

# **Post Graduate Diploma in Computer Application (PGDCA) Semester 1**

## **ASSIGNMENT BOOKLET**

Assignments for subjects PDCA 101, PDCA 102, PDCA 103,  
PDCA 104, PDCA 105  
(for Session January 2015)

Directorate of Distance Education  
Punjab Technical University, Jalandhar

## **Dear Student**

The assignment is the important component of our evaluation system and your internal assessment will be based on the assignments. The objective of such assignments is to enable you to comprehend the subject knowledge. The assignments are purposely designed on the lines of examination pattern so as to prepare you for the final examinations. In the entire semester, you will have to attempt **TWO** assignments. Assignment 1 will cover the topics from Unit 1 and Unit 2. Assignment 2 will cover topics from Unit 3 and Unit 4. All assignments are tutor marked assignments and carry 50 marks each. In internal assessment assignment 1 and assignment 2 shall carry the weightage of 20 marks respectively.

As the assignment is integral part of your internal assessment, it is compulsory to attempt the assignment. Therefore, plan well for the attempt of your assignments. Before attempting the assignment, please read **IMPORTANT INSTRUCTIONS** and all questions carefully and then arrange your answers in a rational sequence.

Dear student, please note following points regarding attempt of assignments:

- Assignments should be submitted in your own handwriting.
- Use A4 size plain papers for assignments.
- Carefully follow the instructions and ensure that you have attempted all questions.
- Answers should be correct and neatly written.
- Submit assignment of each subject in a separate file.
- Each assignment should consist of a title page containing the details of the student and subject (Template of title page is attached as **ANNEXURE**. Take print out of that annexure on A4 size page and fill it in your handwriting for each subject.)

### **Instructions for students regarding Submission of Assignments:**

- Before submitting the assignment, please retain one copy of your assignment with you and take receipt of the assignment from your study centre.
- Last date of submitting 1<sup>st</sup> Assignment of all subjects is 10<sup>th</sup> March, 2015.
- Please tag a self addressed A4 size envelope with assignments of all subjects separately.

**Work Hard and Perform Well!**

# COMPUTER FUNDAMENTALS

## PDCA-101

### IMPORTANT INSTRUCTIONS:

1. SECTION-A All questions are compulsory and each question carries 2 marks.
2. SECTION-B All questions are compulsory and each question carries 10 marks.

### SECTION: A

**All questions are compulsory and each question carries 2 marks.**

1.
  - a. Give an example of impact and non-impact printer. Which one is faster and less costlier?
  - b. Differentiate between high-level and machine language.
  - c. What is a cache memory and is it faster than the RAM or not?
  - d. How can we use a mouse as an input device?
  - e. List various components of a computer system.
  - f. Which was the first electronic computer system?
  - g. Covert decimal number 90 into its equivalent binary number.
  - h. Covert binary number 101011001 into its equivalent octal number?
  - i. Multiply binary numbers 101 and 101?
  - j. What is the difference between integer and fraction?

### SECTION: B

**All questions are compulsory and each question carries 10 marks.**

2. What we mean by a compiler? explain various stages of compilation in detail.
3. Explain all generations of computer systems in great detail. According to you what will be the next generation of computers?
4. Explain the working of different types of printers.

## **PROGRAMMING IN C++**

### **PDCA-102**

#### **IMPORTANT INSTRUCTIONS:**

1. SECTION-A All questions are compulsory and each question carries 2 marks.
2. SECTION-B All questions are compulsory and each question carries 10 marks.

#### **SECTION: A**

**All questions are compulsory and each question carries 2 marks.**

1.
  - a. What is the difference between array and structure data types?
  - b. Which library function is used to check if the two strings are same or not?
  - c. What is the difference between union and structure data types in reference to memory allocation?
  - d. Define class and its objects.
  - e. Explain function definition of a user-defined function.
  - f. What we mean by forward jump using goto statement.
  - g. What is the need of break statement in cases written inside the switch statement?
  - h. Explain the concept of encapsulation.
  - i. What is the use of modulus operator?
  - j. When should you prefer the use of while loop over for for loop?

#### **SECTION: B**

**All questions are compulsory and each question carries 10 marks.**

2. How can we create 2-D arrays? Write a program to find the transpose of an 2-D array ( i.e. to convert its rows into columns and vice-versa ).
3. Explain in detail the use of break and continue statement in loop structures. Also give example for both (other than the examples given in SLM).
4. Explain the concept of C++ access modifiers in detail. Also what is the use of scope resolution operator in C++. Write the structure of a class for managing bank account (take your own set of data members and member functions).

# COMPUTER OPERATING SYSTEM

## PDCA-103

### IMPORTANT INSTRUCTIONS:

1. SECTION-A All questions are compulsory and each question carries 2 marks.
2. SECTION-B All questions are compulsory and each question carries 10 marks.

### SECTION: A

**All questions are compulsory and each question carries 2 marks.**

1.
  - a. Define process?
  - b. Explain the concept of PCB and how many PCB's are there in the system at one time?
  - c. What is the difference between shortest-job first and shortest remaining time first scheduling algorithms?
  - d. What we mean kernel of operating system?
  - e. What is an interrupt and how many types of interrupts are there?
  - f. Define critical section?
  - g. Explain the four necessary conditions for a deadlock to occur.
  - h. What is the difference between single absolute and single relocatable partition?
  - i. What is the difference between internal and external fragmentation?
  - j. Define various partition selection algorithms in case of multiple variable partitions scheme?

