CENTRAL UNIVERSITY OF HARYANA

Term End Examinations May /June 2018

Programme: MCA **Session: 2017-18**

Semester: II **Max. Time: 3 Hours**

Course Title: Software Engineering **Max. Marks: 70**

Course Code: SCSI CS 01 02 08 C 4004

Instructions:

1. Question no. 1 has seven sub parts and students need to answer any four. Each sub part carries three and half Marks.

2. Question no. 2 to 5 have three sub parts and students need to answer any two sub parts of each question. Each sub part carries seven marks.

Question No. 1. Explain the followings briefly: (4X3.5=14)

a) Software characteristics

b) Quality Assurance

c) Verification & Validation

d) Software re-engineering

e) Integration Testing

f) Coupling & Cohesion

g) Importance of Use-case diagram

Question No. 2. (2X7=14)

a) Explain Spiral model & Rapid Application Model. State advantages & disadvantages of each.

b) Explain basic & intermediate COCOMO model for cost estimation.

c) Explain different project scheduling techniques.

Question No. 3. (2X7=14)

a) Discuss various issues related to risk mitigation, monitoring & management.

b) Write briefly about Formal Technical Reviews. How they are conducted?

c) Discuss the components of a Software Requirement Specification document.

Question No. 4. (2X7=14)

a) Explain Modularity, Refinement & Re-factoring in software design process.

b) Write advantages of object oriented design. Explain briefly how object classes are identified?

c) Discuss different fault avoidance & tolerance techniques.

Question No. 5. (2X7=14)

a) Describe various functional & unit testing techniques in detail.

b) Discuss different Debugging techniques.

c) Define maintenance. Describe various methods of estimating maintenance cost.

CENTRAL UNIVERSITY OF HARYANA

Term End Examinations, May 2018

Programme : **M.C.A.**
Semester : **II** **Session:2017-18**
Course Title : **Data Structures Using C/C++** *Max. Time:* ***3 Hours***
Course Code : **SCSI CS 01 02 09 C 4004** *Max.Marks :* ***70***

Note: There are **total five questions** in this question paper and all are **compulsory**. Each Question carries **Fourteen Marks**.
Question no.1 has **seven sub parts** and students need to answer any Four. Each sub part carries **3.5 Marks.**

Question No1. **(4X3.5=14)**

a. Write down conditions for stack overflow and underflow. Write down any 3 applications of Stack.

b. Explain Priority Queue along with its applications.

c. Explain Best case, Worst case, Average case time complexity of insertion Sort.

d. Explain Array representation of tree with an example.

e. Explain any 2 collision resolution techniques with an example.

f. Explain Breadth First Search with an Example.

g. Explain Infix, Prefix and Postfix Notation with example.

Note: Question number **Two to Five** have three sub parts and students need to answer **any two sub part** of each question. Each sub part carries **seven marks.**

Question No.2 **(2X7=14)**

a. What do you mean by Multidimensional arrays? Write down the approach followed to calculate the address of an element when base address, lower bound and upper bound and size are given. Write any two applications of Multidimensional Array.

b. Consider following 2-D Array

A[-20 TO +20][-10 to +10],Base Address=4000,Size of every element=50,Row Major Order

Calculate LOC[0][0].

c. Let f(n),g(n) and h(n) be 3 functions which are defined as follow:

$f(n)=O(g(n))$ && $g(n) \neq O(f(n))$
$g(n)=O(h(n))$ && $h(n) = O(g(n))$

Which one is false and which one is true? Also provide the reason for each option

(a) $f(n)+g(n) = O(h(n))$

(b) $f(n)= O(h(n))$

(c) $h(n)) \neq O(f(n))$

(d) $f(n).h(n) \neq O((h(n).h(n))$

Question No.3 **(2X7=14)**

a. Write down an algorithm to implement Queue with an example.

b. Write down an algorithm to delete an element from Linked List at following positions

(i) Deletion at the Beginning (ii) deletion of given info node

c. Write down an algorithm for evaluation postfix notation. Using same, evaluate following postfix expression

5, 3, 2, * ,+, 9 ,-

Question No.4 **(2X7=14)**

a. Explain One way threading and Two way threading with an example. What is significance of Threaded Binary Tree.

b. Explain difficult techniques used to represent a Graph.

c. Explain the main concept behind Huffman Coding .A file contains characters **a,e,i,o,u,s,t** with frequencies

character	**a**	**e**	**I**	**o**	**u**	**s**	**t**
frequency	**10**	**15**	**12**	**3**	**4**	**13**	**1**

If we use Huffman Coding for data compression, what is the average number of bits required per character?

