

DE-4144**Sub. Code****13**

DISTANCE EDUCATION

M.Sc. (SE) 5 YEARS INTEGRATED DEGREE
EXAMINATION, MAY 2018.

DIGITAL COMPUTER FUNDAMENTALS

Time : Three hours

Maximum : 100 marks

SECTION A — (5 × 8 = 40 marks)

Answer any FIVE questions.

1. Convert the following decimal numbers to the bases indicated
 - (a) 175 to octal
 - (b) 2479 to hexadecimal
 - (c) 255 to binary
 - (d) 13.75 to binary.
2. Using 1's and 2's complement subtract the following :
 - (a) $0.1110 - 0.1001$
 - (b) $110 - 0.111$.
3. State and prove DeMorgan's theorem.
4. Write short notes on :
 - (a) Sum of product terms
 - (b) Product of Sum terms.
5. Explain the Half-adder circuit with neat sketch.
6. Explain T flip-flop with truth table.

7. What is counter? Classify and explain its various types.
8. Discuss about Generation of computers.

SECTION B — ($4 \times 15 = 60$ marks)

Answer any FOUR questions.

9. Explain Gray, Excess-3 and error detection codes with examples.
10. Simplify the following Boolean equation using Karnaugh map.
$$Y = A'BCD + ABC'D' + ABC'D + ABCD +$$
$$ABCD' + AB'C'D + AB'CD + A'B'CD$$
11. Explain multiplexer and demultiplexer with neat sketch.
12. Describe the construction of ALU with neat diagram.
13. With neat diagram explain JK master slave flip flop.
14. Discuss on :
 - (a) Shift Register
 - (b) BCD counter.
15. Explain the following :
 - (a) Computer Memory
 - (b) Processor.

DE-4145**Sub. Code****14****DISTANCE EDUCATION****M.Sc. (SE) (5 Years Integrated) DEGREE EXAMINATION,
MAY 2018.****C AND DATA STRUCTURES****Time : Three hours****Maximum : 100 marks****SECTION A — (5 × 8 = 40 marks)****Answer any FIVE questions.**

1. Explain with example about 'gets' and 'puts' statements.
2. Write short note on Macros and pre-processor.
3. Write a C program to sort N given numbers in ascending order.
4. Explain the concept of array of pointer with C program.
5. Explain the ways of representing Stack. What are its applications?
6. Discuss the linked representation of Binary tree.
7. What is string? Write a C program to find and replace a given substring.
8. Explain about various fundamental data types in C.

SECTION B — (4 × 15 = 60 marks)

Answer any FOUR questions.

9. Explain various types of operators used in C program. Give examples.
10. Explain the steps to create and process a data file. Explain with a program.
11. Illustrate with C program the operations of doubly linked list.
12. Define Queue. Explain the operations performed on Queue with algorithm.
13. (a) Write a C program to pass an array to a function. (8)
(b) Explain the recursion with example C program for 'Tower of Hanoi'. (7)
14. (a) Explain about 'nested if' structure with example C program.
(b) Discuss about the 'switch' statement. Give example.
15. Write short note on :
(a) Structure and Union. (8)
(b) Dynamic Memory Allocation. (7)

DE-4146

Sub. Code

15

DISTANCE EDUCATION

M.Sc. (Software Engineering) (5 Years Integrated) DEGREE
EXAMINATION, MAY 2018.

DISCRETE MATHEMATICS

Time : Three hours

Maximum : 100 marks

SECTION A — (5 × 8 = 40 marks)

Answer any FIVE questions.

1. Construct the truth table for the following formula
 $(P \wedge Q) \vee (\neg P \wedge Q) \vee (P \wedge \neg Q) \vee (\neg P \wedge \neg Q)$.
2. Show that
 $((P \vee Q) \wedge \neg(\neg P \wedge (\neg Q \vee \neg R))) \vee (\neg P \wedge \neg Q) \vee (\neg P \wedge \neg R)$
 is a tautology.
3. If A and B are two sets then show that
 $A \subseteq B \Leftrightarrow A \cap B = A$.
4. Show whether the following relations are transitive
 $R_1 = \{\langle 1, 1 \rangle\}$, $R_2 = \{\langle 1, 2 \rangle \langle 2, 2 \rangle\}$
 $R_3 = \{\langle 1, 2 \rangle, \langle 2, 3 \rangle, \langle 1, 3 \rangle, \langle 2, 1 \rangle\}$.
5. If X and Y are finite sets, find a necessary condition for the existence of one-to-one mappings from X to Y .
6. Show that the function $f\langle x, y \rangle = x + y$ is primitive recursive.

7. Show that the set N of natural numbers is a semigroup under the operation $x * y = \max\{x, y\}$. Is it a monoid?
8. When graphs are said to be isomorphic and Homeomorphic?

SECTION B — ($4 \times 15 = 60$ marks)

Answer any FOUR questions.

9. Show that :

$$P \rightarrow (Q \rightarrow R) \Leftrightarrow P \rightarrow (\neg Q \vee R) \Leftrightarrow (P \wedge Q) \rightarrow R.$$
10. Show that :

$$P(x) \wedge (x)Q(x) \Rightarrow (\exists x)(P(x) \wedge Q(x)).$$
11. Write $A \times B \times C$, B^2 , A^3 , $B^2 \times A$ and $A \times B$ where $A = \{1\}$, $B = \{a, b\}$ and $C = \{2, 3\}$.
12. Let $X = \{1, 2, 3, 4, 5, 6, 7\}$ and $R = \{\langle x, y \rangle / x - y \text{ is divisible by } 3\}$. Show that R is an equivalence relation.
13. If $A = \{1, 2, 3, \dots, n\}$, show that any function from A to A which is one-to-one must also be onto and conversely.
14. Show that every subgroup of a cyclic group is normal.
15. Show that the sum of in degrees of all the nodes of a simple digraph is equal to the sum of out degrees of all its nodes and that this sum is equal to the number of edges of the graph.

DE-7057

Sub. Code

16

DISTANCE EDUCATION

M.Sc. (SE) (5 Year Integrated) DEGREE EXAMINATION,
MAY 2018.

C PROGRAMMING – LAB

Time : Three hours

Maximum : 100 marks

Examiner should select and give ONE question to each candidate by LOT system.

1. (a) Write a C program to convert a given number into words for numbers 1 to 5 if 1 to ONE, 2 to TWO and 5 to FIVE.
- (b) A man is paid at the hourly rate of Rs. 15/- per hour for the first 45 hours worked. Thereafter, overtime is paid at 1.5 times the hourly rate for the next 25 hours and 2 times the hourly rate for further hours worked. Write a C program to input the number of hours worked per week, calculate and print his gross weekly wage.

