

उत्तर प्रदेश राजर्षि टण्डन मुक्त विश्वविद्यालय, इलाहाबाद

कार्यक्रम अधिन्यास 2017-18

PGDCA

कोर्स कोड : Course Code: PGDCA-01	कोर्स शीर्षक:— (Course Title) Discrete Mathematics	अधिकतम अंक : 30 Maximum Marks : 30
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खण्ड अ

Section-A

अधिकतम अंक : 18

Maximum Marks : 18

नोट— (Instructions): Section A consists of long answer questions. Answer should be in 800 to 1000 words.

Attempt any three questions from this section.

प्रश्न संख्या 1 से 9 तक दीर्घ उत्तरीय प्रश्न हैं जिनका उत्तर 800 से 1000 शब्दों में लिखना है। इस खंड से किसी भी तीन प्रश्नों का उत्तर दें।

- Answer the following:
 - Out of 7 consonants and 4 vowels, how many words of 3 consonants and 2 vowels can be formed?
 - In a group of 6 boys and 4 girls, four children are to be selected. In how many different ways can they be selected such that at least one boy should be there?
- Rewrite the following arguments using qualifiers, variables and predicate symbols:
 - All birds can fly
 - Some men are genius.
 - Some numbers are not rational
 - There is a student who likes mathematics but not geography.
- Explain the following terms with suitable examples –
 - Conjunction
 - Disjunction
 - Contrapositive
- Construct truth tables for
 - $[(P \Rightarrow Q) \wedge (Q \Rightarrow R)] \Rightarrow (P \Rightarrow R)$
 - $\sim (P \Rightarrow Q) \vee [(-P) \wedge Q] \vee Q$
- How many 3 digit numbers can be formed from the digits 2, 3, 5, 6, 7 and 9 which are divisible by 5 and none of the digits is repeated?
- Show that the relation $(x,y) R (a,b) \iff x^2 + y^2 = a^2 + b^2$ is an equivalence relation on the plane. Also describe the equivalence classes.
- Find the PDNF and PCNF of $[(p \wedge q) \vee (\neg p \wedge r) \vee (q \wedge r)]$.
- Let $P(x)$ be the statement “x can speak Russian” and let $Q(x)$ be the statement “x knows the computer language C++.” Express each of these sentences in terms of $P(x)$, $Q(x)$, quantifiers, and logical connectives. The domain for quantifiers consists of all students at your school.
 - There is a student at your school who can speak Russian and who knows C++.
 - There is a student at your school who can speak Russian but who doesn't know C++.
 - Every student at your school either can speak Russian or knows C++.
 - No student at your school can speak Russian or knows C++.
- Determine whether the relation R on the set of all Web pages is reflexive, symmetric, antisymmetric, and/or transitive, where $(a, b) \in R$ if and only if
 - everyone who has visited Web page a has also visited Web page b.
 - There are no common links found on both Web page a and Web page b.
 - There is at least one common link on Web page a and Web page b.
 - There is a Web page that includes links to both Web page a and Web page b.

Section –B

Maximum Mark : 12

नोट— (Instructions): Section B consists of short answer questions. Answer should be in 200 to 300 words.

Attempt any four questions from this section.

खण्ड ब में 01 से 12 तक लघु उत्तरीय प्रश्न हैं जिनका उत्तर 200 से 300 शब्दों में लिखना है। इस खण्ड से किसी चार प्रश्नों के उत्तर दें।

1. Find using Karnaugh maps a minimal form for the boolean function.
 $f(x, y, z) = xyz + xyz' + x'yz' + x'y'z'$.
2. In any boolean algebra show that
 $(a + b)(b + c)(c + a) = ab + bc + ca$.
3. Define with examples of NAND and NOR gates.
4. Briefly explain the Pigeonhole principle.
5. Define tautologies and contradictions with examples.
6. Construct the truth table for $P \vee (q \wedge r) \Leftrightarrow q \wedge (p \vee r)$.
7. What is Lattice? Explain the properties of Lattice.
8. A bag contains 2 white balls, 3 black balls and 4 red balls. In how many ways can 3 balls be drawn from the bag, if at least one black ball is to be included in the draw?
9. Let R and S be two relations on a set A. Then if R and S are reflexive then prove that $R \cap S$ is reflexive.
10. Define Cartesian product of two sets and prove that
 $A \times (B \cap C) = (A \times B) \cap (A \times C)$.
11. Prove that $[(p \vee q) \wedge (p \rightarrow r) \wedge (q \rightarrow r)] \rightarrow r$ is a tautology.
12. How many 3 digit numbers can be formed from the digits 2, 3, 5, 6, 7 and 9 which are divisible by 5 and none of the digits is repeated?

