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उत्तर प्रदेश राजर्षि टण्डन मुक्त विश्वविद्यालय, इलाहाबाद

अधिन्यास (Assignment)

2014-2015

स्नातक कम्प्यूटर कार्यक्रम

Bachelor of Computer Science Programme

विषय : विषय कोड : यू.जी.सी.एस.
Subject : Data structure Subject Code: UGCS
कोर्स शीर्षक : कोर्स कोड : यू.जी.सी.एस.-01
Course Title: Data structure Course Code : UGCS-01

अधिकतम अंक : 30
Maximum Marks : 30

Section 'A'

अधिकतम अंक : 18
Maximum 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 a computer system? Explain the functions of CPU in a computer system. 6
2. What are I/O devices? Briefly Explain the various type I/O devices. 6
3. Define software. Differentiate between system software and application software. 6

Section - B

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 are macros. 2
5. What do you mean by mainframe computer. 2
6. List the use of various "disk utilities" in window 95. 2
7. List the four services provided by internet. 2
8. Draw the circuit diagram of Half adder. 2
9. What do you mean by flip-flop. 2

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अधिन्यास (Assignment)

2014-2015

कम्प्यूटर विज्ञान में स्नातक (बी०एस०सी०)

Bachelor of Computer Science (B.Sc.)

विषय : विषय कोड : यू.जी.सी.एस.

Subject : Data structure Subject Code: UGCS

कोर्स शीर्षक : कोर्स कोड : यू.जी.सी.एस.-02

Course Title: Data structure Course Code: UGCS-02

अधिकतम अंक : 30

Maximum Marks : 30

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

Section 'A'

अधिकतम अंक : 18

Maximum Marks : 18

1. What is internet? Explain any two commonly used internet protocols. 6
2. What is a function in MS-Excel? Explain the two categories of function provided by MS-Excel, with an example in each category. 6
3. What is FTP? How it is different from TEL NET? 6

Section - B

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 an e-mail? 2
5. What is an URL? 2
6. What do you mean by Chart wizard? 2
7. What is a templet in Excel? 2
8. What is reminder list after dividing :
11 + 21 + 31 ... 1001 by 5. 2
9. What is a firewall. 2

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अधिन्यास (Assignment)

2014-2015

स्नातक कम्प्यूटर विज्ञान कार्यक्रम

Bachelor of Computer Science Programme

विषय : कम्प्यूटर विज्ञान विषय कोड : यू.जी.सी.एस.
Subject : Computer Science Subject Code: UGCS
कोर्स शीर्षक : कोर्स कोड : यू.जी.सी.एस.-03
Course Title: Introduction to Course Code : UGCS-03
Systemsoftware

अधिकतम अंक : 30
Maximum Marks : 30

खण्ड - 'अ'
Section 'A'

अधिकतम अंक : 18
Maximum Marks : 18

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

1. What do you mean by operating system? What are the major function of operating system? 6
2. What are necessary conditions to hold a deadlock in a system? Explain the resource allocation Graph algorithm to deal with deadlock problem. What are the limitations of this approach? 6
3. Define the following terms : 6
 - (a) Dispatcher
 - (b) Scheduling
 - (c) Swapping
 - (d) Context switching

खण्ड - 'ब'
Section - B

अधिकतम अंक : 12
Maximum Marks : 12

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

4. Discuss the paging system for memory management, Also give its advantages and disadvantages. 3
5. Differentiate between : 3
 - (a) system software and application software
 - (b) General purpose OS and real time OS
6. What do you understand by page replacement? Name the algorithm available for page replacement. 3
7. Write the merits and demerits of Assembly language and High level language. 3

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Bachelor of Computer Science Programme

विषय : कम्प्यूटर विज्ञान विषय कोड : यू.जी.सी.एस.
Subject : Computer Science Subject Code: UGCS
कोर्स शीर्षक : कोर्स कोड : यू.जी.सी.एस.-04
Course Title: 'C' Programming Course Code : UGCS-04

अधिकतम अंक : 30

Maximum Marks : 30

खण्ड - 'अ'

Section 'A'