----- Cut here -----

2. (a) Write a C program to find the roots of a quadratic equation $ax^2 + bx + c = 0$.
- (b) Write a C program to implement any five string operations using switch statement.

3. (a) Write a C program to find the roots of a quadratic equation (using function definition) $ax^2 + bx + c = 0$.
- (b) Write a C program to find the factorial of a given number using recursion.

----- Cut here -----

4. (a) Write a C program for matrix manipulation (Addition, Subtraction, multiplication) using function.
- (b) Write a program in C to find a word is Palin drome or not.

----- Cut here -----

5. (a) There are ten students in a class. Their names and marks in three different subjects are given. If a student takes more than 40 marks in each subject, then he is declared "PASS", otherwise "FAIL". Write a C program to do above using structure concept.
- (b) Write a C program to read 10 values to an array variable. Use pointers to locate and display each value.

DE-7058**Sub. Code****17**

DISTANCE EDUCATION

M.Sc. (Software Engineering) (5 Years Integrated) DEGREE
EXAMINATION, MAY 2018.

DATA STRUCTURES LAB

Time : Three hours

Maximum : 100 marks

One question should be given to each candidate by
LOT system.

Each sub-division carries 50 marks.

1. (a) Write a menu driven program in C to search an element in an array using linear and binary search methods.
- (b) Write a C program for linked list implementation of queue operations.

----- Cut here -----

2. (a) Write a C program to sort the given set of elements using insertion sort.
- (b) Write a C program to implement insert and delete operations on queue using array concept.

----- Cut here -----

3. (a) Write a C program to sort the given set of elements using selection sort.
- (b) Write a C program to implement insert and delete operations on linked list structure.

4. (a) Write a C program to sort 10 numbers in descending order with naming of variable and the value before and after sorting.

(b) Write a C program to evaluate the given mathematical expression using stack.

----- Cut here -----

5. (a) Write a C program to search the given element in an array using binary search.

(b) Write a C program to implement push and pop operations on stack.

----- Cut here -----

6. (a) Write a C program for linked list implementation of queue operations.

(b) Write a C program to copy the contents of one file to another.

----- Cut here -----

7. (a) Write a C program to evaluate the given mathematical expression using stack.

(b) Write a C program to sort the given set of elements using selection sort.

----- Cut here -----

8. (a) Write a C program to implement insert and delete operations on linked list structure.

(b) Write a C program to sort 10 numbers in ascending order with naming of variable and the value before and after sorting.

DE-4147**Sub. Code****23****DISTANCE EDUCATION**

M.Sc. (SE) (5 Years Integrated) DEGREE EXAMINATION,
MAY 2018.

OBJECT ORIENTED PROGRAMMING AND C++

Time : Three hours

Maximum : 100 marks

SECTION A — (5 × 8 = 40 marks)

Answer any FIVE of the following questions.

1. Mention the principles of object oriented programming.
2. How to use functions in C++?
3. Define objects and classes with examples.
4. Explain the usage of “inline” function.
5. Give the purpose of pointers.
6. How to use new and delete operators?
7. What is meant by polymorphism?
8. Explain the concept of virtual function.

SECTION B — (4 × 15 = 60 marks)

Answer any FOUR of the following questions.

9. Discuss the data types supported in C++.
10. What are the operators allowed in C++? Give its hierarchy.

11. Explain the concept of friend function. Discuss the rules to be kept in mind while using it.
 12. Explain the usage of copy constructor.
 13. Write a program in C++ to implement the concept of overloading unary operators.
 14. What is inheritance? Discuss its types.
 15. Compare and contrast static binding with dynamic binding.
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DE-4148**Sub. Code****24****DISTANCE EDUCATION**

M.Sc. (SE) 5 Years Integrated DEGREE EXAMINATION,
MAY 2018.

OPERATING SYSTEMS

Time : Three hours

Maximum : 100 marks

SECTION A — (5 × 8 = 40 marks)

Answer any FIVE questions.

1. Explain the concept of Shell, Protection and Input/Output in Operating Systems.
2. Describe the history of Operating systems.
3. Discuss on the concept of Semaphores, Monitors and Message Passing in IPC.
4. Explain the methods of Deadlock Detection and Recovery.
5. Describe the components of I/O Software Layers.
6. Discuss on the concept of Segmentation in Memory management.
7. Explain the different kinds of Directory systems and their functions.
8. Describe the concept of File System Reliability.

SECTION B — (4 × 15 = 60 marks)

Answer any FOUR questions.

9. Discuss on the System calls for Process, File, and Directory management.
 10. Explain the Process model, creation termination, hierarchies, states and implementation.
 11. Describe the working principles of I/O hardware in detail.
 12. Discuss on the Deadlock Avoidance techniques.
 13. Explain the concept of Virtual memory in detail.
 14. Describe the any four Page replacement algorithms.
 15. Discuss on the concept of Shared files and Disk space management.
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DE-4149

Sub. Code

25

DISTANCE EDUCATION

M.Sc. (Software Engineering) 5 Years Integrated DEGREE
EXAMINATION, MAY 2018.

RELATIONAL DATABASE MANAGEMENT SYSTEM

Time : Three hours

Maximum : 100 marks

SECTION A — (5 × 8 = 40 marks)

Answer any FIVE questions.

1. How DBMS is better than file management system?
2. Describe the different kinds of mapping operations.
3. Give an overview of oracle architecture and write the benefits of oracle.
4. What are the aggregate functions offered by SQL and explain.
5. How can you create and modify a table?
6. What is candidate key and composite key? Also write the differences between primary key and foreign key.
7. Explain the concept of relational model.
8. Explain any four embedded SQL statements.

SECTION B — (4 × 15 = 60 marks)

Answer any FOUR questions.

9. What are the possible schemas that we can have in database systems? Explain them.
10. Describe the data manipulation facilities with examples.

11. Explain the different types of databases.
 12. List out the set operations available in SQL and explain them.
 13. With an example, explain how can you copy and rename a table.
 14. Explain the client/server system and write the properties of relational database.
 15. Explain how can you work with NULL values.
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DE-7059

Sub. Code

26

DISTANCE EDUCATION

M.Sc. (Software Engineering) (5 Years Integrated) DEGREE
EXAMINATION, MAY 2018.

C++ LAB

Time : Three hours

Maximum : 100 marks

ONE question should be given to each candidate
by LOT system.

Each sub-division carries 50 marks.