उत्तर प्रदेश राजर्षि टण्डन मुक्त विश्वविद्यालय, इलाहाबाद

कार्यक्रम अधिन्यास 2017-18

PGDCA

कोर्सकोड : Course Code: PGDCA-02	कोर्स शीर्षक :- (Course Title) Programming through 'C' and Data Structures	अधिकतमअंक : 30 Maximum Marks : 30
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खण्ड अ

Section-A

अधिकतम अंक : 18

Maximum Marks : 18

नोट- (Instructions): Section A consists of long answer questions. Answer should be in 800 to 1000 words.

Attempt any three questions from this section.

प्रश्न संख्या 1 से 9 तक दीर्घ उत्तरीय प्रश्न है जिनका उत्तर 800 से 1000 शब्दों में लिखना है। इस खंड से किसी भी तीन प्रश्नों का उत्तर दें।

1. What is a stack? What operations are associated with a stack?
2. (a) Discuss about arithmetic operators and relational operators.
(b) Differentiate between break and continue statements in C language with example.
3. Define AVL tree. Is the statement 'Every Binary Tree is an AVL tree' correct? Justify your answer.
4. (a) A company insure its drivers in the following case.
- If the drivers is married.
- If the drivers is unmarried, male and above 30 year of age.
If the driver is unmarried female and above 25 year of age.
In all other case, the driver is not insured. Write a C program without using logical operator to determine whether the driver is insured or not.
(b) Differentiate between the nested.... if and the switch statement in C language with suitable example.
5. Sort the following list of numbers using Quick Sort in descending order:
1, 3, 2, 5, 4, 6, 12, 10, Show all the passes.
6. What are various data types used in C? Write its range and format also?
7. 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.
8. 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.
9. Discuss the applications of searching techniques. Write a program in C to implement a linear search and binary search.

खण्ड ब

अधिकतम अंक : 12

Section –B

Maximum Mark : 12

नोट— (Instructions): Section B consists of short answer questions. Answer should be in 200 to 300 words. Attempt any four questions from this section.

खण्ड ब में 01 से 12 तक लघु उत्तरीय प्रश्न हैं जिनका उत्तर 200 से 300 शब्दों में लिखना है। इस खण्ड से किसी चार प्रश्नों के उत्तर दें।

1. Write any five advantages of Pointers over Arrays.
2. Define 'Binary Tree'. How does a Binary Tree differ from a Tree?
3. Define 'Graph'. When can it be said that two vertices of a Graph are connected?
4. Write an algorithm for the addition of two matrices.
5. What is the difference between call by value and call by reference parameter passing techniques.
6. Write a function int power (int x, int n) to return x^n
7. Write a function to return the sum of N number.
8. Write a program to find maximum and minimum elements of an array of size N.
9. What do you mean by storage classes in C language. Write the difference between static and automatic storage class.
10. Write a program in C language to generate the given series upto terms less than 200.
1 - 4 + 9 - 16 + 25
11. Differentiate between write and do-while loop with example.
12. Write the output/error of the following code with explanation.

```
Main ()
{
    static int var = 5;
    printf ("%d", var);
    if (var)
        main ();
}
```

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PGDCA

कोर्सकोड : Course Code: PGDCA-03	कोर्स शीर्षक :- (Course Title) Computer Organization And Assembly Language Programming	अधिकतम अंक : 30 Maximum Marks : 30
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खण्ड अ

Section-A

अधिकतम अंक : 18

Maximum Marks : 18

नोट- (Instructions): Section A consists of long answer questions. Answer should be in 800 to 1000 words.

Attempt any three questions from this section.

