

उत्तर प्रदेश राजर्षि टण्डन मुक्त विश्वविद्यालय, इलाहाबाद

अधिन्यास (Assignment)

2015-2016

Master of Computer Application Programme

विषय	: कम्प्यूटर साइंस	विषय कोड	: एम.एस.सी.-सी.एस
Subject Code	: Computer Science	Subject	: MSC - CS
कोर्स शीर्षक	:	Code	
Course Title	: Discretes Mathematical Structure.	कोर्स कोड	: एम.एस.सी.-सी.एस.-01
		Course Code	: M.S.C.-C.S.-01

अधिकतम अंक : 30

Maximum Marks: 30

Section - A

खण्ड - अ

अधिकतम अंक : 18

Max. Marks: 18

नोट - दीर्घ उत्तरी प्रश्न । प्रश्नों के उत्तर 800 से 1000 शब्दों में लिखें । सभी प्रश्न अनिवार्य हैं ।

Note: Long Answer Questions. Answer should be given in 800 to 1000 words. Answer all questions. All questions are compulsory.

- 1.a) Show that $((p \vee q) \wedge \sim (\sim p \wedge (\sim q \vee \sim r)))$
 $\vee (\sim p \wedge \sim q) \vee (\sim p \vee r)$. Is a tautology without using truth table. 4
- b) Rewrite the following arguments using qualifiers, variables and predicate symbols. 2
 - i) All birds can fly
 - ii) Some men are genius.
 - iii) Some numbers are not rational
 - iv) There is a student who likes mathematics but not geography.
2. Explain the following terms with suitable examples - 6
 - a) Conjunction
 - b) Disjunction

- c) Contrapositive
3. Explain the following terms with example.
- a) Homomorphism and Isomorphism graph 3
- b) Euler Graph and Hamiltonian graph. 3

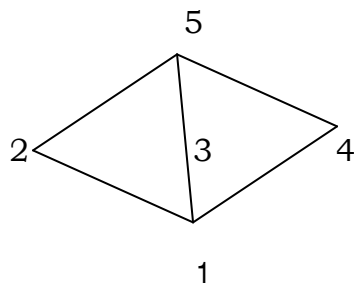
खण्ड - ब

Section—B

Maximum Marks : 12 अधिकतम अंक : 12

Note: Short Answer Questions. Answer should be given in 200 to 300 words. Answer all questions. All questions are compulsory.

- 4- Prove for any two sets A and B that, $(A \cup B)' = A' \cap B'$
5. Show that $R = \{(a, b) \mid a \equiv b \pmod{m}\}$ is an equivalence relation on Z . Show that if $x_1 \equiv y_1$ and $x_2 \equiv y_2$ then $(x_1 + x_2) \equiv (y_1 + y_2)$.
6. Consider the Boolean function.
- $$F(x_1, x_2, x_3, x_4) = x_1 + (x_2 \cdot (x_1' + x_4)) + x_3 \cdot (x_2' + x_4')$$
- i) Simplify f algebraically
- ii) Draw the logic circuit of the f and the reduction of the f.
7. Show that every group of order 3 is cyclic?
8. Show that $a + (b + c) = (a + b) + c$
9. Consider the lattice $L = \{1, 2, 3, 4, 5\}$ as shown in figure. Determine all sub lattices with three or more elements.



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2015-2016

Master of Computer Application Programme

विषय : कम्प्यूटर साइंस

विषय कोड : एम.एस.सी.-सी.एस

Subject Code : Computer Science

Subject : MSC - CS

Code

कोर्स शीर्षक :

कोर्स कोड: एम.एस.सी.-सी.एस.-02

Course Title : Introduction to
Programming language
Through 'C'

Course Code : M.S.C.-C.S.-02

अधिकतम अंक : 30

Maximum Marks: 30

Section - A

खण्ड - अ

अधिकतम अंक : 18

Max. Marks: 18

नोट - दीर्घ उत्तरी प्रश्न । प्रश्नों के उत्तर 800 से 1000 शब्दों में लिखें । सभी प्रश्न अनिवार्य हैं ।

Note: Long Answer Questions. Answer should be given in 800 to 1000 words. Answer all questions. All questions are compulsory.