1. (a) Create a class DONOR that contains donor number, name, age, address, sex, blood group. Write a program using C++ to print out the number, name and address of the donors for the following categories.
 - (i) Blood donors having A+ blood group
 - (ii) Female donors in the age group between 16 and 25
- (b) Write a program using polymorphism to calculate the square of any two numbers of type int, float, double and long.

----- Cut here -----

2. (a) Write a menu driven C++ program to add and subtract given two matrices of order $m \times n$ defined in a class, using operator overloading.
- (b) Write a C++ program to implement four function (addition, subtraction, division and multiplication) Calculator.

3. (a) Using pointers, create a class and write a program to get the n names and display them in sorted order.
- (b) Raising a number n to power p is the same as multiplying by itself p times. Write a function called power () that takes a double value for n, an int value for p and returns the result as double value. Use default argument of 2 for p, so that if this argument is omitted, the number will be squared. Write a main () function that gets values from the user to test this function.

----- Cut here -----

4. (a) Create a class employee that contains a employee number, name and address. Write a menu driven C++ program to get 'n' number of employee details and display all details in employee name-wise sorted order.
- (b) Write a program in C++ to perform complex number arithmetic operations using operator overloading.

----- Cut here -----

5. (a) Using dynamic constructors, write a C++ program to concatenate two given strings.
- (b) Define a class to represent a bank account with data members – name of the depositor, account number, type of account and member functions – deposit amount and withdraw amount. Show name and balance. Write a program to test this class.

6. (a) Write a program to process students marks with the help of classes. The class has private variables for names, mark1, mark2 and mark3. It has two member functions – get data() to get input and result() to print the results. All subject marks must be ≥ 50 for pass otherwise fail.
- (b) Imagine a publishing company that markets both books and audio – cassette versions of its works. Create a class publication that stores the title (a string) and price (float) of a publication. From this class derive two classes – Book, which adds a page count (int) and TAPE which adds a length count (int). Each of these three classes should have a getdata() function to get its data from the user at the keyboard and a putdata() function to display its data. Write a main() function to test the book and tape classes by creating instances of them, asking the uses to fill their data with getdata() and then display the data with putdata().

----- Cut here -----

7. (a) Write a C++ program to find the difference and total length of given two various tubes specifies in meters and centimeters using operator overloading.
- (b) Write a C++ program to overload the + operator to provide string addition.

----- Cut here -----

8. (a) Create a class EMPLOYEE that contains employee number, name, designation, basic pay, LIC and PF. Include a member function to getdata from user for 'n' employees. Write a C++ program to prepare the pay slips for 'n' number of employees in a neat format.
- (b) Write a C++ program to find the smallest of three numbers using inline function.

DE-7060

Sub. Code

27

DISTANCE EDUCATION

M.Sc. (Software Engineering) (5 Years Integrated) DEGREE
EXAMINATION, MAY 2018.

RELATIONAL DATABASE MANAGEMENT SYSTEMS –
LAB

Time : Three hours

Maximum : 100 marks

Examiner should select and give ONE question to each
candidate by lot system.

1. (a) A daily sales file contains records with the following
fields:

Dept no, data, item description, sales price for each
item, quantity, cost of each item

Write a program to list all the input data and
compute total amount of sales and profit for each
sale. Accumulate and print total sales and profit.
Show the output report in a neat format.

- (b) Write a program to prepare a EB bill for a customer.
Assume your own database.

----- Cut here -----

2. (a) A newspaper vendor buys newspapers on wholesale
from a distributor for Rs. 4 and sale them in retail
for Rs. 4.50. At the end of the day the unsold papers
are returned to distributor for Rs. 1 per paper. Write
a program to prepare a report for the newspaper
vendor in a neat format.

- (b) Write a program to process the Xth class results for the following conditions:

Tamil, English, Maths, Science, Social ≥ 40 ; pass otherwise fail

Assume your own database.

----- Cut here -----

3. (a) An examination has been conducted to a class of 10 students and the following are given as inputs.

Five test marks, reg no, name

Write a program to do the following:

Assign a letter grade to each student based on the average score and list register number, average score, grade. The minimum pass for each subject is 50. Assume your own grading system.

- (b) Write a program to evaluate the HRA, IT, GPAY and NETPAY.

Base Table is PAY and the corresponding fields are:

empno, name, basic pay, DA, HRA, IT, GPAY and NETPAY

Input from the table is empno, name, basic pay and DA.

----- Cut here -----

4. (a) A company XYZ Ltd. states monthly salary to its employee. It consists of Basic salary, allowance and deduction.

DA = 72% of Basic salary

HRA = 10% of Basic salary

Deductions

PF = 20% of basic + DA

LIC = payable by an employee

Loan = if any payable by an employee

Create a master table of 10 records with the following fields:

Employee no., name, designation, basic salary, HRA, DA, LIC premium number and Bank A/c no.

A transaction file contains:

Employee no., PF, LIC premium no., loan recovery.

Write a program to prepare a report in a neat format.

- (b) The base table is having the column of Reg no., marks and rank. Enter Regno. And marks in the base table upto 10 records. Write a program to update the base table while allocating rank.

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5. (a) Write a program to prepare a mark statement of a student using student table and mark table. Assume your own data.
- (b) Write a program to calculate the commission for the given basic.

If basic > 10,000 commission is 20%

If basic > 5,000 and \leq 10,000 commission is 10%

Otherwise commission is 5%

Assume your own data.

DE-4150**Sub. Code****31**

DISTANCE EDUCATION

M.Sc. (Software Engineering) (5 Years Integrated) DEGREE
EXAMINATION, MAY 2018.

COMPUTER NETWORKS

Time : Three hours

Maximum : 100 marks

SECTION A — (5 × 8 = 40 marks)

Answer any FIVE questions.

1. Describe the different types of services offered by the layers.
2. Explain error-detecting codes with an example.
3. Describe the hierarchical routing algorithm.
4. Explain the UDP protocol.
5. Draw the basic model of web and explain how the web works.
6. Write the steps in JPEG and explain.
7. Describe the different scenarios for releasing a connection.
8. How routing and switching is established in ATM Networks?

SECTION B — (4 × 15 = 60 marks)

Answer any FOUR questions.

9. Explain the OSI reference model.
10. Describe the design issues of data link layer.

11. Describe the congestion control approaches that can be used in datagram subnets.
 12. Describe the elements of transport protocols.
 13. Explain the RSA algorithm with an example.
 14. Describe the one-bit sliding window protocol.
 15. Describe the satellites that are placed in different regions.
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DE-4151

Sub. Code

32

DISTANCE EDUCATION

M.Sc. (Software Engineering) (5 Years Integrated) DEGREE
EXAMINATION, MAY 2018.

