उत्तर प्रदेश राजर्षि टण्डन मुक्त विश्वविद्यालय, इलाहाबाद

अधिन्यास (Assignment) **2015-2016**

Bachelor of Computer Applications (BCA)

विषय	:	विषय कोड	: बी.सी.ए.
Subject	**: BCA**	**Subject Code**	**: B.C.A.**
कोर्स शीर्षक	:	कोर्स कोड	: बी.सी.ए.-ई 1
Course Title	**: Designe and analysis of Algorithim**	**Course Code**	**: B.C.A.-E1**

अधिकतम अंक : 30

Maximum Marks: 30

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

Section – A

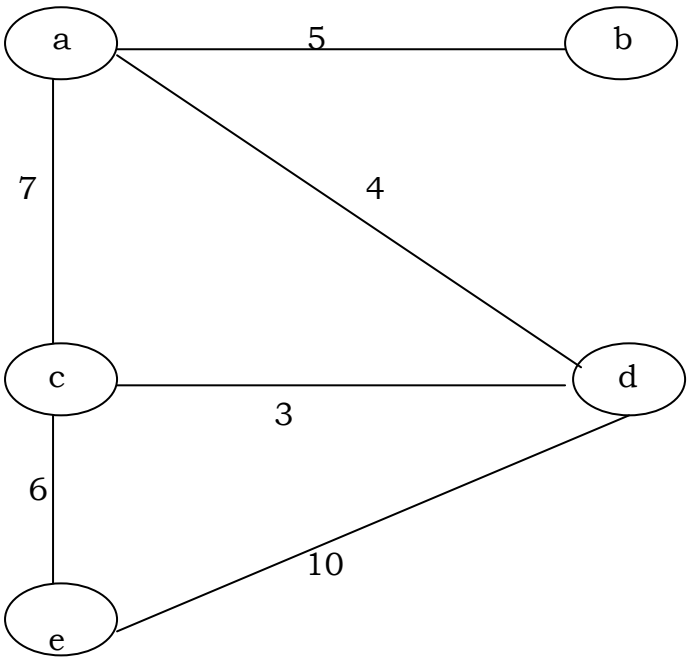
खण्ड - अ

अधिकतम अंक : 18

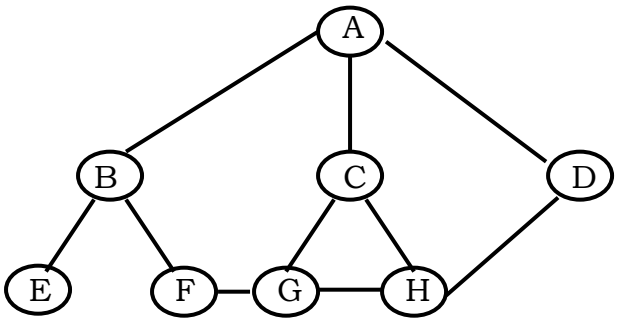
Maximum Marks: 18

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



1. 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) 2, O ((35) n), O (35n2 + 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**

Bachelor of Computer Applications (BCA)

Subject : BCA **Subject Code : B.C.A.**

Course Title : Theory of Computation **Course Code : B.C.A.-18 / E2**

अधिकतम अंक	: 30
Maximum Marks:	30

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

Section – A

खण्ड - अ

अधिकतम अंक	: 18
Maximum Marks:	18

1. State and prove pumping lemma for regular set.
2. Describe the concept of universal Turning Machine (UTM).
3. Design a push down automation to implement the language:

   $L = \{ a^n b^n / n \geq 1 \}$

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 Moore Machine.
5. What is content free language?
6. What are the characteristics of regular languages.
7. Describe any one apaplication of finite automation.
8. Define NP Hard problem.
9. What is Halting problem of Turing Machine.

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अधिन्यास (Assignment) **2015-2016**

Bachelor of Computer Applications (BCA)

विषय	: बी.सी.ए.	विषय कोड	: बी.सी.ए.
Subject	**: BCA**	**Subject Code**	**: B.C.A.**
कोर्स शीर्षक	:	कोर्स कोड	: बी.सी.ए.-ई 3
Course Title	**: Data mining and warehousing**	**Course Code**	**: B.C.A.-E3**

अधिकतम अंक : 30
Maximum Marks: 30

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. All questions are compulsory.