- 1.a) Describe about the type of looping statements in 'C' with necessary syntax. 3
- b) How to declare an array? Explain about various operations of an array. 3
2. a) State the features of pointers. Write a 'C' program to sort a given number using pointers. 3
- b) List out various file operations in 'C' . Write a C program to count the number of characters in a file. 3
3. a) What is recursive function? Write a program using recursive function to calculate the factorial of a given number. 3
- b) What are the different types of operator in C language and also write down the difference between the associativity and precedence of operators? 3

खण्ड - ब

Section—B

Maximum Marks : 12 अधिकतम अंक : 12

Note: Short Answer Questions. Answer should be given in 200 to 300 words. Answer all questions. All questions are compulsory.

- 4- What is the difference between while and do while loop? Explain with suitable example. 2
5. Differentiate between call by value and call by reference with suitable example. 2
6. Explain different data type used in C programming. 2
7. Differentiate structure and union in 'C' write a C program to store the student details (minimum fields) using structure. 2
8. Write about the formatted and unformatted Input output function in 'C' 2
9. Define Fibonacci numbers. Write a program in C language to generate first 10 odd Fibonacci numbers. 2

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अधिन्यास (Assignment)

2015-2016

Master of Computer Application Programme

Subject Code : Data Structure

Subject : MCS

कोर्स शीर्षक :

Code

कोर्स कोड: एम.सी.एस.-03

Course Title : Data Structure

Course Code : M.C.S.-03 (O)

अधिकतम अंक : 30

Maximum Marks: 30

Section - A

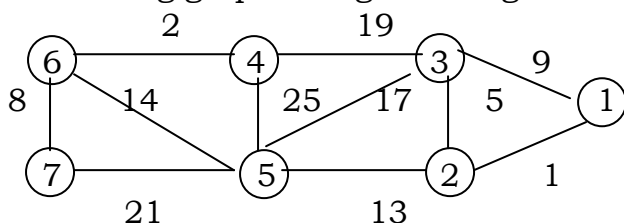
खण्ड - अ

अधिकतम अंक : 18

Max. Marks: 18

Note: Long Answer Questions. Answer should be given in 800 to 1000 words. Answer all questions. All questions are compulsory.

- 1.a) Write the difference between array and linked list. 2
- b) Write an algorithm and C function to reverse a single linked list. 4
2. a) What is circular queue? Write a C code to insert an element in circular queue? Write all the condition for over flow. 3
- b) Write a function in C language to reverse a string using stacks. 3
3. a) Define spanning tree. Find the minimal spanning tree for the following graph using rim's Algorithm. 3



- b) Describe different graph traversal techniques. . 3

खण्ड - ब

Section—B

Maximum Marks : 12 अधिकतम अंक : 12

Note: Short Answer Questions. Answer should be given in 200 to 300 words. Answer all questions. All questions are compulsory.

- 4- Convert following intix expression into postfix expression. 2
 $A + (B \times C + D) / E$
5. The preorder and inorder traversal of binary tree is given below ,
construct the tree- 2
Pre order - FAEKCDHGB
In order - EACKFHDBG
6. Sort the list by using merge sort - 2
10, 25, 16, 5, 35, 48, 8
7. Describe Sparse matrix by using suitable example. 2
8. Define Binary search tree. Create BST for the following data, show
all steps. 2
20, 10, 25, 5, 15, 22, 30, 3, 14, 13
9. What is Tower of Hanoi problem? Write the recursive code in C
language for the problem. 2

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अधिन्यास (Assignment)

2015-2016

Master of Computer Application Programme

Subject Code : Data Computer funda-
Mental and Assembly
Language programming

Subject : MCS
Code

Course Title : Data Structure

Course Code : M.C.S.-04 (N)

अधिकतम अंक : 30

Maximum Marks: 30

Section - A

खण्ड - अ

अधिकतम अंक : 18

Max. Marks: 18

Note: Long Answer Questions. Answer should be given in 800 to 1000 words. Answer all questions. All questions are compulsory.