INTERNET AND JAVA PROGRAMMING

Time : Three hours

Maximum : 100 marks

SECTION A — (5 × 8 = 40 marks)

Answer any FIVE questions.

1. Explain about online chatting and message.
2. What are the features of java? Explain.
3. (a) Write a HTML code to design your class time table.
(b) What is event in javascript? Explain the event handling mechanism.
4. Write an applet program to design menu.
5. Explain about Introspection and Customization in Java Beans.
6. Discuss about various types of JDBC drivers.
7. Briefly explain about multi dimensional arrays in java.
8. Write short note on :
 - (a) Interfaces
 - (b) Abstract classes.

SECTION B — (4 × 15 = 60 marks)

Answer any FOUR questions.

9. (a) Explain in detail about sending and receiving e-mail.
(b) Briefly explain about Usenet Newsgroup.
 10. Explain in detail about various looping statements in java. Give example.
 11. Write short note on :
 - (a) Java Servlets
 - (b) Layout managers in AWT.
 12. (a) Explain about various types of HTML list tags. Give example. (8)
(b) What are the data types in JavaScript? Explain. (7)
 13. Explain in detail about handling I/O Stream classes with example.
 14. Define Inheritance. Discuss about different types of inheritance with example Java program.
 15. Write short note on :
 - (a) TCP/IP Sockets (8)
 - (b) Architecture of Remote Method Invocation (RMI). (7)
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DE-4152

Sub. Code

33

DISTANCE EDUCATION

M.Sc. (Software Engineering) (5 Years Integrated) DEGREE
EXAMINATION, MAY 2018.

SOFTWARE ENGINEERING

Time : Three hours

Maximum : 100 marks

SECTION A — (5 × 8 = 40 marks)

Answer any FIVE of the following.

1. Brief the influence of the size factor on a project development. (8)
2. Write a note on Spiral Model. (8)
3. Brief the role of Cost factor in developing a project (8)
4. Elucidate the Project Planning activities. (8)
5. Write a note on Quality standards of a software. (8)
6. What is meant by software review? Explain. (8)
7. Discuss about any two techniques for software requirement specification. (8)
8. Briefly discuss on the Black Box Testing. (8)

SECTION B — (4 × 15 = 60 marks)

Answer any FOUR of the following.

9. Describe the Linear Sequential model. (15)
10. How do you estimate the various costs involved in a project development? Discuss. (15)

11. Discuss, in brief, about the Risk Management. (15)
 12. Illustrate the Structure Analysis of a project. (15)
 13. Discuss the basic design principles of Class-Based Components? (15)
 14. Describe the Objectives of Architectural Design. (15)
 15. Describe the following:
 - (a) Unit testing. (5)
 - (b) Integration testing. (5)
 - (c) System testing. (5)
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DE-4153**Sub. Code****34**

DISTANCE EDUCATION

M.Sc. (SE) (5 Years Integrated) DEGREE EXAMINATION,
MAY 2018.

COMPUTER GRAPHICS AND MULTIMEDIA

Time : Three hours

Maximum : 100 marks

PART A — (5 × 8 = 40 marks)

Answer any FIVE of the following questions.

1. Write short notes on I/O devices.
2. Describe the DDA algorithm.
3. What are the Basic transformations? Explain briefly.
4. Explain about Viewing pipeline.
5. Describe about Projections.
6. Discuss about the Components of multimedia.
7. How to develop a Multimedia project?
8. Write short notes on various Multimedia applications.

PART B — (4 × 15 = 60 marks)

Answer any FOUR of the following questions.

9. Explain about an Output primitives.
10. Describe about the types of Clipping.
11. Explain about the Hidden surface in 3D concepts.

12. Discuss about the Visualization and Rendering.
 13. Describe the Multimedia hardware and software.
 14. Explain about Text in multimedia with suitable example.
 15. Discuss about Video conferencing.
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DE-4154**Sub. Code****35**

DISTANCE EDUCATION

M.Sc. (Software Engineering) (5 Year Integrated) DEGREE
EXAMINATION, MAY 2018.

UNIX AND SHELL PROGRAMMING

Time : Three hours

Maximum : 100 marks

SECTION A — (5 × 8 = 40 marks)

Answer any FIVE of the following.

1. Explain about any four disk utility commands in Unix operating system. (8)
2. Discuss the text processing commands in Unix operating system. (8)
3. Explain the Filter and Pipe concepts in Unix Operating System. (8)
4. Discuss the pre-defined variable in Unix programming with examples. (8)
5. Discuss the Associative arrays in C shell programming with examples. (8)
6. Write a note on the following :
 - (a) Field (4)
 - (b) Record. (4)
7. Discuss the C shell features with examples. (8)
8. Explain about the positional parameters in Unix with examples. (8)

SECTION B — (4 × 15 = 60 marks)

Answer any FOUR of the following.

9. Discuss the following with examples.
 - (a) Security by file permission (5)
 - (b) Process utilities (5)
 - (c) Backup utilities. (5)
 10. Explain the kernel system of the Unix operating system. (15)
 11. Write a shell program to reverse a string. (15)
 12. Write a C shell program to sort a set of N numbers. (15)
 13. Describe the working principles of various looping structures in Unix shell programming. (15)
 14. Write a note on the following :
 - (a) File structures (5)
 - (b) Debugging scripts (5)
 - (c) Expression. (5)
 15. Discuss the various directory API commands with examples. (15)
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DE-7061

Sub. Code

36

DISTANCE EDUCATION

M.Sc. (Software Engineering) (5 Year Integrated) DEGREE
EXAMINATION, MAY 2018.

INTERNET AND JAVA - LAB

Time : 3 hours

Maximum : 100 marks

The Examiner has to choose any ONE question.

Each subdivision carries 50 marks.

1. (a) Design and develop a Web page for n College. The Web page should contains the information related to various Departments in the college and courses offer by them.
- (b) Write an HTML program by incorporating "BOLD, ITALICS, SMALL, SUPERScript, UNDERLINE" in a document.

----- Cut here -----

2. (a) Write a Swing program to create buttons with
 - (i) Tool tip text
 - (ii) Image
 - (iii) Border
 - (iv) Short cut key.
- (b) Write a VB script to perform the following:
 - (i) Get a password
 - (ii) Check the given password
 - (iii) Change the existing password.

3. (a) Write a Java script to create a colour palette and display the text in the colour chosen from the palette with proper background colour.
- (b) Create a form in HTML containing the following fields and then perform the validation of each field using VBScript.