Section – A

खण्ड - अ

अधिकतम अंक : 18
Maximum Marks: 18

1.what is data mining (D.M.)? Define and describe relation ship and pattern detected in data minning .What is the scop of data mining.

2.Explain structure of the data warehouse? Discuss in aDetail all the steps involve in making a data ware house.

3. Explain OLTP and OLAP and also dicuss difference between them?

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 are the requirements of cluster analysis?

5. What type of processing takes place in a data ware house?

6. what are the various types of metadata? Explain in detail?

7. what do you mean by knowledge discovery process?

8. what is Classification?

9. What do you mean by data Cleaning?

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अधिन्यास (Assignment) **2015-2016**

Bachelor of Computer Applications (BCA)

विषय	: प्रबन्धन	विषय कोड	: बी.सी.ए.
Subject	**: E-Commerce**	**Subject Code**	**: B.C.A.**
कोर्स शीर्षक	:	कोर्स कोड	: बी.सी.ए.-ई 4
Course Title	**: E-Commerce**	**Course Code**	**: B.C.A.-E4**

अधिकतम अंक : 30
Maximum Marks: 30

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. All questions are compulsory.

Section – A

खण्ड - अ

अधिकतम अंक : 18
Maximum Marks: 18

1. Define the term E-Commerce. Explain its work flow.
2. Define the term "EDI". Explain its architecture with the help of a diagram.
3. Explain the benefits of e-commerce to organizations, customers and society at large.

Section – B

खण्ड - ब

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. What is a Cyber Crime?
5. Explain any two models of e-commerce.
6. Define the term e-commerce.
7. Explain the security concerns in e-commerce.
8. How did your shopping experience change with the advent of e-commerce?
9. What are advantages and disadvantages of online auctions?

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अधिन्यास (Assignment) **2015-2016**

Bachelor of Computer Applications (BCA)

Subject : Fundamentals and PC Software **Subject Code : B.C.A.**

Course Title : Fundamentals and PC Software **Course Code : B.C.A.-02(0) B.C.A.-1.1(N)_**

अधिकतम अंक : 30
Maximum Marks: 30

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

Section – A

खण्ड - अ

अधिकतम अंक : 18
Maximum Marks: 18

1. Explain the memory hierarchy. Give characteristics of group of memory at each level.
2. What is ISDN? Explain various services provided by ISDN.
3. Explain the differences between followings:

   (i) Compiler and interpreter (ii) Spooling and buffering

   (iii) Message switching and Circuit switching.

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 Computer virus?
5. What are Micros?
6. Explain how graph is created in MS-word.
7. What are different types of computer virus?.
8. How you have to insert header and footer in presentation?
9. Why you need to perform mail merge?

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अधिन्यास (Assignment) **2015-2016**

Bachelor of Computer Application (BCA)

Subject : Foundation Course in Mathematics **Subject Code : B.C.A.**

Course Title : Foundation Course in Mathematics **Course Code : B.C.A.-04(O) B.C.A.-1.3(N)**

अधिकतम अंक : 30
Maximum Marks: 30

Note: Long Answer Questions. All questions are compulsory.

Section – A

खण्ड - अ

अधिकतम अंक : 18
Maximum Marks: 18

1.a) Prove that $A\cap (B\cup C) = (A\cap B) \cup (A\cup C)$.
सिद्ध करें - A, B, C are non-empty sets.

b) Find the Value of x : $(x^2 + 2x + 3)^{1/2} = (2x + 5)$
x का मान ज्ञात करें -

2.a) Find dy/dx : $y = (\text{Sin } x)^x + (x)^{\text{Cos } x}$
ज्ञात करें - A, B, C are non-empty sets.

b) Find the equation of a sphere which passes through A (0,0,0), B (0,1,0), C (1,0,0), D (0,0,1).
गोले का समीकरण ज्ञात करें जो A(0,0,0), B (0,1,0), C (1,0,0), तथा D (0,0,1) से गुजरता है ।

3.a) Integrate $\int_0^{\pi/2} Cos^5 x.\ Sin^7 x\, dx.$
समाकलन करें

b) Show that Every differentiable function is continuous but converse is not true.
दिखायें कि प्रत्येक अवकलनीय फलन सतत होता है जबकि इसका उल्टा सही नहीं है ।

Section – B

खण्ड - ब

अधिकतम अंक : 12
Maximum Marks: 12

Note: Short Answer Questions.All questions are compulsory.