1. What is flip flop ? Explain the characteristics of master slave flip flop.
2. What do you mean Addressing mode? Discuss the different type of Addressing mode with suitable example.
3. What do you mean by Register? How is it different from counter.

खण्ड - ब

Section—B

Maximum Marks : 12

अधिकतम अंक : 12

Note: Short Answer Questions. Answer should be given in 200 to 300 words. Answer all questions. All questions are compulsory.

- 4- What is X or gate?
5. What is DMA?
6. List the application of Microprocessor.
7. What do you mean by Interrupt?
8. Write Assembly language programme for addition of two decimal number.
9. Write Assembly language programme to swap the value of two variable.

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अधिन्यास (Assignment)

2015-2016

Master of Computer Application Programme

Subject Code : Data Computer funda-
Mental and Assembly
Language programming

Subject : MCS
Code

Course Title : Theory of Computation

Course Code : M.C.S.-06 (O)
M.C.S.-05 (N)

अधिकतम अंक : 30

Maximum Marks: 30

Section - A

खण्ड - अ

अधिकतम अंक : 18

Max. Marks: 18

Note: Long Answer Questions. Answer should be given in 800 to 1000 words. Answer all questions. All questions are compulsory.

1. Define the finite state automata list the application of this machine.
2. What do you mean by Regular Language? How you can prove that certain language would be a regular language. .
3. Explain the concept of universal Turing Machine.

खण्ड - ब

Section—B

Maximum Marks : 12

अधिकतम अंक : 12

Note: Short Answer Questions. Answer should be given in 200 to 300 words. Answer all questions. All questions are compulsory.

- 4- What do you mean by mealy machine?
5. What is content sensitive language? Give the two examples.
6. Define the push down Automata.
7. Explain any one example of pushdown automata
8. What is NP Hard problem?
9. State the pumping lemma.

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अधिन्यास (Assignment)

2015-2016

Master of Computer Applications (MCA)

Subject : MCA/MS-C

Subject Code : MCA

Course Title: System Analysis and Design.

Course Code : MCA-1.4 / MSC- CS-06

: 30

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Maximum Marks: 30

Note. Answer should be given in 800 to 1000 words. Answer all questions. All questions are compulsory.

Section - A

खण्ड - अ

अधिकतम अंक : 18

Maximum Marks: 18

1. What is an information System? Explain classification of systems in brief. Also explain the need of SDLC for proper development of a system.
2. What is SRS? Briefly explain any four characteristics of SRS. Develop an SRS for Library Management System. Make appropriate assumptions.
3. What is CASE tool? Categories various types of CASE tools.

Section - B

खण्ड - ब

अधिकतम अंक : 12

Maximum Marks: 12

Note: Short Answer Questions. Answer should be given in 200 to 300 words. All questions are compulsory.

4. What is a decision tree? Draw a decision tree for a system of your choice.
5. What is the need of system maintenance?
6. Give levels and components of MIS. Who are the key persons at all the levels of MIS?
7. Differentiate between coupling and cohesion.
8. What do you mean by internal information, external information and turnaround document?
9. What activities are performed during design phase? Explain them.

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अधिन्यास (Assignment)

2015-2016

Master of Computer Application Programme

Subject Code : Introduction to
S/W Engineering

Subject : MCS-08
Code

Course Title : "Introduction to Software
Engineering"

Course Code : M.C.S.-07 N
M.C.S.-08 (O)

अधिकतम अंक : 30

Maximum Marks: 30

Section - A

खण्ड - अ

अधिकतम अंक : 18

Max. Marks: 18

Note: Long Answer Questions. Answer should be given in 800 to 1000 words. Answer all questions. All questions are compulsory.

1. What is SRS ? List and explain component of SRS?
2. What is DFD? Explain the rules for designing a DFD? What are the various tools used for designing it.
3. Discuss. Software testing strategies.

Section—B

Maximum Marks : 12

अधिकतम अंक : 12

Note: Short Answer Questions. Answer should be given in 200 to 300 words. Answer all questions. All questions are compulsory.