Name - textbox (validation : Only text)

Address - textbox (validation : number with text)

Date of Birth - a combo box (one for each, day, month and year)

Email — textbox (validation Only text with symbol).

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4. (a) Write a Java Script to create a window by using the confirm message.
- (b) Develop a single page advertisement in HTML for a shop to be opened shortly.

----- Cut here -----

5. (a) Create a Web page in the format of the front page of a News Paper using Text link in HTML. Align the Text with colours.
- (b) Write a Swing program to create a Tabbed panel.

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6. (a) Create a Web page with the message 'M.Sc. SOFTWARE ENGINEERING, ALAGAPPA UNIVERSITY'.
- (b) Write a Java script to create an Order Form to purchase the House article.

7. (a) Write a VBScript to perform the following:
- (i) Display the current date.
 - (ii) Find the difference between the two dates.
 - (iii) Find age of a person for his date of birth submitted.
- Use the date format like DD/MM/YY.
- (b) Design and develop a Web page for a College. The Web page should contains the information related to various Departments in the college and courses offer by them.

----- Cut here -----

8. (a) Design and develop a Web page for a College. The Web page should contains the information related to various Departments in the college and courses offer by them.
- (b) Write a Java Script to create a window by using the confirm message.

----- Cut here -----

9. (a) Write a Swing program to create buttons with
- (i) Tool tip text
 - (ii) Image
 - (iii) Border
 - (iv) Short cut key.
- (b) Create a Web page in the format of the front page of a News Paper using Text link in HTML. Align the Text with colours.

10. (a) Write an HTML program by incorporating "BOLD, ITALICS, SMALL, SUPERScript, UNDERLINE" in a document.
 - (b) Write a VBScript, which displays a Calender for the given Month and Year.
-

DE-7062**Sub. Code****37**

DISTANCE EDUCATION

M.Sc. (Software Engineering) (5 Years Integrated) DEGREE
EXAMINATION, MAY 2018.

UNIX AND SHELL PROGRAMMING LAB

Time : Three hours

Maximum : 100 marks

Examiner should select and give ONE question to each
candidate by lot system.

1. (a) Write a shell program which accepts the name of a file from the standard input and then perform the following tests on it :
 - (i) Enter 10 names into the file
 - (ii) Sort the names in existing file
 - (iii) List out the sorted and unsorted file
 - (iv) Quit.
- (b) Develop a program for four-function calculator by using yacc command.

----- Cut here -----

2. (a) Write a shell program to sum up the series :

$$\frac{1}{1!} + \frac{2}{2!} + \frac{3}{3!} + \dots + \frac{20}{20!}$$

- (b) Write a menu driven shell program to copy edit, rename and delete a file.

3. (a) Write a menu driven shell program to perform the following tasks.
- (i) Enter a paragraph of 5 sentences in a file
 - (ii) Search a given whole word in the existing file
 - (iii) Quit.
- (b) Develop a shell programs that periodically monitors the disk for the existence of a file and then executes the program once the file has been located, using UNTIL statement.

----- Cut here -----

4. (a) Write and execute a shell program to print monthly payslips for employees in an organizations. Assume your own data and generate accordingly.
- (b) Write a shell program to find the sum of series :

$$\left(\frac{1}{1^2}\right) + \left(\frac{2}{2^2}\right) + \left(\frac{3}{3^2}\right) + \dots + \left(\frac{10}{10^2}\right).$$

----- Cut here -----

5. (a) Write and execute a shell program to generate leave status report of an organization.
- (b) Write a shell program that accepts the name of a file from the standard input and then perform the following tests on it :
- (i) File existence
 - (ii) File writable
 - (iii) File readable
 - (iv) Both readable and writable.

6. (a) A hospital maintains patient details. Develop a shell program to list the following :
- (i) Blood group-wise patients
 - (ii) Patients list age-wise (between 40 and 60)
 - (iii) Exit.
- (b) Write and execute a shell program to send mail to groups of users by extracting their id's from /etc/group file.

----- Cut here -----

7. (a) Write a menu driven shell program for the following :
- (i) Today's date
 - (ii) Users of system
 - (iii) Quit.
- (b) Write a shell program to read and write the content of a file to another file.

----- Cut here -----

8. (a) Write a shell program to prepare Electricity Bill for domestic consumers :
- 0 – 100 units – Rs. 4.00/unit
 101 – 200 units – Rs. 5.00/unit
 Above 200 units – Rs. 6.00/unit
- Prepare the Electricity Bill in the following format :
- Customer number : _____
 Customer name : _____
 Previous reading : _____
 Current reading : _____
 Amount to be paid : _____
- (b) Develop a shell program using 3 arguments to take the pattern as well as input and output file names. If the pattern is found, display as "Pattern Fund", Else display as "Error message". Also check if right number of arguments are entered.

DE-4155**Sub. Code****41**

DISTANCE EDUCATION

M.Sc. (SE) (5 Years Integrated) DEGREE EXAMINATION,
MAY 2018.

VISUAL PROGRAMMING

Time : Three hours

Maximum : 100 marks

SECTION A — (5 × 8 = 40 marks)

Answer any FIVE questions.

1. Explain in detail about textboxes and labels in Visual Basic.
2. Discuss about File System Controls in Visual Basic.
3. Explain about grid controls in Visual Basic.
4. Write short note on VC++ Document View Architecture.
5. How will you read and write documents in VC++? Explain.
6. Write short note on : Using Splitter Windows.
7. How will you communicate with other applications in VC++? Explain.
8. Discuss about various Dialog Boxes in VC++. Give example.

SECTION B — (4 × 15 = 60 marks)

Answer any FOUR questions.

9. Explain various looping statements in Visual Basic with example.
10. Discuss about different types of operator in Visual Basic. Give example.
11. Design a database and access the database using data control in VB.
12. Discuss about various VC++ components and Resources.
13. Describe the methods for mouse and keyboard events. Give example.
14. (a) How will you manage database using ODBC in VC++. Explain. (10)
(b) Explain about Object Linking and Embedding in VC++. (5)
15. (a) Write a VC++ applications for creating simple Notepad applications. (7)
(b) Explain the steps to create simple calculator using VC++. (8)

DE-4156

Sub. Code

42

DISTANCE EDUCATION

M.Sc (Software Engineering)(5 Years Integrated)
DEGREE EXAMINATION, MAY 2018.

SOFTWARE PROJECT MANAGEMENT AND METRICS

Time : Three hours

Maximum : 100 marks

SECTION A — (5 × 8 = 40 marks)

Answer any FIVE questions.