4. सिद्ध करें -
Prove that : $\frac{Sin\, A}{a} = \frac{Sin\, B}{b} = \frac{Sin\, C}{c}$

5. मोनोटोनिक फलन को उदाहरण के साथ व्याख्या करें ।
Explain with example, monotonic functions. .

6. दिखायें कि एकैक - आच्छादक फलन का प्रतिलोम भी एकैक आच्छादक होता है।
Prove that inverse of a bijective function is bijective.

7. ज्ञात करें
Find $\frac{dy}{dx}$ *if* $y = x^{x^x}$

8. समाकलन करें -
Integrate $\int \frac{dx}{1 + Sin\, x}$

9. यदि α, β समीकरण $ax^2 + bx + c = 0$ के मूल हों तो $\alpha^3 + \beta^3$ का मान ज्ञात करें।
If α, β are roots of $ax^2 + bx + c = 0$ then find $\alpha^3 + \beta^3$.

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अधिन्यास (Assignment) **2015-2016**

Bachelor of Computer Applications (BCA)

Subject : BCA **Subject Code : B.C.A.**
Course Title : BASIC ELECTRONIC **Course Code : B.C.A.-1.7**

अधिकतम अंक : 30
Maximum Marks: 30

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

Section – A

खण्ड - अ

अधिकतम अंक : 18
Maximum Marks: 18

1.What is Modulation ? Why is modulation necessary in communication system.

2.What is an Oscillator ? What isits need ? Discuss the advantage of an Oscillator.

3.Explain transmitter biasing in details with sutable example.

Section – B

खण्ड - ब

अधिकतम अंक : 12
Maximum Marks: 12

Note: Short Answer Questions.All questions are compulsory.

4. What are basic logic gates?

5. What are the types of reactifires?

6. What is crystal diode/

7. What do you mean by Operational Amplifire/

8. What is zener diode?

9. What do you mean by Demodulation?

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अधिन्यास (Assignment) **2015-2016**

Bachelor of Computer Applications (BCA)

Subject : BCA **Subject Code : B.C.A.**

Course Title : C.Programing abd data structure **Course Code : B.C.A.-05(O)/ B.C.A.-1.2(N)**

अधिकतम अंक	: 30
Maximum Marks:	30

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

Section – A

खण्ड - अ

अधिकतम अंक	: 18
Maximum Marks:	18

1. What is a stack? What operations are associated with a stack?
2. Define AVL tree. Is the statement "Every Binary Tree is an AVL tree" correct? Justify your answer.
3. Sort the following list of numbers using Quick Sort in descending order:

   1, 3, 2, 5, 4, 6, 12, 10, Show all the passes.

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 any five advantages/disadvantages of Pointers over Arrays.
5. Define "Binary Tree". How does a Binary Tre differ from a Tree?
6. Define "Graph". When can it be said that two vertices of a Graph are connected?
7. Explain Sequential File Organisation.
8. Write an algorithm for the addition of two matrices.
9. What is a Deque?

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अधिन्यास (Assignment) **2015-2016**

Bachelor of Computer Applications (BCA)

Subject : System Software **Subject Code : B.C.A.**
Course Title : System Software **Course Code : B.C.A.-06(O)/ B.C.A.-1.18(N)**

अधिकतम अंक : 30
Maximum Marks: 30

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

Section – A

खण्ड - अ

अधिकतम अंक : 18
Maximum Marks: 18

1. What is a Macro? How are macros defined and called?
2. Explain the commands in UNIX for on-line and off-line communication.
3. Explain the following GUI terms:
   (i) Icons (ii) Desktop metaphors
   (iii) Windows

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 are File Permissions?
5. What is Demand Paging?
6. Explain the three phases of the analysis task of a compiler.
7. Explain the UNIX Booting Process?
8. What do you mean by two pass Assembler?
9. List the function of Loader.