अधिकतम अंक : 18

Maximum Marks : 18

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

1. The two matrix A (NXN) and B (NXN) of following numbers are given. Write the program in C language to find the multiplication of the transpose of A and B i.e. $A^T \times B^T$. 6
2. What is the advantage of switch statement over if-else statement? Write a program in C using switch statement to find the value of Y for a given value of N between 1 to 4. 6

if N = 1	$Y = (ax+b)^2$
if N = 2	$Y = ax^2+b^3$
if N=3	$Y = -ax+b$
if N=4	$Y = a^2+x$

3. What is a structure? Create a suitable structure for storing the information about the Technical Institutions in India (Assume appropriate attributes to store the information). List all the institutes for a given state. 6

खण्ड - 'ब'

Section - B

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 are various data types in 'C'? Explain with example. 2
5. Write a short note on call by value and call by reference parameter passing method with example. 2
6. Differentiate between the nested if and switch statements in C language with suitable example. 2
7. Define searching. Write a program in C to implement a linear search. 2
8. Write a program in C to check whether a given string is a palindrome or not? Also give the total number of characters in the string. 2
9. (a) Write a function int power (int x, int n) to return x^n . 1
(b) Write a function to return the sum of N number. 1

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Bachelor of Computer Science Programme

विषय : कम्प्यूटर विज्ञान विषय कोड : यू.जी.सी.एस.
Subject : Computer Science Subject Code: UGCS
कोर्स शीर्षक : कोर्स कोड : यू.जी.सी.एस.-05
Course Title: Data Structure through 'C' Course Code : UGCS-05

अधिकतम अंक : 30
Maximum Marks : 30

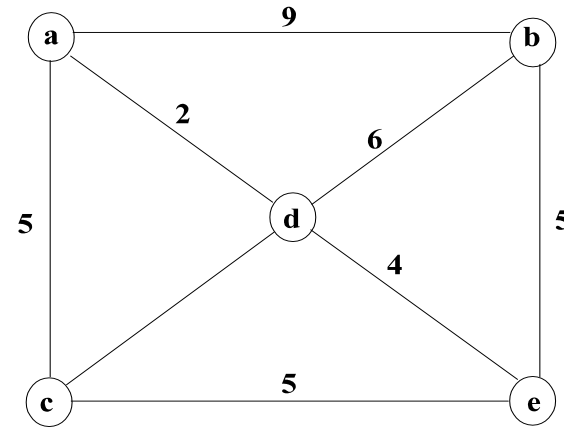
खण्ड - 'अ'

Section 'A'

अधिकतम अंक : 18
Maximum 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 an algorithm to count the number of nodes between given two nodes in a linked list. 6
- (b) If the in-order traversal of a binary tree is B, I, D, A, C, G, E, H, F and its post order traversal is I, D, B, G, C, H, F, E, A, determine the binary tree.
- 2.(a) Write short notes on. 6
(a) Priority queue (ii) garbag collection
(b) Explain the different traversing techniques used in Graph.
3. What is spanning tree? Describe kruskal and Prim's algorithm to find the minimum cost spanning tree and explain the complicity. Determine cost spanning tree for the Graph given below—. 6



खण्ड - ब
Section - B

अधिकतम अंक : 12
Maximum Marks : 12

नोट : लघु उत्तरीय प्रश्न। प्रश्नों के उत्तर 200 से 300 शब्दों में लिखें। सभी प्रश्न अनिवार्य हैं।

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

4. Write an algorithm to convert a postfix expression into an infix expression. Consider following arithmetic expression into postfix expression. 3
 $752 + * 415 \text{ --- } / -$
(i) find the value of the expression.
(ii) find the equivalent prefix form of above expression.
5. Define tree, binary tree, complete binary tree and full binary tree. 3
6. What is recursion ? Write a c program to solve tower of Hanoi Problem. 3
7. Convert the following infix expression into postfix expression— 3
 $A * (B + D) / E - F * (G + HK)$

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Bachelor of Computer Science Programme

विषय : कम्प्यूटर विज्ञान विषय कोड : यू.जी.सी.एस.
Subject : Computer Science Subject Code: UGCS
कोर्स शीर्षक : कोर्स कोड : यू.जी.सी.एस.-06
Course Title: Database Course Code : UGCS-06
Management System

अधिकतम अंक : 30
Maximum Marks : 30

खण्ड - 'अ'