प्रश्न संख्या 1 से 9 तक दीर्घ उत्तरीय प्रश्न है जिनका उत्तर 800 से 1000 शब्दों में लिखना है। इस खंड से किसी भी तीन प्रश्नों का उत्तर दें।

1. Discuss and Differentiate Hardware and Micro-programmed control unit with their advantages and disadvantages.
2. Explain the following addressing modes with an example and suggest a use for those addressing modes:
i. Register Indirect ii. Auto increment iii. Indirect address iv. Base address
v. Indexed address
3. Design a Synchronous Modulus-Six Counter Using SR Flip-Flop The modulus six counter will count 0, 2, 3, 6, 5, and 1.
4. What do you mean by Flip-Flop? Discuss the functions and circuits diagram of different type of flip flop?
5. What is Interrupt? Explain the types of Interrupts.
6. Draw the connections between memory module and processor and explain how data transfer takes place between them.
7. What is Register? Draw and explain any one shift register in detail.
8. What is the difference between combinational and sequential circuit? Explain with appropriate example.
9. What is input-output interface? Draw and explain block diagram of input-output interface.

खण्ड ब

Section -B

अधिकतम अंक : 12

Maximum Mark : 12

नोट- (Instructions): Section B consists of short answer questions. Answer should be in 200 to

300 words. Attempt any four questions from this section.

खण्ड ब में 01 से 12 तक लघु उत्तरीय प्रश्न है जिनका उत्तर 200 से 300 शब्दों में लिखना है। इस खण्ड से किसी चार प्रश्नों के उत्तर दें।

- 1 Distinguish between horizontal and vertical microprogram control unit.
- 2 What is instruction cycle? When will be any interrupt processed during the instruction cycle?
- 3 Briefly describe what are Special purpose registers and General purpose registers in CPU.
- 4 Write an assembly language program to find factorial of 10 using loop.
- 5 What is DMA? Explain DMA transfer modes in detail.
- 6 Differentiate between RISC and CISC.
- 7 Explain the key differences between Compiler and Interpreter.
- 8 Write a assembly language program to compare values of the three variables and print them in descending order as: Largest = %d, Medium = %d, Smallest = %d.
- 9 What is the difference between isolated I/O and memory mapped I/O?
- 10 What do you mean by memory hierarchy? Why registers are present in CPU?
- 11 Explain the differences among microoperation and microprogram?
- 12 Write down the micro operations involves in fetch cycle.

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PGDCA

कोर्स कोड : Course Code: PGDCA-05	कोर्स शीर्षक :- (Course Title) Object oriented programming C++	अधिकतम अंक : 30 Maximum Marks : 30
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खण्ड अ

अधिकतम अंक : 18

Section-A

Maximum Marks : 18

नोट— (Instructions): Section A consists of long answer questions. Answer should be in

800 to 1000 words. Attempt any three questions from this section.

प्रश्न संख्या 1 से 9 तक दीर्घ उत्तरीय प्रश्न है जिनका उत्तर 800 से 1000 शब्दों में लिखना है।

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.
4. Highlight the difference between pure virtual functions and virtual function.
5. Write a program using a try block to detect and throw an exception if the condition 'divide by zero' occurs.
6. Explain why Object Oriented Programming approach is better than Structured Programming Approach.
7. What is polymorphism? What are different forms of polymorphism? Explain implementation of polymorphism with the help of a C++ program.
8. Explain the usage of the following C++ operators with the help of an example program.
(a) sizeof operator (b) Logical Operators (c) Scope resolution operator.
9. Declare an abstract class '*Shape*' with methods '*area*' & '*volume*'. Refine this super class to subclasses like '*cone*', '*cylinder*' & '*Rectangular Box*'. Then, Calculate area and volume for the subclasses.

खण्ड ब

अधिकतम अंक : 12

Section -B

Maximum Mark : 12

नोट— (Instructions): Section B consists of short answer questions. Answer should be in 200 to

300 words. Attempt any four questions from this section.

खण्ड ब में 01 से 12 तक लघु उत्तरीय प्रश्न है जिनका उत्तर 200 से 300 शब्दों में लिखना है। इस खण्ड से किसी चार प्रश्नों के उत्तर दें।

1. What do you mean by 'this' function? What are the applications of 'this' pointer?
2. What are pure virtual functions?
3. What do you mean by container classes?
4. What is a Use case? Also explain with example.
5. What is reusability? Which things can be reused?
6. What is friend function? How it is implemented in C++ ?
7. What is template? Explain with suitable example.
8. What are different types of inheritance?
9. What is operator overloading?
10. Write C++ program to create Matrix class.
11. List the features of Object oriented programming.
12. What are input and output streams. Explain.