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अधिन्यास (Assignment) **2015-2016**

Bachelor of Computer Applications (BCA)

Subject : Element of system Analysis And Design. **Subject Code : B.C.A.**

Course Title : Element of System Analysis And Design. **Course Code : B.C.A.-07(O)/ B.C.A.-1.11(N)**

अधिकतम अंक	: 30
Maximum Marks:	30

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

Section – A

खण्ड - अ

अधिकतम अंक	: 18
Maximum Marks:	18

1. Explain all the inter-related types of feasibility studies.
2. Explain all the different components of management in accordance with decision oriented view.
3. Define a DFD. Write the conventions that govern the construction of DFDS. Design a DFD for a study centre management system.

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. List various factors which are responsible for the quality of asystem
5. What is the need of system testing?
6. List all the components of Multimedia.
7. Explain the economic, hardware and software factors for vendor's selection.
8. What are the two categories of computer graphics software? Explain them.
9. List all the major types of documentation.

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अधिन्यास (Assignment) **2015-2016**

Bachelor of Computer Applications (BCA)

Subject : Database Management System **Subject Code : B.C.A.**

Course Title : Database Management System **Course Code : B.C.A.-08(O) B.C.A.-1.5(N)**

अधिकतम अंक	: 30
Maximum Marks:	30

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

Section – A

खण्ड - अ

अधिकतम अंक	: 18
Maximum Marks:	18

1. What is entity and attribute? Give some examples of entities and attributes in a manufacturing environment. Why are relationships between entities important?
2. What do you mean by data redundancy? What is the difference between controlled redundancy? What is data independence?
3. Identify the entities and relationships for this organization and construct an E-R diagram. From the E-R diagram, write the scripts for creating a schema.

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. Discuss on the various ways in which we can arrive at a good database design.
5. Explain the various ways in which concurrency control can be implemented in a database.
6. What is data? What do you mean by information? What are the differences between data and information?
7. Who is a DBA? What are the responsibilities of a DBA?
8. What is a transaction? Which are the properties of a transaction and explain each.
9. What is a database trigger? Which are the different kinds of triggers?

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अधिन्यास (Assignment) **2015-2016**

Bachelor of Computer Applications (BCA)

Subject : Introduction to Compupter Organisation **Subject Code : B.C.A.**

Course Title : Introduction to Computer Organisation **Course Code : B.C.A.-09(O)/ B.C.A.-1.22(N)**

अधिकतम अंक	: 30
Maximum Marks:	30

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

Section – A

खण्ड - अ

अधिकतम अंक	: 18
Maximum Marks:	18

1. What is a flip-flop? Explain the characteristics table of SR flip-flop. How are master slave flip flops different to simple flip-flops.
2. Define the term Direct Memory Access in Computer. What is the need of DMA? Compare DMA with I/O processor. In the present day computer, how I/O devices are connected to CPU/Memory.
3. What is a micro-instruction? Explain the different types of Micro-instructions in a computer. What is a micro program? Explain how a micro-program results in execution of an instruction with the help of an example.

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 the process of handling an Interrupt in 8086 microprocessor with the help of an example/diagram..
5. What is the need of RAID?
6. Explain the direct cache memory organization with the help of a diagram.
7. What do you mean by universal gate?
8. How does the number of operand addresses in an Instruction Set affect the size of a program on a computer?
9. Assume a machine whose instructions have only two register operands. The values are loaded the register by a load instruction and results are stored in the memory using a store instruction. Select four best addressing modes for the machine. Give reasons for your selection.

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अधिन्यास (Assignment) **2015-2016**

Bachelor of Computer Applications (BCA)

Subject : Windows Programming **Subject Code : B.C.A.**
Course Title : Windows Programming **Course Code : B.C.A.-10(O)/ B.C.A.-1.15(N)**

अधिकतम अंक : 30
Maximum Marks: 30

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

Section – A

खण्ड - अ

अधिकतम अंक : 18
Maximum Marks: 18

1. What are the implicit and explicit resources in Window Programming? Explain in detail.
2. Write a program in VB for adding List Box, List Items, Check Box, Radio Button and Menus to your Window.\
3. What are the advantages and disadvantages of VB over any other object-oriented language? Explain with suitable examples.