- 4- What is case tool?
5. Explain the concept of software quality.
6. Define a software and its characteristics.
7. What is data dictionary? Where it is used.
8. Explain type of coupling and cohesion with example.
9. What is code documentation? Explain with example.

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अधिन्यास (Assignment)

2015-2016

Master of Computer Application Programme

Subject Code : C++ & object Oriented
Programming

Subject : MCS-09
Code

Course Title : "C++ and object oriented
programming"

Course Code : M.C.S.-08 (N)
M.C.S.-09 (O)

अधिकतम अंक : 30

Maximum Marks: 30

Section - A

खण्ड - अ

अधिकतम अंक : 18

Max. Marks: 18

Note: Long Answer Questions. Answer should be given in 800 to 1000 words. Answer all questions. All questions are compulsory.

1. What is operator overloading? Illustrate Operator overloading concept to concatenate strings.
2. Explain why do we need to use constructors? Explain a copy constructor with an example.
3. What are the different forms of inheritance supported by C++ ? Explain with examples.

Section—B

Maximum Marks : 12

अधिकतम अंक : 12

Note: Short Answer Questions. Answer should be given in 200 to 300 words. Answer all questions. All questions are compulsory.

- 4- What do you mean by "this" function?
5. What are pure virtual function?
6. What do you mean by container classes?
7. What is a Use case? Also explain with example.
8. What is reusability ? Which things can be reused.
9. Discuss on Jacobson et al. Methodologies.

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अधिन्यास (Assignment)

2015-2016

Master of Computer Application Programme

Subject Code : Computer Science

Subject : MSc.-CS

Code

Course Title : Computer Networks

Course Code: MSc.C.S.-14(O)

MSc.C.S.-09(N)

अधिकतम अंक : 30

Maximum Marks: 30

Section - A

खण्ड - अ

अधिकतम अंक : 18

Max. Marks: 18

Note: Long Answer Questions. Answer should be given in 800 to 1000 words. Answer all questions. All questions are compulsory.

1. Compare and contrast OSI & TCP / IP model.
2. What do you mean by switching? Also explain types of switching.
3. Explain classes of IP address in detail.

Section—B

Maximum Marks : 12

अधिकतम अंक : 12

Note: Short Answer Questions. Answer should be given in 200 to 300 words. Answer all questions. All questions are compulsory.

- 4- What do you mean by modulation?
5. Explain multiplexing and its types.
6. What do you mean by routing? Differentiate distance vector. Routing and Link state Roution .
7. Compare TCP and UDP. Also give examples of applications where these protocols are implemented.
8. Define IPV6 and its address format.
9. Explain in brief:
a) ICMP b) IGMP c) ARP (d) RARP

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अधिन्यास (Assignment)

2015-2016

Master of Computer Application Programme

Subject Code : Introduction of System
Software

Subject : MCS-07
Code

Course Title : "Introduction to System
Software"

Course Code : M.C.S.-011 (N)
M.C.S.-07 (O)

अधिकतम अंक : 30

Maximum Marks: 30

Section - A

खण्ड - अ

अधिकतम अंक : 18

Max. Marks: 18

Note: Long Answer Questions. Answer should be given in 800 to 1000 words. Answer all questions. All questions are compulsory.

1. Discuss various features of Unix operating system.
2. Explain how memory management is implemented in UNIX operating system.
3. Explain various deadlock Recovery Methods.

Section—B

Maximum Marks : 12

अधिकतम अंक : 12

Note: Short Answer Questions. Answer should be given in 200 to 300 words. Answer all questions. All questions are compulsory.

- 4- What is translators? Also define macro processor and loader.
5. Discuss the operating system services.
6. Define process and explain process state with diagram.
7. Describe the critical section problem.
8. What is multiprocessor system?
9. List the file permissions that are used in UNIX.

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अधिन्यास (Assignment)

2015-2016

Master of Computer Applications (MCA)

Subject : MCA/MSC-CS

Subject Code : MCA

Course Title: Object Oriented

Course Code : MCA-3.4

Analysis and Design

MSC-CS-12

DeefOekeâlece Debkeâ

: 30

Maximum Marks: 30

Note. Answer should be given in 800 to 1000 words. Answer all questions. All questions are compulsory.