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PGDCA

कोर्स कोड : Course Code: PGDCA-06	कोर्स शीर्षक:- (Course Title) Data Base Management System (DBMS)	अधिकतम अंक : 30 Maximum Marks : 30
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खण्ड अ

Section-A

अधिकतम अंक : 18

Maximum Marks: 18

नोट—(Instructions): Section A consists of long answer questions. Answer should be in 800 to 1000 words. Attempt any three questions from this section.

प्रश्न संख्या 1 से 9 तक दीर्घ उत्तरीय प्रश्न है जिनका उत्तर 800 से 1000 शब्दों में लिखना है।

1. Suppose you are given the following requirements for a simple database for the National Hockey League (NHL):
The NHL has many teams, each team has a name, a city, a coach, a captain, and a set of players, each player belongs to only one team, each player has a name, a position (such as left wing or goalie), a skill level, and a set of injury records, a team captain is also a player, a game is played between two teams (referred to as host_team and guest_team). (i) Draw an E-R diagram.
(ii) Transform the E-R diagram to a Relational Schema.
2. How distributed database different from client server database? Discuss them with their advantages and disadvantages.
3. Explain different type of locking protocols for concurrency control. How does you ensure both conflict serializability and freedom from deadlock?
4. What is three-tier client/server architectures? Also differentiate between logical data independence independence. And physical data.
5. What is entity and attribute? Give some examples of entities and attributes in a manufacturing environment. Why are relationships between entities important?
6. What do you mean by data redundancy? What is the difference between controlled and uncontrolled redundancy? What is data independence?
7. Explain the purpose of checkpoints mechanism. How often should checkpoints be performed? How does the frequency of checkpoints affect:
 - a) System performance when no failure occurs?
 - b) The time it takes to recover from a system crash?
 - c) The time it takes to recover from a disk failure?
8. Consider the two sets F and G with their FDs as below :
F: $A \rightarrow C, AC \rightarrow D, E \rightarrow AD, E \rightarrow H$
G: $A \rightarrow CD, E \rightarrow AH$
Check whether two sets are equivalent or not.
9. Consider the following requirements of a staff management system of an organization :
 - a) The basic information that needs to be stored about the staff includes staff-id, name, address, date of birth, date of employment, post held.
 - b) It keeps dependent information of employees. An employee can have many dependents.
 - c) Pay details of the employees are also kept.
 - d) It also keeps track of the various departments and employees of those departments.Draw the E-R diagram for the organization. Make suitable assumptions, if any.

खण्ड ब

अधिकतम अंक : 12

Section –B

Maximum Mark : 12

नोट— (Instructions): Section B consists of short answer questions. Answer should be in 200 to 300 words. Attempt any four questions from this section.

खण्ड ब में 01 से 12 तक लघु उत्तरीय प्रश्न हैं जिनका उत्तर 200 से 300 शब्दों में लिखना है। इस खण्ड से किसी चार प्रश्नों के उत्तर दें।

1. How does a deadlock occur in a computer system? How can you prevent deadlock happening in DBMS?
2. $R(ABCDEF) F = \{A \rightarrow B, B \rightarrow C, C \rightarrow D, E \rightarrow F\}$ decomposed into $D = R1(AB), R2(BCD), R3(DEF)$. Find whether D is Lossless or Lossy?
3. What is index file? What are the differences between B+ tree and B tree index file?
4. What is data? What do you mean by information? What are the differences between data and information?
5. Who is a DBA? What are the responsibilities of a DBA?
6. What is a transaction? Which are the properties of a transaction and explain each.
7. What is a database trigger? Which are the different kinds of triggers?
8. You are given the following relational schema:

Person(PersonID, Name, Sex, CityOfBirth)

Parent(ParentID, ChildID)

ParentID and ChildID are foreign keys referring to Person.PersonID.

Write the following queries in SQL:

Find the names of all people who were born in the same city as their father.

9. When is it preferable to use a dense index rather than a sparse index? Explain your answer.
10. Discuss on the various ways in which we can arrive at a good database design. Discuss the ACID properties of a transaction. Give relevant example.
11. Discuss two phase locking protocol. Give relevant example.
12. Discuss the advantages of DBMS over traditional file processing system.