Question No.5 **(2x7=14)**

a. Insert following elements (show result step by step) in a Binary Search Tree:
38,27,70,19,30,58,75,89,3,28,74
What will be resultant tree after deleting the following nodes in order from tree constructed above:
3,30,70

b. Write a program in C language to implement Merge Sort.

c. Construct an AVL tree using following nodes in order:

A, Z, B, Y, C,X,D,U,E

For each step denote the Balance factor and Type of rotation used.

CENTRAL UNIVERSITY OF HARYANA

Term End Examinations, May/June 2018

Programme:	**MCA**	**Session: 2017-18**
Semester:	**2nd**	**Max. Time: 3 Hours**
Course Title:	**Object Oriented Programming using C++ Language**	
Course Code:	**SCSI CS 01 02 07 C 4004**	**Max. Marks: 70**

Instructions:
1. Question no. 1 has seven sub parts and students need to answer any four. Each sub part carries three and half Marks.
2. Question no. 2 to 5 have three sub parts and students need to answer any two sub parts of each question. Each sub part carries seven marks.

Question No. 1. **(4X3.5=14)**

a) Why an array is called a derived data type?
b) Why do we need the preprocessor directive #include <iostream>?
c) What is a stream? Discuss.
d) What do you mean by enumerated data type?
e) What is reference variable? What is its major use?
f) When do we need to use default arguments in a function?
g) What is the use of Static member functions?

Question No. 2. **(2X7=14)**

a) With the help of an example show how a function returns a reference. Consider a function *max* which will return the reference of the maximum of the two values passed
b) Is it mandatory to use a constructor in a program? Explain constructor overloading with suitable example.
c) Explain the following:
   i. Copy Constructor and Default Construqtor
   ii. *void* data type

Question No. 3. **(2X7=14)**

a) Explain the significance of *'friend'* keyword with the help of suitable example? In which circumstances friend functions are used?
b) What do you mean by operator overloading? Write a program to overload unary minus '-' operator to negative the values.
c) Illustrate how run time polymorphism is achieved by method overriding in inheritance.

Question No. 4. **(2X7=14)**

a) Explain in detail what exceptions mechanism can be used to handle exception? Justify why other mechanism are not used.
b) Distinguish between overloaded functions and function templates. Design a template function to swap two variables.
c) Write note on the following:
   a. Abstract Class and Virtual Class
   b. Early and Late Binding
   c. Virtual Function and Pure Virtual Function

Question No. 5. **(2X7=14)**

a) Explain about file manipulators and file modes? Describe the various file mode options available.
b) Discuss about formatted console I/O and unformatted console I/O.
c) Explain sequential and random access to a file.

CENTRAL UNIVERSITY OF HARYANA

Term End Examinations, May/June 2018

Programme: MCA **Session: 2017-18**

Semester: II **Max. Time: 3 Hours**

Course Title: Internet Fundamentals **Max. Marks: 70**

Course Code: SCSI CS 01 02 05 E 3003

Instructions:

1. Question no. 1 has seven sub parts and students need to answer any four. Each sub part carries three and half Marks.

2. Question no. 2 to 5 have three sub parts and students need to answer any two sub parts of each question. Each sub part carries seven marks.

Question No. 1. (4X3.5=14)

Write short note on the following:

a) DNS
b) Email Server
c) URL
d) World Wide Web
e) Differences between HTML and XML
f) IIS
g) Private key cryptography

Question No. 2. (2X7=14)

a) Discuss SMTP (Simple Mail Transfer Protocol) and POP (Post-office protocols) in detail.
b) Explain the following terms related to Email: PPP, MIME, Mailing List and chat rooms.
c) What is E-mail? Why it is so popular?

Question No. 3. (2X7=14)

a) Discuss various connections options available for internet connectivity.
b) What are IP addresses? Justify their significances. Also discuss structure of IP addresses.
c) Compare IP versions 4 with IP versions 6.