Section - A

खण्ड - अ

अधिकतम अंक : 18

Maximum Marks: 18

1. Describe in detail the major and minor elements of object model. Give suitable examples.
2. What are the approaches used for identification of classes and attributes? Explain.
3. What is the relationship between cohesion and coupling? Identify the type of coupling in the following. How can it overcome?

Section - B

खण्ड - ब

अधिकतम अंक : 12

Maximum Marks: 12

Note: Short Answer Questions. Answer should be given in 200 to 300 words. All questions are compulsory.

4. Name the UML diagrams used for the following:
 - a) modeling behaviour of an object.
 - b) interaction between groups of objects.
5. How does object relational database differ from object databases?
6. Mention the design axioms applied to object-oriented design.
7. Give the sequence diagram for making a telephone call.
8. Describe how class diagram, object diagram and generalization are represented with UML Diagram.
9. Describe the activities involved in an ATM transaction.

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अधिन्यास (Assignment)

2015-2016

Master of Computer Applications (MCA)

Subject : MCA

Subject Code : MCA /MSC-CS

Course Title: Numeral and Statistical Computing.

Course Code : MCA-5.3 (New)
MSC-CS-13

: 30

DeefOekeâlece Debkeâ

Maximum Marks: 30

Note. Answer should be given in 800 to 1000 words. Answer all questions. All questions are compulsory.

Section - A

खण्ड - अ

अधिकतम अंक : 18

Maximum Marks: 18

1. a) Using the Gauss elimination method solve the following linear system of equations:
$$X + y + z = 3$$
$$4x + 3y + 4z = 8$$
$$9x + 3y + 4z = 7$$
- b) Explain Regula Falsi method with suitable examples.
2. a) Find a real root of the equation $x \sin x + \cos x = 0$ between (2,3) by Bisection method.
- b) Using Newton - Raphson method find an iterative scheme to compute the cube root of a positive number.
3. a) What do you mean by Binomial Distribution. Explain with suitable example.
- b) Define lines of Regression. Derive the formula for angle between two lines of regression.
- c)

Section - B

खण्ड - ब

अधिकतम अंक : 12

Maximum Marks: 12

Note: Short Answer Questions. Answer should be given in 200 to 300 words. All questions are compulsory.

4. Explain floating point representations with suitable examples.
5. Evaluate the integral $\int_0^2 \frac{1}{1+x} dx$ by using Simpson 3/8 rule with $h=1/3$.

6. Show that the mean and Variance of the poisson distribution are each equal to the parameter λ .
7. Explain Runge-Kutta method for fourth order.
8. Given $\frac{dy}{dx} = \frac{y-x}{y+x}$ with $y = 1$ for $x = 0$. Find y approximately for $x = 0.1$ by Euler's method.
9. Define the followings :
 - i) Coefficients of Kurtosis.
 - ii) Moments about mean.
 - iii) Coefficients of Skewness.
 - iv) Skewness of a distribution.

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अधिन्यास (Assignment)

2015-2016

Master of Computer Applications (MCA)

Subject : MCA/ MSC-CS Subject Code : MCA/ MSC-CS
Course Title: Accountancy and Financial Management Course Code : MCA-5.5
MSC-CS-14

: 30

DeefOekeâlece Debkeâ

Maximum Marks: 30

Note. Answer should be given in 800 to 1000 words. Answer all questions. All questions are compulsory.

Section - A

खण्ड - अ

अधिकतम अंक : 18

Maximum Marks: 18

1. What is the scope of Accounting? Explain its Emerging role.
2. Explain Ratio Analysis?
3. Explain how future value of money is determine?

Section - B

खण्ड - ब

अधिकतम अंक : 12

Maximum Marks: 12

Note: Short Answer Questions. Answer should be given in 200 to 300 words. All questions are compulsory.