### SECTION: B

**All questions are compulsory and each question carries 10 marks.**

2. Consider the following

process	arrival time	burst time
p1	3	6
p2	1	10
p3	2	8
p4	0	5

Create gantt chart for first come first serve, shortest remaining time first and round robin (3) scheduling algorithms.

3. What we mean RAG? How can we detect if there exists a deadlock using RAG and how can we avoid deadlock using RAG?

4. Explain the Concept of paging and segmentation in detail.

## **RDBMS**

### **PDCA-104**

#### **IMPORTANT INSTRUCTIONS:**

1. SECTION-A All questions are compulsory and each question carries 2 marks.
2. SECTION-B All questions are compulsory and each question carries 10 marks.

#### **SECTION: A**

**All questions are compulsory and each question carries 2 marks.**

1.
  - a. Define primary key and foreign key.
  - b. Explain functional dependency.
  - c. What we mean by third normal form?
  - d. What is the use of ER model?
  - e. What we mean by data constraints?
  - f. What is a super key?
  - g. Explain in detail create command.
  - h. Explain various DML commands.
  - i. Create a table and then use insert command to add data to it using insert command.
  - j. What is the need of normalization?

#### **SECTION: B**

**All questions are compulsory and each question carries 10 marks.**

2. Take example of any table which is completely un-normalized. convert that table to 1st, 2nd, third and BCNF. Also define what is 1st, 2nd, 3rd and BCNF normal forms.
3. Explain in detail about ER model and how it can used to show various relations between the entities and attributes.
4. Explain the data base system architecture in detail. Also define various types of keys.

## COMMUNICATION SKILLS

### PDCA-105

#### IMPORTANT INSTRUCTIONS:

1. SECTION-A All questions are compulsory and each question carries 2 marks.
2. SECTION-B All questions are compulsory and each question carries 10 marks.

#### SECTION: A

**All questions are compulsory and each question carries 2 marks.**

1.
  - a. List different forms of communication?
  - b. Mention any two advantages of verbal communication.
  - c. List various linguistic barriers to communication.
  - d. Differentiate between formal and informal communication.
  - e. List various linguistic barriers to communication.
  - f. Discuss briefly the transactional communication.
  - g. Write short notes the following:  
(a) E-mail (b) Feedback
  - h. What are the various types of formal communication network?
  - i. Discuss SQ3R model of reading.
  - j. Distinguish between an order letter and inquiry letter.

#### SECTION: B

**All questions are compulsory and each question carries 10 marks.**

2. (a) Assume that as the head of the department, you have received a request for writing a recommendation letter for a former student of yours who intends to pursue his post graduate degree from a university in America. Your recommendation letter should highlight the student's strengths, achievements and suitability for the course he intends to pursue.  
  
(b) Write an essay in about 150 words on any of the following topics:
  - (i) Generation gap
  - (ii) Global warming
  - (iii) Are elections free and fair in India?
3. Discuss in detail various barriers to communication. Also suggest the ways to tackle these barriers.

4. Read the passage given below and answer the questions that follow:

The worst days of any summer are the rainy ones. We spend all year looking forward to nice weather and long, hot days. All of winter, with its dreary gray days and bitter cold, we dream of those endless days at the beach, laying on the sand and soaking in the bright and burning sun. And then, summer comes, and it rains.

As a child, I would wake up to rainy summer days and come close to crying. It wasn't fair. We suffered through months of school and miserable weather for those scant ten weeks of freedom and balmy weather. Any day that I could not spend at the beach or playing ball with my friends seemed like a punishment for something I didn't even do. On those rainy summer days, I had nothing fun to do and could only sit inside, staring out at the rain like a Dickensian orphan. I was an only child, so there was no one else to play with. My father worked from home, so I was not truly alone, but he could not actively play with me since he was technically at work. It was those days that I would resign myself to whatever was on television or any books that I could find lying around. I'd crawl through the day and pray each night that the rain would not be there the next day.

As an adult, though, my opinion of summer rain has changed. When you have to work every day, summer is not as eagerly anticipated. Mostly, the days run together, bleeding into each other so that they no longer seem like separate entities and instead feel like continuations of the same long day. Everything seems monotonous and dull, and an ennui or listlessness kicks in. Such a mindset makes you cheer for anything new or different. I spend the winter dreaming of summer and the summer dreaming of winter. When summer comes, I complain about how hot it is. And then I look forward to the rain, because the rain brings with it a cold front, which offers a reprieve—admittedly one that is all too short—from the torture of 100° and humid days. Rainy days are still the worst days of the summer, but summer rain today means positively beautiful—and considerably cooler—weather tomorrow.

**Questions:**

- a. Why is summer different for adults?
- b. The author of this passage describes his or her feelings about rainy summer days. In general, how do you feel about such days?
- c. Do you agree with the author's opinions, or do you not mind this type of weather? Briefly explain your views.
- d. In paragraph 4, the author describes why he or she no longer looks forward to summertime the way he or she used to do as a child. What do you think of this change? Do you believe that you will come to feel this way one day? Why or why not?
- e. Give in simple English the meaning of following words:  
Dreary; Reprieve



**ANNEXURE**

**Title Page of Assignment**

<b>1</b>	<b>Name of the Student</b>	
<b>2</b>	<b>Registration Number</b>	
<b>3</b>	<b>Assignment Number (1/2)</b>	
<b>4</b>	<b>Subject Name</b>	
<b>5</b>	<b>Subject Code</b>	
<b>6</b>	<b>Date of Submission</b>	

**Signature of Student**

**Signature of Coordinator**

**FOR OFFICE USE**

Total Marks obtained: \_\_\_\_\_

Evaluated by: \_\_\_\_\_

(Signature of evaluator)