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 short notes in Event – Handler.
5. Explain the concept of database connectivity.
6. Explain the different data types available in VB.
7. Explain the scope of variable in VB.
8. Explain the concept of user-defined procedures.
9. Create a simple front-end database application.

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अधिन्यास (Assignment) **2015-2016**

Bachelor of Computer Applications (BCA)

Subject : Multimedia **Subject Code : B.C.A.**
Course Title : Multimedia **Course Code : B.C.A.-11(O)/ B.C.A.-1.10(N)**

अधिकतम अंक : 30
Maximum Marks: 30

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

Section – A

खण्ड - अ

अधिकतम अंक : 18
Maximum Marks: 18

1. List the hardware and software components essential for professional multimedia development. Also, justify puprpose and need of each of the hardware components.
2. What is the method of storing image in vector format? Explain its advantages.
3. Explain the important features of Flash Software.

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 hypertext?
5. What is morphing?
6. What do you mean by Sampling?
7. What is knowledge based simulations?
8. What do you mean by compressors?
9. Explain the process envolvled in planning of Multimedia Application.

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अधिन्यास (Assignment) **2015-2016**

Bachelor of Computer Applications (BCA)

Subject : RDBMS **Subject Code : B.C.A.**
Course Title : RDBMS **Course Code : B.C.A.-12(O)/ B.C.A.-1.6(N)**

अधिकतम अंक : 30
Maximum Marks: 30

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

Section – A

खण्ड - अ

अधिकतम अंक : 18
Maximum Marks: 18

1. Define normalization. Explain the conditions under which a relation needs to be normalized to 2NF and 3NF with the help of an example.

2. What is file organization? List all the file organization techniques. Make a detailed comparison among all the file organization techniques.

3. Define the following terms.

   (i) Referential integrity. (ii) Foreign key.

   (iii) Transaction (iv) Candidate key.

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.

A Pharmacy company keeps track of its product customers and raw material suppliers using a database management system. The company produces two basic types of products- products for general medical purposes and products that can not be sold without prescriptions. The customers of thepharmacy may be individuals or other companies. Perform the following activities for the company:

4. Make an ER-diagram for the company, stating assumptions if any. You may use the concept of keys, aggregation, generalization, cardinality etc. in a proper way. 2

5. Design the suitable RDBMS tables for the ER-diagram so created in part (4). The database design should include keys, foreign keys, constraints and referential integrity constraints. 2

6. Implement the database design that you have created in (5) using a RDBMS- our advice is that you choose either MySQL or MS ACCESS to do so. 2

7. Create four data entry forms with suitable checks for the database so created. 2

8. Enter at least 4 sets of records in each table preferably using data entry form created in part (7) 2

9. Create four reports for the database you have created. The reports should have proper headings and page numbers and should include totals, if needed. 2

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अधिन्यास (Assignment) **2015-2016**

Bachelor of Computer Applications (BCA)

Subject : Computer Network **Subject Code : B.C.A.**
Course Title : Computer Network **Course Code : B.C.A.-13(O)/ B.C.A.-1.13(N)**

अधिकतम अंक : 30
Maximum Marks: 30

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

Section – A

खण्ड - अ

अधिकतम अंक : 18
Maximum Marks: 18

1. What do you understand by the term computer network? List the key component of a network.
2. Differentiate between OSI and TCP reference model in terms of layers. Functionality of each layer and important protocols at each layer.
3. Describe the following transmission techniques with examples:

   (i) Simplex (ii) Half Duplex (iii) Full Duplex

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 the format of TCP header through illustration.
5. Explain the advantage of ISDN.
6. What is the need of multiplexing channels?
7. What are the various transmission media available?
8. Differentiate between the packet switching and Circuit Switching.
9. Explain the working of Distance Vector Routing using an example.