Question No. 4. (2X7=14)

a) What are Frames? Justify their need. Demonstrate the following attributes of the frame tag by creating an HTML document in which they are used.
   *FRAMESPACING
   *MARGINHEIGHT
   *MARGINWIDTH
   *FRAMEBORDER
b) What are web servers? Discuss the functioning of following web servers:
   i. Apache

ii. PWS

c) Create the following table using HTML code

Time Table

	9:00 AM	10:00 AM	11:00 AM
Monday	Data structure	C++ Lab	
Tuesday	C++	Software Engineering	Data structure
Wednesday		C++	Software Engineering
Thursday	Data structure lab		C++
Friday	C++ Lab	Software Engineering	Data Structure

Question No. 5. (2X7=14)

a) What are Firewalls? Explain the working of Firewalls.

b) What is public and private key cryptography. Justify their significance.

c) What is the difference between in-person signature and digital signature? Describe the mechanism of digital signature system.

CENTRAL UNIVERSITY OF HARYANA

Term End Examinations, May/June 2018

Programme: MCA **Session: 2017-18**

Semester: II **Max. Time: 3 Hours**

Course Title: Computer organization and Architecture **Max. Marks: 70**

Course Code: SCSI CS 01 02 10 C 3003

Instructions:

1. Question no. 1 has seven sub parts and students need to answer any four. Each sub part carries three and half Marks.

2. Question no. 2 to 5 have three sub parts and students need to answer any two-sub parts of each question. Each sub part carries seven marks.

Question No. 1. (4X3.5=14)

a) What is Half-subtractor?

b) Explain the BCD codes.

c) Define instruction format.

d) Discuss D-multiplexer and comparator.

e) What is synchronous and asynchronous counter?

f) Define hardwired and micro-programmed unit.

g) Define addressing modes.

Question No. 2. (2X7=14)

a) What are error correction and detection codes? Briefly explain CRC with suitable example.

b) What do you mean by Floating point representation of information?

c) Explain the Booth's algorithm by taking Suitable example. Also, draw the flow chart.

Question No. 3. (2X7=14)

a) What do you mean by flip-flop? Differentiate SR flip-flop and JK Flip-flop.

b) Define the term Register. Design a 4-bit bi-directional shift register with parallel load.

c) Draw the logic diagram and truth table of full adder.

Question No. 4. (2X7=14)

a) What Is Memory Hierarchy? Discuss its characteristics.

b) What are the different types of Semiconductor memories?

c) Differentiate between the SRAM and DRAM.

Question No. 5. (2X7=14)

a) Define each terms associated with the micro program control unit.

b) Differentiate Between the characteristics of RISC and CISC.

c) Discuss the transfer of information between the CPU memory and I/O Devices.

CENTRAL UNIVERSITY OF HARYANA

Term End Examinations, May 2018

Programme : MCA
Semester : II **Session: 2017-18**
Course Title : Software Project Management (Reappear of Re-admitted) *Max. Time: 3 Hours*
Course Code : SCS CSC 01 02 DCEC 05 3003 *Max.Marks : 60*

Note: There are **total eight questions** in this question paper and Each Question carries **12 Marks**. Attempt any 5 questions.

Question No1. **(6X2=12)**

A. Explain how software economics have been evolved from last few decades.
B. Explain Inception and Construction phase of life cycle of software.

Question No2. **(6X2=12)**

A. Explain in detail the process of software automation.
B. Elaborate the various parameters available to measure the product size. What methods Can be used to reduce product size?

Question No3. **(12)**

Explain in detail Major Milestone, Minor Milestone and Status Assessment check point of process.

Question No4. **(12)**

Explain various artifacts of process.

Question No5. **(12)**

Explain various issues of conventional work break down structure. Also explain evolutionary work break down structure.

Question No6. **(12)**

What do you understand by process planning in Software Project Management? What are the key points of process planning?

Question No7. **(12)**

Explain the core metrics of software project. Also explain their purpose and perspectives.

Question No 8 **(12)**

Elaborate the management indicators and also discuss there significance.