Section 'A'

अधिकतम अंक : 18
Maximum Marks : 18

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

1. Discuss the various feature of relational data model in detail. 6
2. What are the various characteristics of SQL? Discuss five aggregate functions with a suitable example. 6
3. Draw on E-R diagram for a hospital with a set of patients and a set of medical doctors, with each patient a log of the various conducted tests is also associated. 6

खण्ड - 'ब'

Section - B

अधिकतम अंक : 12
Maximum Marks : 12

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

4. Discuss the selection, projection and join operator of relational algebra with suitable example. 2
5. Differentiate between DDL and DML. 2
6. Differentiate between database system and file system. 2
7. Why there is a need of normalization state 3 NF. 2
8. Explain multi-valued data dependency. How is it related to 4NF. 2
9. What is distributed database? also explain with suitable example. 2

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Bachelor of Computer Science Programme

विषय : कम्प्यूटर विज्ञान विषय कोड : यू.जी.सी.एस.
Subject : Computer Science Subject Code: UGCS
कोर्स शीर्षक : कोर्स कोड : यू.जी.सी.एस.-07
Course Title: Elements of system Analysis & Design Course Code : UGCS-07

अधिकतम अंक : 30
Maximum Marks : 30

खण्ड - 'अ'

Section 'A'

अधिकतम अंक : 18
Maximum Marks : 18

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

1. List various stages of the waterfall model. What are the advantages and disadvantage of this model. 6
2. Explain all the components of multimedia system with suitable example. 6
3. Develop on analysis and design document for a video library management information system. Make necessary assumptions. 6

खण्ड - 'ब'

Section - B

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 any four inter-related type of feasibility studies. 2
5. What do you mean by software crisis? 2
6. What is the basic difference between "system approach" and "system analysis"? 2
7. What is SRS? Is it necessary to have a SRS for system Development? Justify your answer. 2
8. What is MIS? Explain function of a typical MIS. 2
9. Explain why aspect of HCI is very important in system design. 2

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स्नातक कम्प्यूटर विज्ञान कार्यक्रम

Bachelor of Computer Science Programme

विषय : कम्प्यूटर विज्ञान विषय कोड : यू.जी.सी.एस.
Subject : Computer Science Subject Code : UGCS -CS
कोर्स शीर्षक : कोर्स कोड : यू.जी.सी.एस.-08
Course Title: Discrete Mathematics Course Code : UGCS-08

अधिकतम अंक : 30
Maximum Marks : 30

खण्ड - 'अ'

Section 'A'

अधिकतम अंक : 18
Maximum Marks : 18

नोट : दीर्घ उत्तरीय प्रश्न। प्रश्नों के अपने 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) In a group of 52 persons who drink tea or coffee or both, 16 drink tea but not coffee and 33 drink tea Find how many.

(i) drink tea and coffee both.

(ii) drink coffee but not tea.

(b) A relation R on the set A = [1, 2, 3, 4] given by

R = [(1, 1), (1, 2), (2, 2), (3, 1), (3, 2), (3, 3), (4, 2), (4, 4)]

Represent it by a digraph and show endegree and out degree of each vertex.

2. (a) Place that conditional operation distributes over conjunction

$P \Rightarrow (q \vee v) \equiv (P \Rightarrow q) \vee (P \Rightarrow v)$

6

(b) Show that the statement

$(p \wedge q) \Rightarrow (p \vee q)$ is a tautology but $(p \vee q) \Rightarrow (p \wedge q)$ is not a tautology.

3. Explain the term logic gate and Kounough Maps in Bookan Algebra. Express the following Booken Exp into complete SUM of product Forms :

$E(x, y, z) = Z(\bar{x} + y) + \square$

6

खण्ड - 'ब'

Section - B

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 the concept of Isomorphic Graphs.