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PGDCA

कोर्स कोड : Course Code: PGDCA-07A	कोर्स शीर्षक :- (Course Title) Computer Fundamental	अधिकतम अंक : 30 Maximum Marks : 30
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खण्ड अ

Section-A

अधिकतम अंक : 18

Maximum Marks : 18

नोट— (Instructions): Section A consists of long answer questions. Answer should be in 800 to 1000 words. Attempt any three questions from this section.

प्रश्न संख्या 1 से 9 तक दीर्घ उत्तरीय प्रश्न है जिनका उत्तर 800 से 1000 शब्दों में लिखना है। इस खंड से किसी भी तीन प्रश्नों का उत्तर दें।

1. Explain different types of Memories.
2. With the help of a diagram explain the components of a computer system.
3. Explain the difference between flow chart and pseudo-code with the help of an example.
4. Explain the working of a laser printer.
5. Explain any three types of ROM.
6. Explain Virtual memory.
7. Explain working of a magnetic disk.
8. What do you mean by flip flop? Describe its working with example.
9. Describe any three computer input units.

खण्ड ब

Section -B

अधिकतम अंक : 12

Maximum Mark : 12

नोट— (Instructions): Section B consists of short answer questions. Answer should be in 200 to 300 words. Attempt any four questions from this section.

खण्ड ब में 01 से 12 तक लघु उत्तरीय प्रश्न है जिनका उत्तर 200 से 300 शब्दों में लिखना है। इस खण्ड से किसी चार प्रश्नों के उत्तर दें।

1. What is a light pen? Briefly explain its working.
2. Differentiate between seek time and latency.
3. What is Data Transfer rate? Explain.
4. Explain signed 1's complement representation of integers with the help of an example.
5. Discuss some popular character codes used for representing characters in computer.
6. How are floating point numbers represented in computer? Explain.
7. List the characteristics of computer.
8. Discuss the units of memory.
9. Find (1001101 - 10101001) using 1's complement?
10. Find 2's complement of the following
1001 b. 0101010
11. Explain how to convert decimal representation of an integer into binary.
12. Briefly discuss error detection codes.

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कार्यक्रम अधिन्यास 2017-18

PGDCA

कोर्स कोड : Course Code: PGDCA-E1	कोर्स शीर्षक :- (Course Title) <i>Computer Architecture</i>	अधिकतम अंक : 30 Maximum Marks : 30
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खण्ड अ

Section-A

अधिकतम अंक : 18

Maximum Marks : 18

नोट— (Instructions): Section A consists of long answer questions. Answer should be in 800 to 1000 words. Attempt any three questions from this section.

प्रश्न संख्या 1 से 9 तक दीर्घ उत्तरीय प्रश्न है जिनका उत्तर 800 से 1000 शब्दों में लिखना है। इस खंड से किसी भी तीन प्रश्नों का उत्तर दें।

1. What are the similarities and distinctions between multiprocessor and multicomputer system? Explain the classification of multiprocessor system.
2. Explain the Pipeline scheduling in detail.
3. Discuss the utility of RISC and CISC Architecture by comparing their various features.
4. Explain the interrupt driven mode of data transfer and the DMA driven data transfer, elaborating on how they are accomplished and their relative merits and demerits.
5. Explain the importance of different addressing modes in computer architecture with suitable example. What are the different addressing modes?
6. I) What do you mean by instruction cycle and interrupt cycle?
II) Distinguish between hardwired and micro-programmed control unit.
7. Define the following:
a. Micro operation and b. Micro instruction
8. Explain the sequence that takes place when interrupt occurs.
9. A computer uses RAM chips of 1024 * 1 capacity. How many chips are needed to provide a memory capacity of 16 KB? Explain in words how the chips are to be connected to the address bus.

खण्ड ब

Section -B

अधिकतम अंक : 12

Maximum Mark : 12

नोट— (Instructions): Section B consists of short answer questions. Answer should be in 200 to 300 words. Attempt any four questions from this section.