CENTRAL UNIVERSITY OF HARYANA

Term End Examinations, May 2018

Programme : M.C.A.
Semester :4th
Course Title :Emerging Trends & Technologies
Course Code : SCS CSC 01 04 GEC 05 4004

Session:2017-18
*Max. Time: **3 Hours***
*Max.Marks : **70***

Note: There are**total five questions**in this question paper and all are **compulsory**. Each Question carries **Fourteen Marks**.
Question no.1 has **seven sub parts** and students need to answer any Four. Each sub part carries **3.5 Marks.**

Question No1. **(4X3.5=14)**

a. Explain BB mobile platform.

b.Write down advantages associated with Android platform.

c.How elasticity is achieved in Cloud Systems?

d. Explain various types of GSM services.

e. Explain IMEI,IMSI,SIM used in GSM.

f. Explain Frequency Hopping Spread Spectrum.

g. Write down differences between GSM and CDMA.

Note: Question number **Two to Five** have three sub parts and students need to answer **any two sub part** of each question. Each sub part carries **seven marks.**

Question No.2 **(2X7=14)**

a.Write short note on following:
(i) IOS
(ii) Windows platform

b. Write short note on following:
(i) Tablet
(ii) Smart phone

c. How Smart phone and Tablet have changed our society? What will be the positive and negative impacts of these devices on our future?

Question No.3 **(2X7=14)**

a.Explain cloud deployment models.

b.Explain benefits of virtualization.

c.Discuss some major benefits of using Cloud Computing.

Question No.4 **(2X7=14)**

a. What do you mean by Mobile Computing? Write down various applications and limitations of Mobile Computing.

b. Elaborate HLR and VLR along with their functionality.

c. Explain Localization and calling mechanism used in GSM.

Question No.5 **(2x7=14)**

a. Write down the differences between TDMA and FDMA.

b. Explain IP packet delivery in Mobile Network Layer.

c. Write down various applications of Audio and Video conferencing in Banking and Education System.

CENTRAL UNIVERSITY OF HARYANA

Term End Examinations, May/June 2018

Programme:	**MCA**	**Session: 2017-18**
Semester:	**IV**	**Max. Time: 3 Hours**
Course Title:	**Theory of Computation**	
Course Code:	**SCS CSC 01 04 C 15 4004**	**Max. Marks: 70**

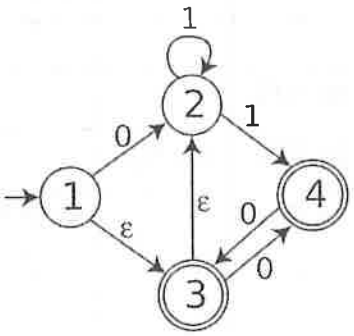
Instructions:
1. Question no. 1 has seven sub parts and students need to answer any four. Each sub part carries three and half Marks.
2. Question no. 2 to 5 have three sub parts and students need to answer any two sub parts of each question. Each sub part carries seven marks.

Question No. 1. **(4X3.5=14)**

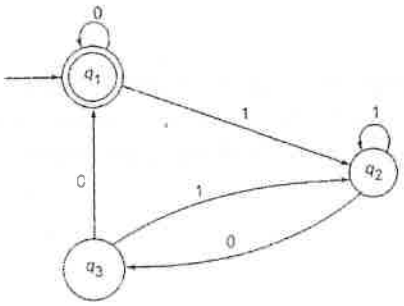
a) Define Pumping Lemma for Regular Grammar.
b) Write the Chomsky's Classification of the Grammar.
c) Discuss the model of Finite Automata.
d) List various types of Turing Machines.
e) What do you mean by Normal Forms of Context Free Grammar?
f) Mention the difference between decidable and undecidable problems.
g) What do you mean by Left Most Derivation and Right Most Derivation?

Question No. 2. **(2X7=14)**

a) Construct a DFA that accepts all strings on {0, 1} and divisible by three. Draw the State Transition Table and State Transition Diagram of the same.
b) Convert the following NFA into DFA and draw the state transition diagram of the same.



c) Find the regular expression of the following using Arden's Theorem.



