   c. Justify, Java enumerations is a class type with an example. **(06 Marks)**

OR

2 a. With a syntax and example, explain how annotations are created and obtained at runtime. **(07 Marks)**
   b. Discuss how reflections can be used at run time with annotations. **(06 Marks)**
   c. What do you mean by Type wrapper and explain numeric type wrapper with an example? **(07 Marks)**

Module-2

3 a. Demonstrate linked lists for collections with example. **(07 Marks)**
   b. Explain how collections can be accessed using iterator. **(06 Marks)**
   c. Write a program to explain Linked list to store address. **(07 Marks)**

OR

4 a. Explain the following Legacy classes with example :
      (i) Hash table   (ii) Vector **(08 Marks)**
   b. Discuss the following collection integers set and list. **(06 Marks)**
   c. What is a Collection Frame work? Explain the methods defined by collection interface. **(06 Marks)**

Module-3

5 a. Explain with syntax and example the different constructors available for creating string. **(08 Marks)**
   b. Explain the following methods defined for character extraction with example,
      (i) charAt ( )   (ii) getChars ( )   (iii) getBytes ( )   (iv) toCharArray ( ) **(08 Marks)**
   c. Write a program to remove duplicate characters from a given string and display the resultant string. **(04 Marks)**

OR

6 a. Explain how to modify a string by using following methods:
      (i) substring ( )   (ii) concat ( )   (iii) replace ( )   (iv) trim ( ) **(10 Marks)**
   b. Explain the following with syntax and example :
      (i)   equals (') and equalsIgnoreCase ( )
      (ii)   regionMatches ( )
      (iii) startsWith ( ) and endsWith ( )
      (iv)   equals( ) versus == **(10 Marks)**

Module-4

7   a.   Explain how cookies can be handled using servlets.   (07 Marks)

     b.   Explain different JSP tags with a program to demonstrate all tags.   (08 Marks)

     c.   Explain the life cycle of a servlet.   (05 Marks)

OR

8   a.   Write a Java Servlet program to accept two parameters from webpage, find the sum of them, display the result in webpage. Also give necessary Html script to create webpage.

                                                              (10 Marks)

     b.   What is the role of Tomcat server? Explain different steps involved in configuring for development of Servlet program execution.   (10 Marks)

Module-5

9   a.   Briefly explain the different types of JDBC drivers.   (10 Marks)

     b.   Explain various steps of JDBC process with code Snippets.   (10 Marks)

OR

10   a.   Illustrate with an example how to enable Resultset as scrollable.end describe the significance of scrollable Resultset.   (08 Marks)

     b.   Explain the types of exceptions occurred in JDBC with example.   (04 Marks)

     c.   Explain (i) PreparedStatement object.   (ii) CollableStatement object.   (08 Marks)

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Fifth Semester B.E. Degree Examination, Jan./Feb.2021
Dot Net Framework for Application Development

Time: 3 hrs.   Max. Marks: 100

Note: *Answer any FIVE full questions, choosing ONE full question from each module.*

Module-1

1 a. Explain the general structure of C# program with suitable example. **(06 Marks)**
   b. With programming example, explain expression bodied methods and string interpolation in C#. **(08 Marks)**
   c. Write a C# program to check whether the number read from the user is a strong number or not. (Hint : A number is called strong number if sum of the factorial of its digits is equal to number itself). **(06 Marks)**

OR

2 a. Explain the concept of named arguments and optional parameters with programming example. **(06 Marks)**
   b. Define exception. Explain how exception handling is achieved in C#. **(08 Marks)**
   c. Write a C# program to find the roots of a quadratic equation by reading the coefficients from the user. **(06 Marks)**

Module-2

3 a. Explain the concept of Boxing and Unboxing with an example. **(06 Marks)**
   b. Define class and structure. Give the difference between structure and class. **(08 Marks)**
   c. Illustrate the concept of static data, with C# program that counts the number of objects being created by a class. **(06 Marks)**

OR

4 a. Explain value type and reference type with an example. **(06 Marks)**
   b. Explain Anonymous classes, with an example. **(06 Marks)**
   c. Define Jagged Array. Explain with program hour jagged arrays are declared, populated and computer the sum of all elements. **(08 Marks)**

Module-3

5 a. Explain the concept of parameter arrays with programming example. **(06 Marks)**
   b. What is inheritance? What are the advantages and disadvantages of inheritance? Explain usage of base keyword in inheritance. **(08 Marks)**
   c. Explain how method overriding is achieved in C# with programming example. **(06 Marks)**

OR

6 a. Explain with example abstract and sealed keyword with respect to class and methods. **(10 Marks)**
   b. Explain the steps taken by the garbage collector to destroy objects. **(05 Marks)**
   c. Mention the difference between interface and class. **(05 Marks)**

Module-4

7 a. Define property with its syntax. List and explain with example different types of properties.
(10 Marks)

   b. List and explain different operators used to access and manipulate individual bits in 'int' type.
(05 Marks)

   c. Define generic. Write a C# program for swapping of 2 numbers using generic method.
(05 Marks)

OR

8 a. Explain the Stack<T> and LinkedList<T> collection class with programming example.
(12 Marks)

   b. Define indexer with its syntax. What are the uses of indexers? Demonstrate with an example.
(08 Marks)

Module-5

9 a. Define Delegate. Explain how to declare delegate with an example.
(10 Marks)

   b. Define event. Explain how to handle event by using a delegate with an example.
(10 Marks)

OR

10 a. What is LINQ? Explain LINQ for selecting and ordering of data with an programming example.
(10 Marks)

   b. Explain operator overloading and their constraints. Write the complete C# program that creates a class called 'COMPLEX' which simulates a complex number and overloads the operators '+', '–' and '*' for COMPLEX objects.
(10 Marks)

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