खण्ड ब में 01 से 12 तक लघु उत्तरीय प्रश्न है जिनका उत्तर 200 से 300 शब्दों में लिखना है। इस खण्ड से किसी चार प्रश्नों के उत्तर दें।

1. Describe the role of system software to improve the performance of a computer.
2. What are the special registers in a typical computer? Explain their purposes in detail.
3. Discuss hit-rate and miss penalty
4. i) Distinguish between auto increment and auto decrement addressing mode
ii) Under what situations the micro program counter is not incremented after a new instruction is fetched from micro program memory?
5. What is virtual memory? What are its benefits?
6. How many memory chips are needed to construct 2 M x 16 memory system using 512 K x 8 static memory chips?
7. Explain How interrupt requests from multiple devices can be handled?
8. Explain the difference between Horizontal and Vertical Microinstructions
9. An address space is specified by 24 bits and the corresponding memory space by 16 bits:
How many words are in the
(a) virtual memory (b) main memory
10. Specify the different I/O transfer mechanisms available.
11. What is DDR SDRAM? What is TLB?
12. What is the role of cache in pipelining? What would be the effect, if we increase the number of pipelining stages?

उत्तर प्रदेश राजर्षि टण्डन मुक्त विश्वविद्यालय, इलाहाबाद

कार्यक्रम अधिन्यास सत्र 2017-18

PGDCA

कोर्स कोड : Course Code: PGDCA-E2	कोर्स शीर्षक :- (Course Title) <i>Microprocessor and its Applications</i>	अधिकतम अंक : 30 Maximum Marks : 30
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खण्ड अ

Section-A

अधिकतम अंक : 18

Maximum Marks : 18

नोट— (Instructions): Section A consists of long answer questions. Answer should be in 800 to 1000 words. Attempt any three questions from this section.

प्रश्न संख्या 1 से 9 तक दीर्घ उत्तरीय प्रश्न हैं जिनका उत्तर 800 से 1000 शब्दों में लिखना है। इस खंड से किसी भी तीन प्रश्नों का उत्तर दें।

1. List the components of computers and explain each in brief. What is the difference between a microprocessor and a CPU?
2. Discuss the features of 8085 interrupts. Also explain the SIM and RIM formats.
3. Explain the architecture of 8086 in detail with neat block diagram.
4. Explain I/O addressing scheme used in 8086 with neat block diagram.
5. With block diagram describe the working of a DMA controller.
6. Explain the layout and operation of the PCI bus.
7. What is serial data transfer? Explain with neat diagram.
8. Assume that the accumulator contains data bytes 88 and instruction MOV C, A 4FH is fetched. List the steps decoding and executing the instruction.
9. Explain 8085 Stack in detail.

खण्ड ब

Section -B

अधिकतम अंक : 12

Maximum Mark : 12

नोट— (Instructions): Section B consists of short answer questions. Answer should be in 200 to

300 words. Attempt any four questions from this section.

खण्ड ब में 01 से 12 तक लघु उत्तरीय प्रश्न हैं जिनका उत्तर 200 से 300 शब्दों में लिखना है। इस खण्ड से किसी चार प्रश्नों के उत्तर दें।

1. What do you understand by DMA?
2. What is the function of SI and DI Registers?
3. What do you mean by Conditional Flag?
4. What do you understand by Addressing mode?
5. What are the advantages of segmentation?
6. List the feature of 8086 Microprocessor?
7. What are the advantages of segmented memory scheme?
8. What is the use of ALE?
9. List the operating mode of 8259.
10. What are the flags in machine status word?
11. Explain the following.
 - a. Data Bus.
 - b. Address Bus.
12. What are the advantages of microprocessor based system?

उत्तर प्रदेश राजर्षि टण्डन मुक्त विश्वविद्यालय, इलाहाबाद

कार्यक्रम अधिन्यास सत्र 2017-18

PGDCA

कोर्स कोड : Course Code: PGDCA-E3	कोर्स शीर्षक :- (Course Title) <i>Data Warehouse and Mining</i>	अधिकतम अंक : 30 Maximum Marks : 30
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खण्ड अ

अधिकतम अंक : 18

Section-A

Maximum Marks : 18

नोट— (Instructions): Section A consists of long answer questions. Answer should be in 800 to 1000 words. Attempt any three questions from this section.