Question No. 3. **(2X7=14)**

a) What is a Grammar? If G is a grammar **S -> SbS /a** show that G is ambiguous. Also draw the parse tree of the strings taken.

b) Explain the procedure to convert a Grammar into GNF. Also find an equivalent Grammar in CNF for the grammar G = ({S, A, B}, {a, b}, P, S) with productions
S-> bA/aB, A-> bAA / aS/ a, B -> aBB / bS / b.

c) Construct a Push Down Automata to accept the language **L = { $a^n b^n$ / n>=1}.**

Question No. 4. **(2X7=14)**

a) Explain the CYK algorithm with the help of the following example of Grammar:

$S \rightarrow AB \mid BC$
$A \rightarrow BA \mid a$
$B \rightarrow CC \mid b$
$C \rightarrow AB \mid a$

Consider w=baa. Is baa in L (G)?

b) Explain in detail how the model of Turing Machine is different from the model of Pushdown Automata. Discuss closure properties of Recursive Enumerable Languages and Context Free Languages.

c) Consider a Turing Machine given below and determine whether the following strings belong to the language of the below mentioned machine:

1. $W_1 = 101$
2. $W_2 = 1100$

	Next Tape Symbol				
Curr. State	0	1	X	Y	B
→ q_0	(q_1,X,R)	-	-	(q_3,Y,R)	-
q_1	$(q_1,0,R)$	(q_2,Y,L)	-	(q_1,Y,R)	-
q_2	$(q_2,0,L)$	-	(q_0,X,R)	(q_2,Y,L)	-
q_3	-	-	-	(q_3,Y,R)	(q_4,B,R)
*q_4	-	--	-	-	-

Question No. 5. **(2X7=14)**

a) Explain Undecidability and Halting Problem of Turing Machine.

b) Write a note on P, NP, NP Hard and NP Complete Problems.

c) Explain Post Correspondence Problem with suitable example.

CENTRAL UNIVERSITY OF HARYANA

Term End Examinations, May/June 2018

Programme : MCA
Semester : IV
Course Title : Web Engineering
Course Code : SCS CSC 01 04 C 14 4004

Session: 2017-18
Max. Time: ***3 Hours***
Max.Marks : ***70***

Instructions:

1. Question no. 1 has seven sub parts and students need to answer any four. Each sub part carries three and half Marks.
2. Question no. 2 to 5 have three sub parts and students need to answer any two sub parts of each question. Each sub part carries seven marks.

Question No. 1. (4X3.5=14)

a) Explain the Characteristics of Good Web Design
b) How Form processing take place in HTML.
c) Compare Server Side Technologies JSP and ASP.
d) What do you mean by XSL, XPOINTER?
e) Discuss about the Firewall.
f) What is Meta tag in HTML? Elaborate with example
g) Define Namespace and DTD in XML.

Question No. 2. (2X7=14)

a) What do you mean by Information Architect?
b) Explain the various phases of Website development?
c) What do you mean by Navigation System? Explain its various types.

Question No. 3. (2X7=14)

a) Briefly, explain the structure of HTML document? What is the usage of anchor tag?
b) What do you mean by Style sheet? Explain its various types with suitable example.
c) What do you mean by Core attributes and Frame tag? Explain it with example.

Question No. 4. (2X7=14)

a) Briefly explain the working of Proxies?
b) How do we set the Environment Variables in CGI?
c) Explain the various objects of ASP in detail.

Question No. 5. (2X7=14)

a) Differentiate between the XML and HTML in detail.
b) Explain the Middleware Technologies: CORBA, COM, and DCOM?
c) Describe the working of Creating and Reading Cookies.

CENTRAL UNIVERSITY OF HARYANA

Term End Examinations, May/June 2018

Programme: MCA **Session: 2017-18**

Semester: IV **Max. Time: 3 Hours**

Course Title: Programming in Java **Max. Marks: 70**

Course Code: SCS CSC 01 04 C 16 4004

Instructions:

1. Question no. 1 has seven sub parts and students need to answer any four. Each sub part carries three and half Marks.

2. Question no. 2 to 5 have three sub parts and students need to answer any two sub parts of each question. Each sub part carries seven marks.