1. Write about waterfall model of conventional software management.
2. Elucidate the pragmatic view of peer inspections that improves software economics.
3. Distinguish inception phase form elaboration phase.
4. Give a note on engineering artifacts sets.
5. What are major milestones of process checkpoints? Discuss.
6. Narrate the concept of evolutionary with breakdown structures.
7. Discuss the project organizations and its evolution.
8. List out the management indicators that are inevitable for project control and process instrumentation.

SECTION B — (4 × 15 = 60 marks)

Answer any FOUR questions.

9. Write notes on the following:
 - (a) Software economics (7)
 - (b) Pragmatic software cost estimation (8)
10. What are the major components to be focussed to reduce the software product size? Explain in detail.
11. Summarize the old and new ways of software management renaissance.
12. Describe the process of management artifacts and pragmatic artifacts.
13. Give a detailed description on model based software architecture.
14. Explain the different project environment of process automation.
15. What are modern project profiles that are important to have good software project? Explain in detail.

DE-4157

Sub. Code

43

DISTANCE EDUCATION

M.Sc. (Software Engineering) (5 Years Integrated) DEGREE
EXAMINATION, MAY 2018.

WEB TECHNOLOGY

Time : Three hours

Maximum : 100 marks

SECTION A — (5 × 8 = 40 marks)

Answer any FIVE questions.

1. Discuss the important tags that are used for creating a HTML page.
2. Write about DOM and SAX.
3. Give a brief introduction on EJB.
4. Illustrate and explain the persistent and constrained properties of Java beans.
5. With a sample code, explain the means of handling HTTP request and responses.
6. Write about Java X servlet package.
7. Elucidate the process of conditional processing with implicit JSP objects.
8. What are the specific database actions of a JSP page? Explain.

SECTION B — (4 × 15 = 60 marks)

Answer any FOUR questions.

9. Give a neat description on Javascript with dynamic HTML feature.
10. Narrate the features of Java beans, JDK and the advantages of Java beans.
11. Discuss the concept of document type definition that is used in XML. Also discuss the XML schemas.
12. Summarize the concept of TOMCAT web-server and life cycle of a servlet.
13. Write notes on the following concepts related to javax-servlets :
 - (a) Session tracking using cookies. (9)
 - (b) Security issues. (6)
14. Describe the procedure of installing JSD kit in Tomcat-Server and testing process.
15. Explain the database programming and its access using JDBC. Illustrate.

DE-4158

Sub. Code

44

DISTANCE EDUCATION

M.Sc. (Software Engineering) (5 Year Integrated) DEGREE
EXAMINATION, MAY 2018.

DATA WARE HOUSING AND MINING

Time : Three hours

Maximum : 100 marks

PART A — (5 × 8 = 40 marks)

Answer any FIVE questions.

1. Give a note on data warehousing.
2. Discuss the concept of data cleaning.
3. Write about multidimensional and multirelational OLAP.
4. Write notes on K-nearest neighbour classifiers.
5. Summarize the grid based methods used for clustering.
6. Elucidate the frequent pattern based clustering methods.
7. Compare K-means partitioning method with K-medoids partitioning method.
8. Discuss the concept of web content mining.

PART B — (4 × 15 = 60 marks)

Answer any FOUR questions.

9. Give a neat description on data mining functionalities.
10. Describe the concept of data warehouse architecture.

11. Elucidate the process of classification by decision tree induction.
 12. Explain in detail about the Bayesian classification methodology.
 13. Give a detailed description on outlier analysis method.
 14. Explain in detail about any three partitional algorithms.
 15. Discuss on taxonomy of web knowledge mining and ontology based web mining.
-

DE-4159

Sub. Code

45

DISTANCE EDUCATION

M.Sc. (Software Engineering) (5 Years Integrated) DEGREE
EXAMINATION, MAY 2018.

DISTRIBUTED COMPUTING

Time : Three hours

Maximum : 100 marks

SECTION A — (5 × 8 = 40 marks)

Answer any FIVE questions.

1. How can you implement intranet and describe the services of intranet?
2. Discuss about IP multicast.
3. Explain how multithreading helps us to maximize the throughput.
4. What are the uses of cryptography? Explain them briefly.
5. Describe the main design issues of for name services.
6. Describe the procedure for detecting global properties.
7. What are nested transactions? Also write its advantages.
8. How can you detect a distributed deadlock?

SECTION B — (4 × 15 = 60 marks)

Answer any FOUR questions.

9. What are the factors to be considered in order to derive the client-server model and explain.
 10. Describe the main features of TCP/IP and write the advantages and limitations when used in distributed systems.
 11. Explain the distributed object model and describe the design issues of RMI.
 12. Draw the operating system layers and explain. Also describe the core functionality of OS.
 13. Explain the architecture of SUN NFS.
 14. Write about Logical time and Logical clocks in detail.
 15. Explain the distributed multimedia system.
-

DE-7063

Sub. Code

46

DISTANCE EDUCATION

M.Sc. (SE) (5 Years Integrated) DEGREE EXAMINATION,
MAY 2018.

VISUAL BASIC AND VC++ LAB

Time : Three hours

Maximum : 100 marks

Each Student has to select ONE question by lot system.

1. (a) Write event procedure for the following :
 - (i) Display date and time in the label box at run time.
 - (ii) Find the power of a number (Accept base number and power number as inputs)
 - (iii) Temperature conversion (From Fahrenheit to Centigrade).
(Use Label, Textbox, command button)
- (b) Write a Visual C++ program to create a window of desired size using MFC.

----- Cut here -----

2. (a) Write event procedure for the following :
 - (i) Reverse a string.
 - (ii) Determine whether the given string is palindrome or not.
 - (iii) Change the case of a string from lower to upper and vice-versa.
(Use Label, Textbox, command button)
- (b) Write a Visual C++ program to handle Windows messages in MFC program.

3. (a) Create a form with Textbox, Combo box and Command Button and do the following operations :
- (i) Add the University name in the combo box at run time.
 - (ii) Search and delete the particular University in the combo box.
 - (iii) In a message box, display the total number of University names available in the combo box.
 - (iv) Sort the University names in the alphabetical order.
- (b) Write a Visual C++ program to fill background of the client area with a bitmap.

----- Cut here -----

4. (a) Using a control array, create a simple calculator which will do the following operation.
- (i) Addition
 - (ii) Subtraction
 - (iii) Multiplication
 - (iv) Division
 - (v) Square
 - (vi) Power
 - (vii) Modulus
- (b) Write a Visual C++ program to get the status of the shift and toggle keys using MFC.