प्रश्न संख्या 1 से 9 तक दीर्घ उत्तरीय प्रश्न है जिनका उत्तर 800 से 1000 शब्दों में लिखना है। इस खंड से किसी भी तीन प्रश्नों का उत्तर दें।

1. What is data mining (D.M.)? Define and describe relationship and pattern detected in data mining. What is the scope of data mining?
2. Explain structure of the data warehouse? Discuss in detail all the steps involve in making a data warehouse.
3. Explain OLTP and OLAP and also discuss difference between them?
4. Explain basic data mining tasks with an example.
5. Give details on data mining versus knowledge discovery in databases.
6. Discuss data mining issues and data mining metrics.
7. Define the terms: **confidence, cleaning, consequent, cross validation**
8. Discuss issues to consider during data integration.
9. Explain about concept hierarchy generation for categorical data.

खण्ड ब

अधिकतम अंक : 12

Section -B

Maximum Mark : 12

नोट— (Instructions): Section B consists of short answer questions. Answer should be in 200 to 300 words. Attempt any four questions from this section.

खण्ड ब में 01 से 12 तक लघु उत्तरीय प्रश्न है जिनका उत्तर 200 से 300 शब्दों में लिखना है। इस खण्ड से किसी चार प्रश्नों के उत्तर दें।

1. What are the requirements of cluster analysis?
2. What type of processing takes place in a data warehouse?
3. What are the various types of metadata? Explain in detail?
4. What do you mean by knowledge discovery process?
5. What is Classification?
6. What do you mean by data cleaning?
7. Explain various data reduction techniques.
8. Briefly discuss the forms of Data preprocessing with neat diagram.
9. Draw and explain the architecture of typical data mining system.
10. Explain data mining as a step in the process of knowledge discovery.
11. Give an overview of applications of data mining.
12. What is text mining? Describe about basic measures for text retrieval.

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कार्यक्रम अधिन्यास सत्र 2017-18

PGDCA

कोर्सकोड : Course Code: PGDCA-E4	कोर्स शीर्षक:- (Course Title) System Analysis and Design	अधिकतमअंक : 30 Maximum Marks : 30
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खण्ड अ

अधिकतम अंक : 18

Section-A

Maximum Marks : 18

नोट— (Instructions): Section A consists of long answer questions. Answer should be in 800 to 1000 words. Attempt any three questions from this section.

प्रश्न संख्या 1 से 9 तक दीर्घ उत्तरीय प्रश्न है जिनका उत्तर 800 से 1000 शब्दों में लिखना है। इस खंड से किसी भी तीन प्रश्नों का उत्तर दें।

1. What is Risk Management and what will risk management do for any business? How does software risk management related to Software process improvement?
2. Define Software Development life cycle (SDLC). What is spiral model? List the advantage and disadvantage of waterfall model.
3. What is Software Testing? What are the various characteristics of a good testable software?
4. Explain prototype model of software development. Is prototype model a suitable
5. Model for courier company management system? Justify your answer.
6. What is function point analysis? List four features of it.
7. Explain the following:
a) Project b) Project scheduling c) Critical Path d) Milestones e) Checkpoints f) Project review.
8. What is strategic planning? Relate strategic planning to management control and operational control.
9. With respect to purchasing and inventory control systems explain any three of the following:
a) Why do retail outlets carry inventory b) Inventory carrying cost. c) Procurement lead time d) Bill of material.

खण्ड ब

अधिकतम अंक : 12

Section -B

Maximum Mark : 12

नोट— (Instructions): Section B consists of short answer questions. Answer should be in 200 to 300 words. Attempt any four questions from this section.

खण्ड ब में 01 से 12 तक लघु उत्तरीय प्रश्न है जिनका उत्तर 200 से 300 शब्दों में लिखना है। इस खण्ड से किसी चार प्रश्नों के उत्तर दें।

1. What are the differences between Black Box Testing' and 'White Box Testing'?
2. What do you mean by Software Configuration Management?
3. Discuss the role of PERT Chart in software development.
4. What is coupling and Cohesion? What are the different type of Cohesion?
5. Differentiate between decision table and decision tree.
6. What are the attributes of good analyst?
7. Explain the system development life cycle.
8. Distinguish between hierarchical structure and network structure.
9. Define Bench Mark?
10. What is brain storming?
11. What is system analysis? Describe the importance of system analysis in software System development.
12. List any five responsibilities of a System Analyst.