4. Describe Accounting cycle.
5. Elaborate with example any two Accounting concept.
6. Explain conservative working capital strategy?.
7. What are reasons for holding inventory?
8. Explain ABC Analysis?
9. What is Treasury Management?

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अधिन्यास (Assignment)

2015-2016

Master of Computer Application Programme

Subject Code : Computer Science

Subject : MSc.-CS
Code

Course Title : Data Base Management
System

Course Code: MSc.C.S.-12(O)
MSc.C.S.-16(N)

अधिकतम अंक : 30

Maximum Marks: 30

Section - A

खण्ड - अ

अधिकतम अंक : 18

Max. Marks: 18

Note: Long Answer Questions. Answer should be given in 800 to 1000 words. Answer all questions. All questions are compulsory.

1. What is Normalization, Why we use this concept ? Explain different kinds of normal form.
2. What are the different basic steps to develop an E-R model.
3. What is the difference between primary index and a secondary index?

Section—B

Maximum Marks : 12

अधिकतम अंक : 12

Note: Short Answer Questions. Answer should be given in 200 to 300 words. Answer all questions. All questions are compulsory.

- 4- What is referential integrity?
5. Explain Primary, Foreign and Composite keys. How you identify these keys?
6. What is Transaction Logs?
7. What is DML ? What are the types of DML ?
8. What benefit is provided by strict two phase locking?
9. What is deadlock? Can it occur in a serialisable schedule?

उत्तर प्रदेश राजर्षि टण्डन मुक्त विश्वविद्यालय, इलाहाबाद

अधिन्यास (Assignment)

2015-2016

Master of Computer Application Programme

Subject Code : Computer Science

Subject : MSc.-CS

Code

Course Title : Operating System
System

Course Code: MSc.C.S.-13(O)

MSc.C.S.-17(N)

अधिकतम अंक : 30

Maximum Marks: 30

Section - A

खण्ड - अ

अधिकतम अंक : 18

Max. Marks: 18

Note: Long Answer Questions. Answer should be given in 800 to 1000 words. Answer all questions. All questions are compulsory.

1. Explain following:
 - a) Batch Processing OS,
 - b) Real Time OS.
 - c) Distributed OS
 - d) Smart Card OS
2. What do you mean by Process? Explain PCB.
3. Explain Paging & Segmentation in detail.

Section—B

Maximum Marks : 12

अधिकतम अंक : 12

Note: Short Answer Questions. Answer should be given in 200 to 300 words. Answer all questions. All questions are compulsory.

- 4- Explain various stages of process in process life cycle.
5. What is critical section. How many processes can be in critical section at the same time.

6. Explain Semaphores.
7. What do you mean by address space?
8. Differentiate deadlock & starvation.
9. What do you mean by Cryptography?

उत्तर प्रदेश राजर्षि टण्डन मुक्त विश्वविद्यालय, इलाहाबाद

अधिन्यास (Assignment)

2015-2016

Master of Computer Science Programme

Subject Code : Computer Science

Subject : MSc.-CS

Code

Course Title : Core Java

Course Code:MSc.C.S.-17 (O)

MSc.C.S.-18(N)

अधिकतम अंक : 30

Maximum Marks: 30

Section - A

खण्ड - अ

अधिकतम अंक : 18

Max. Marks: 18

Note: Long Answer Questions. Answer should be given in 800 to 1000 words. Answer all questions. All questions are compulsory.

1. What is the difference between Abstract class and interface, describe with suitable example. 6
2. Write short note on - 6
 - a) Exception Handling
 - b) Java Swing
3. What is the role of Garbage Collection? Compare it with finalization. 6

Section—B

Maximum Marks : 12

अधिकतम अंक : 12

Note: Short Answer Questions. Answer should be given in 200 to 300 words. Answer all questions. All questions are compulsory.