Question No. 1. (4X3.5=14)

a) Final Keyword.

b) Difference between 'writer' and 'OutputStream'.

c) isAlive and Join method.

d) "Java class can be used both as an applet as well as an application" - Support this statement with an example.

e) Different types of controls available in AWT?

f) Setting the Paint mode in AWT

g) Static Variables and Static Methods

Question No. 2. (2X7=14)

a) "Java is called Machine Independent language" - Justify this statement with proper explanation.

b) Write a simple java program to find the GCD (Greatest Common Divisor) of two numbers.

c) Discuss the various Primitive Data types in Java with Suitable Examples. Also, explain scope of available.

Question No. 3. (2X7=14)

a) Write a Java program for creating four threads to perform the following operations i) Getting N numbers as input ii) Printing the even numbers iii) Printing the odd numbers iv) Computing the average.

b) Explain how communication between threads takes place with a programming example?

c) What is Exception? How exception handled in Java?

Question No. 4. (2X7=14)

a) What is Applet? With the help of a Skelton, explain the lifecycle of an applet.

b) How to read and write data (Both byte and character oriented) in a File in Java. Explain all the classes associated it and its methods.

c) What is HTML APPLET Tag? Write its complete syntax with example of passing parameters to Applet.

Question No. 5. (2X7=14)

a) How Fonts are managed in Java AWT? Write a program to illustrate the creation and managing the fonts in AWT.

b) Write a program to draw ellipses and circles using Java AWT classes.

c) Explain layout managers and menus.

CENTRAL UNIVERSITY OF HARYANA

Term End Examinations, May/June 2018

Programme : MCA
Semester : IV
Course Title : Programming in Java (Re-Appear)
Course Code : SCS CSC 01 04 C 15 4004

Session: 2017-18
Max. Time: 3 Hours
Max.Marks : 60

Note: There are **total eight questions** in this question paper and Each Question carries **12 Marks.** Attempt any 5 questions.

Question No1. **(6X2=12)**

(A) "Java is machine-independent language" Support this statement.

(B) What is type casting? How it is performed in Java language?

Question No2. **(6X2=12)**

(A) What is the basic structure of a class? Explain the creation of objects from a class in detail.

(B) What is abstract class? How it is different from Interfaces?

Question No3. **(6X2=12)**

(A) What is 'CLASSPATH' in package? How packages are created and managed in java? What are their benefits?

(B) What is runtime exception? How it is handled in Java? Write a program to illustrate this.

Question No4. **(6X2=12)**

(A) Write a program to create and running three threads by implementing runnable interface.

(B) What is synchronization? How it is achieved in multi-threaded programming?

Question No5. **(6X2=12)**

(A) How files are handled in Java? Write a program to read and write files using Java I/O.

(B) What is the difference between Reader and InputStream class? Discuss some subclasses of reader and InputStream class with their methods.

Question No 6 **(6X2=12)**

(A) What is the difference between Writer and OutputStream class? Discuss some subclasses of Writer and OutputStream class with their methods.

(A) What is Applet? Write a program to create and display an Applet

Question No 7 **(6X2=12)**

(A) What are some main java AWT Classes? Write a program to draw circle and rectangle using AWT Classes.

(B) What are Font Metrics in AWT? Write a program to manage Text output using font metrics.

Question No 8 **(6X2=12)**

(A) What are the Layout managers? Discuss briefly Card Layout and Grid layout.

(B) What are the main component in a AWT window? Write a program to create a frame window in an Applet.

CENTRAL UNIVERSITY OF HARYANA

Term End Examinations, May 2018

Programme : MCA
Semester : II **Session: 2017-18**
Course Title : Data Structure Using C/C++(Re-appear of Re-admitted) *Max. Time: 3 Hours*
Course Code : SCS CSC 01 02 C 07 4004 *Max.Marks : 60*

Note: There are **total eight questions** in this question paper and Each Question carries **12 Marks.** Attempt any 5 questions.

Question No1. **(6X2=12)**

(A) Explain need of asymptotic notations. Elaborate various asymptotic notations.

(B) Write an algorithm for Binary Search. Explain complexity of Binary Search.

Question No2. **(6X2=12)**

(A) What do you mean by an Algorithm? Explain various characteristics of a good algorithm

(B) Explain any 3 applications of array Data Structure.

Question No3. **(6X2=12)**

(A) What are various applications of stack and write an algorithm to pop an element from stack.

(B) What do you mean by Queue, also write any 3 applications of Queue. Write down an Algorithm to insert an element in Linear Queue.