5. (a) Create a pay table in employee database with Empno, Empname, Basicpay, HRA, DA, PF, LIC, GP and NP fields. Use the following formulae for computations.
- HRA = 10% of BP
 DA = 5% of BP
 PF = 3% of BP
 LIC = 5% of BP
 GP = BP+DA+HRA
 NP = GP—(PF+LIC)
- Using Remote Data Access Object, Implement the following operations.
- (i) Insert a record
 - (ii) Search and delete a record.
 - (iii) Modify the record.
 - (iv) Display all the employee records whose names are starting with the letter “M”.
- (b) Write a Visual C++ program to generate a status bar and show the status of Caps Lock, Num Lock, and Scroll Lock in it.

----- Cut here -----

6. (a) Create a table PATIENT in HOSPITAL database with the following fields: Patient number, Patient Name, Address, Blood group, Disease. Using ActiveX data access object, develop a hospital management system with the following operation.
- (i) Insert a record into the table.
 - (ii) Search and delete a record
 - (iii) Modify the record
 - (iv) Display all the patients' details with the corresponding blood group from the combo box.
- (b) Write a Visual C++ program to create a list box in window.

7. (a) Write a VB program to perform the following operations over the records in a random Access file:
- (i) Insert
 - (ii) Delete
 - (iii) Search
- (b) Write a Visual C++ program to find out whether a mouse is attached or not; and if attached, how many buttons in it.

----- Cut here -----

8. (a) Develop a data report using Employee table and perform the following operations :
- (i) Display all the Employee details.
 - (ii) Display all the employee details in each department and display total salary in each department.
 - (iii) Display all the employee details which starts with part of the employee name specified in Textbox.
 - (iv) Write a Visual C++ program to fill the background of the client area with a bitmap.

DE-7064

Sub. Code

47

DISTANCE EDUCATION

M.Sc. (Software Engineering (5 Years Integrated)) DEGREE
EXAMINATION, MAY 2018.

WEB TECHNOLOGY — LAB

Time : Three hours

Maximum : 100 marks

Examiner should select and give one question to each
candidate to lot system.

1. (a) Create a webpage of your favorite leader using HTML. Design the page with attractive background color, text color and background image.
(b) Write an ASP program to prepare employee paybill using javascript.

----- Cut here -----

2. (a) Create a webpage to print your bio-data using table format.
(b) Create an image animation using Javascript.

----- Cut here -----

3. (a) Create a webpage of your favorite teacher. Design the page with attractive color combinations, with suitable headings and horizontal rules.
(b) Develop an application for JSP-Servlet communication.

4. (a) Write HTML document to create a webpage to display your higher secondary marksheet using table format.
- (b) Write servlet program to send Email message.

----- Cut here -----

5. (a) Write a servlet program to display "Hello World".
- (b) Write an XML document to display your bio-data. Write an XSL style sheet and attach the same to the XML document. Validate the document using DTD or XSD.

----- Cut here -----

6. (a) Write a HTML table with rows and columns and split them using rowspan and colspan.
- (b) Write a JSP program to display the list of books in a library using JDBC.

----- Cut here -----

7. (a) Create a web page in the format of a news paper using text lines. Design the page using appropriate text and color formatting features.
- (b) Write an ASP program to prepare student marklist using Javascript.

----- Cut here -----

8. (a) Write a JSP program to display employee paybill using JDBC.
- (b) Create a home page of your college website using HTML.

DE-4160

Sub. Code

51

DISTANCE EDUCATION

M.Sc. (Software Engineering) (5 Years Integrated) DEGREE
EXAMINATION, MAY 2018.

SOFTWARE TESTING AND REUSE

Time : Three hours

Maximum : 100 marks

SECTION A — (5 × 8 = 40 marks)

Answer any FIVE of the following questions.

1. Explain about Path testing.
2. Discuss about Bugs.
3. Write a note orthogonal Boundaries.
4. What are the Basic concepts of path products? Explain.
5. Discuss about Building Tools.
6. List the testability tips in state testing.
7. Discuss about why interface testing is needed.
8. Compare functional testing and Regression testing.

SECTION B — (4 × 15 = 60 marks)

Answer any FOUR questions.

9. Write a brief note on Path Instrumentation.
10. Explain in detail about Data flow testing strategies.

11. Write the rules of Boolean Algebra with Example.
 12. Explain about KV charts with example.
 13. Discuss about reduction procedure.
 14. Explain about the power of a Matrix.
 15. Discuss about the HTTP connection for website access.
-

DE-4161

Sub. Code

52

DISTANCE EDUCATION

M.Sc. (Software Engineering) (5 Year Integrated) DEGREE
EXAMINATION, MAY 2018.

CRYPTOGRAPHY AND NETWORK SECURITY

Time : Three hours

Maximum : 100 marks

SECTION A — (5 × 8 = 40 marks)

Answer any FIVE questions.

1. List and briefly define categories of passive and active security threats.
2. Explain the model for network security.
3. What are the two basic functions used in encryption algorithms? Explain.
4. What properties must a hash function have to be useful for message authentication? Describe.
5. What are the six ingredients of public-key encryption scheme? Explain.
6. What is a digital signature? Explain.
7. What services are provided by IP Security? Describe.
8. Explain the basic concepts of SNMP.

SECTION B — (4 × 15 = 60 marks)

Answer any FOUR questions.

9. List and describe the different categories of security mechanisms.
 10. Explain the different cipher block modes of operation.
 11. Illustrate the overall operation of HMAC.
 12. Write the RSA public-key algorithm and explain it.
 13. What are the five principal services provided by PGP? Explain the general format of PGP message.
 14. Write a brief note on SSL and SET.
 15. Explain the nature and classification of viruses.
-

DE-4162

Sub. Code

53

DISTANCE EDUCATION

M.Sc. (Software Engineering) (5 Years Integrated Course)
DEGREE EXAMINATION, MAY 2018.

SOFTWARE QUALITY ASSURANCE AND STANDARDS

Time : Three hours

Maximum : 100 marks

SECTION A — (5 × 8 = 40 marks)

Answer any FIVE of the following.

1. Explain the theory of software quality.
2. What do you mean by software metrics? How will you measure the quality of software?
3. Write brief notes on quality tasks.
4. Define various case tools and its usage in software quality control.
5. Explain Reliability model.
6. Write about various tools used to measure the software quality.
7. Discuss the elements of QMS.
8. Briefly explain the need for software standards.

SECTION B — (4 × 15 = 60 marks)

Answer any FOUR questions.