- 4- Explain the following code: 2

Result = some condition ? value 1 : value 2 :

5. What is Java virtual Machine, why use Byte Code? 2
6. Explain the type casting. And hw it is done in Java ? 2
7. What is the difference between Java swing and applet? 2
8. Explain Multithreading use in Java. 3
9. Write an application program in Java to check whether the two input strings are equal. 2

उत्तर प्रदेश राजर्षि टण्डन मुक्त विश्वविद्यालय, इलाहाबाद

अधिन्यास (Assignment)

2015-2016

Master of Computer Application Programme

Subject Code : Computer Graphics

Subject : MSc-CS

Code

Course Title : Computer Graphics

Course Code : M.C.S.-011 (O)

M.C.S.-20 (N)

अधिकतम अंक : 30

Maximum Marks: 30

Section - A

खण्ड - अ

अधिकतम अंक : 18

Max. Marks: 18

Note: Long Answer Questions. Answer should be given in 800 to 1000 words. Answer all questions. All questions are compulsory.

1. What are the major application areas of computer graphics?
2. Discuss and explain Bresenham's algorithm for circle generation.
3. Compare parallel and perspective projections with reference to practical use only.

Section—B

Maximum Marks : 12

अधिकतम अंक : 12

Note: Short Answer Questions. Answer should be given in 200 to 300 words. Answer all questions. All questions are compulsory.

- 4- What is the difference between computer graphics and image processing?
5. What is "Refresh Buffer" ?
6. Implement the DDA algorithm to draw a line from (0, 0) to (4, 4).
7. Why are homogeneous coordinates used for transformation computations in computer graphics.

8. Explain Vanishing point with respect to projection.
9. Write the properties of Bezier and B – spline curves.

अधिन्यास (Assignment)

2015-2016

Master of Computer Applications (MCA)

Subject : MCA/ MSC-CS

Subject Code : MCA /MSC-CS

Course Title: Design and Analysis
Of Algorithms.

Course Code : MCA-4.1

MSC-CS 21

DeefOekeâlece Debkeâ : 30
Maximum Marks: 30

Note. Answer should be given in 800 to 1000 words. Answer all questions. All questions are compulsory.

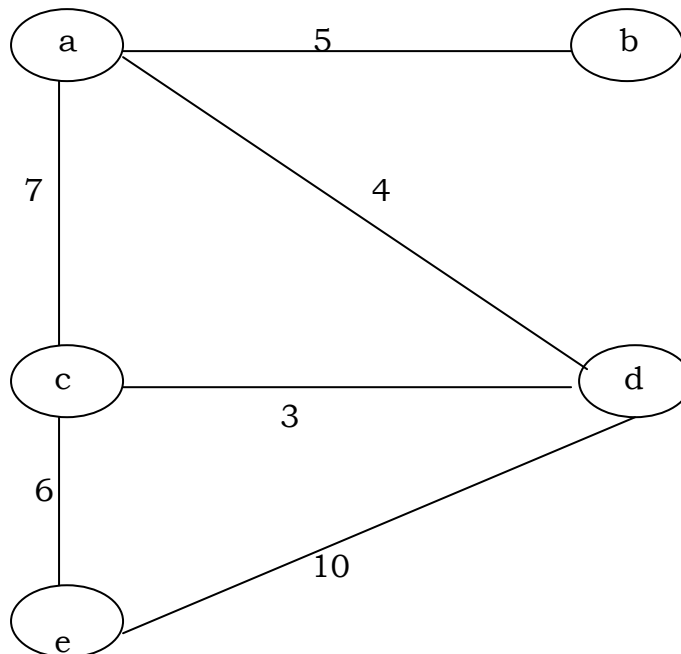
Section - A

खण्ड - अ

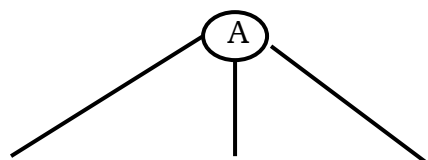
अधिकतम अंक : 18

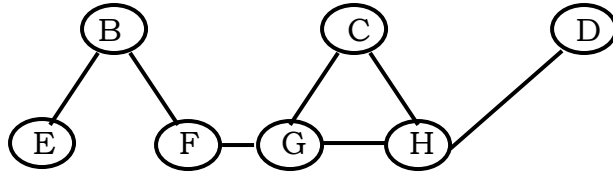
Maximum Marks: 18

1. Explain the essential idea of Dynamic Programming. How does Dynamic Programming differ from Divide and conquer approach for solving problems?
2. Apply each of (i) Prim's and (ii) Kruskal's algorithms one at a time to find minimal spanning tree for the following graph



3. For the graph given in Figure below, use (i) BFS (ii) DFS to visit various vertices. The vertex B is taken as the starting vertex and, if there are more than one vertices adjacent to a vertex, then the adjacent vertices are visited in lexicographic order.