Question No4. **(6X2=12)**

(A) Write down algorithm for Merge Sort. Also write Best case, Worst case and Average case Time Complexity.

(B) What do you mean by Infix, Prefix and Postfix notation? Give example of each notation. Explain significance of these notations.

Question No5. **(6X2=12)**

(A) What do you mean by Linked List data structure? Explain how a linked list can be represented in computer memory.

(B) Explain the various techniques available for the traversal of a tree data structure.

Question No 6 **(6X2=12)**

(A) What do you understand from term "Tree" in Data Structure? Explain various types of tree. Write down applications of Tree.

(B) What is Threaded Binary Tree? Explain the Important types of Threaded Binary Tree.

Question No 7 **(6X2=12)**

(A) Define the following terms

(i) Degree of Graph
(ii) Complete graph
(iii) Breadth First Search
(iv) Depth First Search

(B) What do you mean by an AVL Tree? Explain Balance factor and permissible values of balance factor for an AVL tree, Also explain various types of rotations used in AVL tree with example.

Question No 8 **(6X2=12)**

(A) What do you mean by Binary Search Tree? Construct a Binary Search Tree using the following nodes in order:

50,30,70,20,90,65,67,28,10,27,29

(B) Write Short Note on following:

(i) Prim's Algorithm

(ii) Kruskal Algorithm

CENTRAL UNIVERSITY OF HARYANA

Term End Examinations, May 2018

Programme : MCA
Semester : II (For Re-appear students)
Course Title : Object Oriented Systems and C++
Course Code : SCS CSC 01 02 C 05 3003

Session: **2017-18**
*Max. Time: **3 Hours***
*Max. Marks: **60***

Note: There are **total eight questions** in this question paper and all questions carry equal marks. Each Question carries **Twelve Marks.** ***Attempt any five questions in all.***

1. What is object oriented programming? How is it different from the procedure oriented programming?

2. Write short note on the following:
   a. Dynamic Binding
   b. Enumerated Data Type
   c. Protected Access type

3. Explain the use of 'try' and 'catch' blocks with the help of suitable example.

4. Differentiate between the following:
   a. Inline Function and Friend Function
   b. Copy Constructor and Default Constructor
   c. Random Access and Sequential Access of a file

5. Can a pointer to Base class also point to an object of its derived class? Justify your answer with suitable construct.

6. How Polymorphism is achieved in C++? Explain in detail.

7. Explain the process of communication of a program with Input Output.

8. With the help of suitable program construct show how objects are passed as arguments to a function and objects are returned by the function?

CENTRAL UNIVERSITY OF HARYANA

Term End Examinations, May-June 2018

Programme : MCA **Session: 2017-18**
Semester : II (Readmitted-Reappear) *Max. Time: 3 Hours*
Course Title : Digital Design and Computer Organisation *Max.Marks : 60*
Course Code : SCS CSC 01 02 C 06 3003

Note: There are **total eight questions** in this question paper and Each Question carries **12 Marks.**
Attempt any five questions.

Question No1. **(6X2=12)**

(A) What is Digital Logic gates? Explain the universal gates.
(B) Explain the Error detecting and correction codes?

Question No2. **(6X2=12)**

(A) What is comparator? Discuss the circuit and working of 2-bit comparator..
(B) Describe the Half-subtractor with suitable example.

Question No3. **(6X2=12)**

(A) Explain the working of S-R flip-flop.
(B) What is Encoder and Decoder? Explain it

Question No4. **(6X2=12)**

(A) Explain the Synchronous counter briefly with suitable example.
(B) What is Register? Explain it with suitable example.

Question No5. **(6X2=12)**

(A) Differentiate between the SRAM and DRAM.

(B) What are the various parameters using which you can compare the different memory devices?

Question No 6 **(6X2=12)**

(A) What are the different types of semi-conductor memories?
(B) Briefly explain the magnetic and optical storage devices.

Question No 7 **(6X2=12)**

(A) What are Instruction cycles? Explain all the phase of instruction cycle.
(B) Define addressing modes. Classify and explain with examples

Question No 8 **(6X2=12)**

(A) What is Microinstruction? Explain the sequencing of microinstruction.

(B) Explain the concept of DMA controller.