9. Discuss the work of Gilb on development in measuring software quality, in detail.
 10. Explain Hierarchical model of Boehm in detail.
 11. Describe SQA plan.
 12. Write in detail about reviews and audits in software quality assurance.
 13. Explain Ray leigh's model framework.
 14. Describe the various levels of CMM and CMMI.
 15. Elaborate six sigma concept.
-

DE-4163

Sub. Code

54

DISTANCE EDUCATION

M.Sc. (SE) (5 years Integrated) DEGREE EXAMINATION,
MAY 2018.

MOBILE COMMUNICATIONS

Time : Three hours

Maximum : 100 marks

SECTION A — (5 × 8 = 40 marks)

Answer any FIVE questions.

1. Write notes on Medium Access Control.
2. List and explain few types of handover methods in GSM.
3. What are the working groups of Wireless ATM?
4. Discuss about Access Point Control protocol?
5. Explain the Architecture Datagram Protocol.
6. What are the applications of DHCP?
7. Explain about IPV6.
8. Give a brief notes on Traditional TCP.

SECTION B — (4 × 15 = 60 marks)

Answer any FOUR questions.

9. Discuss the following
 - (a) Digital Audio Broadcasting
 - (b) Digital Video Broadcasting
10. Describe in detail the IEEE 802.11

11. Discuss on Tunneling and Reverse Tunneling.
 12. Explain the various techniques of transmission and retransmission with examples.
 13. Give a Brief Account on
 - (a) Transaction protocol
 - (b) Session protocol
 - (c) Datagram protocol
 14. Explain briefly the following:
 - (a) GSM Technique
 - (b) Agent Advertisement and Discovery
 15. With examples explain:
 - (a) HIPER LAN
 - (b) Mobile IP Goals
-

DE-4164**Sub. Code****55**

DISTANCE EDUCATION

M.Sc. (SE) 5 Years Integrated DEGREE EXAMINATION,
MAY 2018.

OPEN SOURCE ARCHITECTURE

Time : Three hours

Maximum : 100 marks

SECTION A — (5 × 8 = 40 marks)

Answer any FIVE of the following.

1. What are the categories of Open Source Software? Explain.
2. Write short notes on user and group management.
3. Write short notes on setting up Web Servers.
4. How do you setting up a firewall? Discuss.
5. Briefly explain about C preprocessor.
6. What is GNU linker? Explain.
7. Write about Foss and its significance.
8. Write short notes on Python programming.

SECTION B — (4 × 15 = 60 marks)

Answer any FOUR questions.

9. Write short notes on following:
 - (a) PAM authentication
 - (b) Common System configuration files and log files.
10. Explain about the various methods for connecting to the internet.
11. Explain about the following:
 - (a) Setting up file services
 - (b) Setting up printer services.
12. Explain about Source Code versioning and management tools.
13. How to manage source code revisions, patch and diff using CVS? Explain.
14. Explain about common programming practices and guidelines for GNU/linux and FOSS.
15. Explain about the basics of the X-Windows Server Architecture.

3. (a) Write a PHP program to accept the string and position from the user; from where the characters from the first string are reversed.
- (b) Write a menu driven program to perform the following operations on associative arrays:
 - (i) Sort the array by values (changing the keys) in ascending, descending order.
 - (ii) Also sort the array by values without changing the keys.
 - (iii) Filter the odd elements from an array.
 - (iv) Sort the different arrays at a glance using single function.

----- Cut here -----

4. (a) Write a menu driven program to perform the following operations on arrays:
 - (i) Merge the given arrays.
 - (ii) Find the intersection of two arrays.
 - (iii) Find the union of two arrays.
 - (iv) Find set difference of two arrays.
- (b) Write a PHP script for the following: Design a form to accept two strings from the user. Find whether the small string appears at the start of the large string. Provide a text box to accept the string that will replace all occurrences of small string present in the large string.

5. (a) Write a menu driven program to perform the following queue related operations.
- (i) Insert an element in queue
 - (ii) Delete an element from queue
 - (iii) Display the contents of queue
- (b) Write a PHP script to accept username and password. If in the first three chances, user name and password entered is correct, then display second form, otherwise display error message.

----- Cut here -----

6. (a) Write a program to create a shopping mall. User must be allowed to do purchase from two pages. Each page should have a page total. The third page should displays bill, which consists of a page total of whatever the purchase has been done and print the total.
- (b) Create a form to accept customer information (name, address, ph-no). Once the customer information is accepted, accept product information in the next form (Product name, qty, rate). Display the bill for the customer in the next form. Bill should contain the customer information and the information of the products entered.

7. (a) Create a form to accept student information (name, class, address). Once the student information is accepted, accept marks in next form (Phy, Bio, Chem, Maths, Marathi, English) Display the mark sheet for the student in the next form containing name, class, marks of the subject, total and percentage.
- (b) Write a PHP program to upload a file to the server.

----- Cut here -----

8. (a) Write a PHP program to make a calculator.
- (b) Write a PHP program to copy the content of the one file into another file.

DE-7066

Sub. Code

57

DISTANCE EDUCATION

M.Sc. (SE) (5 Year Integrated) DEGREE EXAMINATION,
MAY 2018.

CASE TOOLS LAB

Time : Three hours

Maximum : 100 marks

Examiner should select and give one question to each candidate by log system.

1. Online Quiz system has to be developed for conducting preliminary stage of quiz as part of department technical symposium INTERRUPT The system developed should contain the following features :
 - (a) The number of participants should be of 50.
 - (b) The duration of quiz is 45 minutes so a timer has to be kept which should show time duration.
 - (c) The number of questions should be 45 chosen randomly from the database in three different areas namely (i) Technical (ii) Logical reasoning (iii) General Knowledge.
 - (d) The questions should be of objective type with multiple options. For each correct answer the participant will receive 1 point and for wrong answer 0.25 point will be deducted.
 - (e) At the end of the quiz the users' score along with information, whether he has been selected or not has to be displayed. Once a student answered a question, he cannot change the answer later.

- 2. (a) Develop a software to illustrate the method of debugging.
- (b) Develop a software for stock maintenance and perform memory leaks analysis.

----- Cut here -----

- 3. (a) Perform program analysis and project planning to illustrate project scope identification, objectives and infrastructure.
- (b) Develop an ATM system and perform validation testing.

----- Cut here -----

- 4. (a) Develop a software that illustrates the way of building and testing class diagram.
- (b) Implement an online ticket reservation system and perform validation testing.

----- Cut here -----

- 5. The telephone system provides simulation and automation of the telephone directory.

The search module searches the given phone number in the database and retrieves the corresponding address. It concurrently displays multiple records whose data match the search key and allows indexed based and author based looping. It allows the updates of telephone number that enable user to further update the details in the database. Most of these features require reusability and hence object oriented approach is used as the mode of development.