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अधिन्यास (Assignment) **2015-2016**

Bachelor of Computer Applications (BCA)

Subject : TCP/IP Programming **Subject Code : B.C.A.**
Course Title : TCP/IP Programming **Course Code : B.C.A.-14**

अधिकतम अंक : 30
Maximum Marks: 30

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

Section – A

खण्ड - अ

अधिकतम अंक : 18
Maximum Marks: 18

1. Describe the activities to be performed at evry layer in the TCP model when information flows from layer to another layer.
2. Suppose the class B network uses 20 out of 32 bits to define a network address. How many class B Network are possible in this case?
3. Write short notes on following:

   (i) ICMP. (ii) IP Encasulation

   (iii) Sockets (iv) SNMP

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. How does the TCP handle the issue of multiplexing?
5. The size of the option field of an IP diagram is 20 bytes. What is the value of HLEN field in binary?
6. How does TCP handle the flow control problem?
7. What is DNS?
8. What do you mean by Subjet Masking?
9. What is an “Internetwork”?

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अधिन्यास (Assignment) **2015-2016**

Bachelor of Computer Applications (BCA)

Subject : Operating System **Subject Code : B.C.A.**
Course Title : Operating System **Course Code : B.C.A.-15(O)/ B.C.A.-1.14(N)**

अधिकतम अंक : 30
Maximum Marks: 30

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

Section – A

खण्ड - अ

अधिकतम अंक : 18
Maximum Marks: 18

1. What do you mean by a critical section? Using semaphores, write a solution to readers and writers problem that gives priority to readers.
2. Explain the process states by using processes state transition diagram.
3. Consider the following page reference string:

   1, 2, 3, 4, 2, 1, 5, 6, 2, 1, 2, 3, 7, 6, 3, 2, 1, 2, 3, 6.

   How many page faults would occur for the following replacement algorithms, assuming one, two, three, four, five, six, or seven frames? Remember all frames are initially empty, so your first unique pages will all cost one fault each.

   * LRU replacement * FIFO replacement * Optimal replacement

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 various types of system calls for performing different tasks.
5. What are the four necessary conditions of deadlock prevention?
6. Under what circumstances do page faults occur? Describe the actions taken by the operating system when a page fault occurs.
7. Differentiate between multiprogramming and multiprocessing.
8. What is a semaphore? Explain busy waiting semaphores.
9. Explain pre-emptive and non-pre-emptive schedule.

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अधिन्यास (Assignment) **2015-2016**

Bachelor of Computer Applications (BCA)

Subject : Computer Oriented Numerical Tech. **Subject Code : B.C.A.**

Course Title : Computer Oriented Numerical Tech. **Course Code : B.C.A.-16**

अधिकतम अंक : 30
Maximum Marks: 30

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

Section – A

खण्ड - अ

अधिकतम अंक : 18
Maximum Marks: 18

1. न्यूटन - रैफसन विधि द्वारा समीकरण $x^2 - 5x + 2 = 0$ का पाँच दशमलव स्थानों तक ज्ञात करें ।
Find the roots of the equation $x^2 - 5x + 2 = 0$ correct to five decimal places by Newton Raphson method.

2. आप सिम्पसन के 1/3 तथा 3/8 वें नियम से क्या समझते हैं ? सिम्पसन के 1/3 नियम से $\int \frac{1}{\sqrt{1-x^2}} dx$ का मान ज्ञात करें ।
What do you mean by Simpson's 1/3rd and 3/8th rule. Find the value of $\int \frac{1}{\sqrt{1-x^2}} dx$ by Simpson's 1/3rd rule.

3. a) मैट्रिक्स का इन्वर्स ज्ञात करें । 6
Find the inverse of the matrix $A = \begin{vmatrix} 5 & -2 & 4 \\ -2 & 1 & 1 \\ 4 & 1 & 0 \end{vmatrix}$

b) न्यूटन – रैफसन विधि से Sin x = x/2 को हल करें ।
Solve Sin x = x/2 by Newton-Raphson method.

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. बर्ज - विएटा विधि द्वारा दो पुनरावृत्तियों से $x_0 = 0.2$ के निकट $3x^3 - x^2 + 3x - 1 = 0$ का मूल ज्ञात करें।
Find a root of $3x^3 - x^2 + 3x - 1 = 0$ near $x_0 = 0.2$ in two eterations by Birge-Vieta method.