2

5. Use Mathematical enduction to plane that :

2

$$1 + 2 + \dots + n = \frac{n(n+1)}{2}$$

6. Define Hamitanai graph along with its properties.

2

7. Differentiate between. Eulecian walk and Eluecian circuit.

2

8. What do yar mean by Recurrence Relation. Explain Varia methods in brief which are used to some recurrence relation.

2

9. What do yar mean by planar Graph. Explain the planarity condition in a given Graph.

2

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अधिन्यास (Assignment)

2014-2015

स्नातक कम्प्यूटर विज्ञान कार्यक्रम

Bachelor of Computer Science Programme

विषय : कम्प्यूटर विज्ञान विषय कोड : यू.जी.सी.एस.
Subject : Computer Science Subject Code : UGCS
कोर्स शीर्षक : कोर्स कोड : यू.जी.सी.एस.-09
Course Title: Computer Course Code : UGCS-09
Networks

अधिकतम अंक : 30
Maximum Marks : 30

खण्ड - 'अ'

Section 'A'

अधिकतम अंक : 18
Maximum Marks : 18

नोट : दीर्घ उत्तरीय प्रश्न। प्रश्नों के अपने 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) Differentiate between OSI Model and TCP/IP Model. 6
- (b) Draw the layer diagram of TCP/IP Protocol suit and explain it briefly.
2. Define network and explain brief about different type of networks alongwith their characteristics. 6

3. Describe stop and wait flow carted technique. Explain different type of error detection methods. 6

खण्ड - 'ब'

Section - B

अधिकतम अंक : 12
Maximum Marks : 12

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

4. Define multiplexing and differentiate between TDM and FDM. 2
5. What is count to infinity problem. 2
6. Differentiate between mutlicast addressing and Unicast addressing. 2
7. Differentiate between FTP and TFTP. 2
8. Explain different type of headers supported by IPV6. 2
9. Explain the functionality of transport and application layer. 2

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अधिन्यास (Assignment)

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स्नातक कम्प्यूटर विज्ञान कार्यक्रम

Bachelor of Computer Science Programme

विषय : कम्प्यूटर विज्ञान विषय कोड : यू.जी.सी.एस.
Subject : Computer Science Subject Code : UGCS
कोर्स शीर्षक : कोर्स कोड : यू.जी.सी.एस.-10
Course Title: TCP/IP Course Code : UGCS-10
Programming

अधिकतम अंक : 30
Maximum Marks : 30

खण्ड - 'अ'

Section 'A'

अधिकतम अंक : 18
Maximum Marks : 18

नोट : दीर्घ उत्तरीय प्रश्न। प्रश्नों के अपने 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. Explain TCP header frame format. 6
2. What is handshaking. Explain three way handshaking. 6
3. Explain Domain Name system. 6

खण्ड - 'ब'

Section - B

अधिकतम अंक : 12
Maximum Marks : 12

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

4. Differentiate TCP & UDP. 2
5. What do you mean by Public key cryptography. 2
6. Explain the following mail protocols in brief : 2
(a) SMTP (b) POP (c) IMAP (d) MIME.
7. What do you mean by socket. 2
8. Explain the rule of IP with TCP. 2
9. What do you mean by fragmentation. 2

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अधिन्यास (Assignment)

2014-2015

स्नातक कम्प्यूटर विज्ञान कार्यक्रम

Bachelor of Computer Science Programme

विषय : कम्प्यूटर विज्ञान विषय कोड : यू.जी.सी.एस.
Subject : Computer Science Subject Code: UGCS -CS
कोर्स शीर्षक : कोर्स कोड : यू.जी.सी.एस.-11
Course Title: C++ & Object Oriented Programming Course Code : UGCS-11

अधिकतम अंक : 30
Maximum Marks : 30

खण्ड - 'अ'

Section 'A'

अधिकतम अंक : 18
Maximum Marks : 18

नोट : दीर्घ उत्तरीय प्रश्न। प्रश्नों के अपने 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) Explain the meaning of object orientation. 6
(b) What do you understand by object identity explain with an example.
2. Explain concept of polymorphism & inheritance. Explain with example. 6
3. (a) What is UML. What are the different views of UML. 6
(b) Explain the conceptual model of the UML. Also explain the architecture of UML.

खण्ड - 'ब'

Section - B

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 the concept of overloading & overriding. 2
5. Define constructor and its type. 2
6. What is basic structural modeling. 2
7. Explain class and object diagrams with examples. 2
8. Write a program to demonstrate inheritance. 2
9. Identify the objects from the following scenarios : 2
(a) School.
(b) Hospital.
(c) Company.