Section - B
खण्ड - ब

अधिकतम अंक : 12
Maximum Marks: 12

Note: Short Answer Questions. Answer should be given in 200 to 300 words. All questions are compulsory.

4. Write a recursive procedure for the product of first n natural numbers.
5. Arrange the following growth rates in increasing order:
 $O(n \log n)$, $O(n^2)$, $O(35n)$, $O(35n^2 + 11)$, $O(1)$, $O(n \log n)$
6. In respect of understanding a problem for solving it using a computer, explain “analyzing the problem” step.
7. What do you mean by Best case analysis of algorithms?
8. Is there a greedy algorithm for every interesting optimization problems? Justify your Claim.
9. What do mean by Halting Problem?

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अधिन्यास (Assignment)

2015-2016

Master of Computer Science Programme

Subject Code : Computer Science

Subject : MSc. CS-16 (O)
Code

Course Title : Artificial Intelligence

Course Code: MSc.-C.S.-23 N)
MSc.C.S.-16(O)

अधिकतम अंक : 30

Maximum Marks: 30

Section - A

खण्ड - अ

अधिकतम अंक : 18

Max. Marks: 18

Note: Long Answer Questions. Answer should be given in 800 to 1000 words. Answer all questions. All questions are compulsory.

1. a) Define the terms artificial intelligence in your words. 3
- b) What is an argent proram? Describe a general model of learning agents. 3
2. What is a Bayesian network? How is the Beyesian network used in the representing the uncertainty about knowledge. 6
3. a) What are the different parameters which are used to evaluate a search technique? 3
- b) Discuss N – Queen Problem. 3

Section—B

Maximum Marks : 12

अधिकतम अंक : 12

Note: Short Answer Questions. Answer should be given in 200 to 300 words. Answer all questions. All questions are compulsory.

- 4- Write Short note on the state of the art of artificial intelligence. 2
5. Prove that following statement are in consistent. 2

- i) John loves Mary and Reddy is not happy but her parents are happy.
 - ii) If John Marries Mary then William and her friend Reddy will be happy.
 - iii) John Will marry . Mary if Mary loves John.
6. Differentiate between supervised and unsupervised learning techniques. 2
7. Write short notes on Stastical pattern recognition. 2
8. Explain the concept of National Language Processing. 2
9. Illustrate decision trees learning technique using a suitable example. 2

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अधिन्यास (Assignment)

2015-2016

Master of Computer Applications (MCA)

Subject : MCA

Subject Code : MCA/MSC-CS

Course Title: Parallel Computing

Course Code : MCA-5.4 /
MSC-CS -24

DeefOekeâlece Debkeâ : 30

Maximum Marks: 30

Note. Answer should be given in 800 to 1000 words. Answer all questions. All questions are compulsory.

Section – A

खण्ड - अ

अधिकतम अंक : 18

Maximum Marks: 18

1. Explain the basic concepts of dataflow computing and describe various applications of parallel computing. 6
2. Explain the Amdahl's law for measuring speed up performance with the help of an example. 6
3. Define array processing. Why are array processors called as SIMD Array computers? With the help of a Block diagram. Explain the architecture of an SIMD array processor.

Section – B

खण्ड - ब

अधिकतम अंक : 12

Maximum Marks: 12

Note: Short Answer Questions. Answer should be given in 200 to 300 words. All questions are compulsory.

4. What do you mean by the concept of multithreading?
5. Explain Hypercube Network with properties.
6. Define Cluster computing.
7. List the classification of vector instruction.
8. Explain the concept of permutation Network with an example.
9. What is Bens Network?