5. आव्यूह का आइगन मान ज्ञात करें ।

Estimate the eigen Values of matrix $\begin{vmatrix} 5 & 0 & 1 \\ 0 & -2 & 0 \\ 1 & 0 & 5 \end{vmatrix}$

6. रुंगे-कुल्टा विधि की व्याख्या करें ।
Explain Runge-Kulta method.

7. समीकरणों को हल करने की बाइसेक्शन विधि को बताइये।
Explain Bisection method of Solving equations.

8. लैगरान्ज के माध्य मान प्रमेय को लिखकर सिद्ध करें ।
State and prove Lag range's mean Value theorem.

9. आयलर विधि से पाँच चरणों में x=0 के लिए शुरूआती मान समस्या $\frac{dy}{dx} = \frac{y-x}{y+x},\ y=1, x=0$ पर Y का मान ज्ञात करें ।
Find the value of Y for x = 0.1 by Euler's method of the initial value problem in five steps. $\frac{dy}{dx} = \frac{y-x}{y+x},\ y=1,\ for\ \ x=0.$

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अधिन्यास (Assignment) **2015-2016**

Bachelor of Computer Applications (BCA)

Subject : C++ and Object Oriented Programming **Subject Code : B.C.A.**

Course Title : C++ and Object Oriented Programming **Course Code : B.C.A.-17(O)/ B.C.A.-1.9(N)**

अधिकतम अंक	: 30
Maximum Marks:	30

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

Section – A

खण्ड - अ

अधिकतम अंक	: 18
Maximum Marks:	18

1. Explain why Object Oriented Programming approach is better than Structured Programming Approach. 6

2. What is polymorphism? What are different forms of polymorphism? Explain implementation of polymorphism with the help of a C++ program. 6

3. Explain the usage of the following C++ operators with the help of an example program.

   (a) size of operator (b) Logical Operators

   (c) Scope resolution operator. 6

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 friend function? How it is implemented in C++ ? 2
5. What is template? 2
6. What are different types of inheritance? 2
7. What is operator overloading? 2
8. What is an exception? 2
9. Write C++ program to create Matrix class. 2

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अधिन्यास (Assignment) **2015-2016**

Bachelor of Computer Applications (BCA)

Subject : Introduction to Software Engineering **Subject Code : B.C.A.**

Course Title : Introduction to Software Engineering **Course Code : B.C.A.-19(O) B.C.A.-1.17(N)**

अधिकतम अंक	: 30
Maximum Marks:	30

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

Section – A

खण्ड - अ

अधिकतम अंक	: 18
Maximum Marks:	18

1. Write the structure of SRS as per IEEE standards. 6
2. Explain any two characteristics of a good function oriented design. 6
3. Explain water Fall Model with the help of a diagram. 6

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 'Black Box Testing"? 2
5. What is "White Box Testing"? 2
6. Define the term "Software Project Management". 2
7. What do you mean by Software Configuration Management? 2
8. What is coupling? 2
9. Discuss the role of PERT Chart in software development. 2

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अधिन्यास (Assignment) **2015-2016**

Bachelor of Computer Applications (BCA)

Subject : Internet Administration **Subject Code : B.C.A.**

Course Title : Internet Administration **Course Code : B.C.A.-20**

अधिकतम अंक	: 30
Maximum Marks:	30

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

Section – A

खण्ड - अ

अधिकतम अंक	: 18
Maximum Marks:	18

1. What are Intranets? Explain the categories of the Intranets on the basis of their functionality and then on the basis of their application and architecture. 6

2. Explain the need of IP Addresses? Explain the various components of an IP Address. Also describe the four classes of IP Addresses with the help of a diagram. 6

3. Define and briefly describe the following:

   (a) SMTP (b) FTP

   (c) HTTP 6

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 database connectivity? 2
5. What is TCP? 2
6. Describe databases as Intranet Management Tools. 2
7. What is an Apache Tomcat Server? 2
8. What is an Extranet? 2
9. What are the different protocols available in Wireless Application Protocol (WAP) stack? Explain the purpose of each protocol. 2