

Guru Nanak Dev Engineering College, Ludhiana			
Department of Information Technology			
Program	B.Tech.(IT)	Semester	4 (Section-B)
Subject Code	PCIT-105	Subject Title	Python Programming
Mid Semester Exam (MSE) No.	2	Course Coordinator(s)	Akshay Girdhar
Max. Marks	24	Time Duration	1 hour 30 minutes
Date of MSE	29 <sup>th</sup> May, 2023	Roll Number	

Note: Attempt all questions. All assumptions must be clearly stated.

Q. No.	Question	C0s, RBT level	Marks
Q1	Radhika complains that defining functions to use in her programs is a lot of extra work. She says she can finish her programs much more quickly if she just writes them using the basic operators and control statements. State two reasons why her view is shortsighted.	CO1, L2	2
Q2	Justify how len () and count () are different with the help of examples.	CO1, L4	2
Q3	With the help of examples, differentiate between lists and dictionaries.	CO2, L2	4
Q4	With the help of code snippets: <ul style="list-style-type: none"> <li>Differentiate between structural equivalence and object identity.</li> <li>Differentiate between function and method.</li> </ul>	CO3, L3	4
Q5	Develop a code that inputs a text file. The code should print the unique words in the file in alphabetical order. The code should print the number of characters and digits.	CO6, L6	4
Q6	Create a recursive function that expects a pathname as an argument. The pathname can be either the name of a file or the name of a directory. If the pathname refers to a file, its name is displayed, followed by its contents. Otherwise, if the pathname refers to a directory, the function is applied to each name in the directory. Test this function in a new program.	CO6, L6	8

#### Course Outcomes (CO)

Students will be able to

- Master Object-oriented programming to create programs using various constructs.
- Identify, formulate, and solve engineering problems using software development process.
- Apply the knowledge of language constructs to program complex real life solutions.
- Function on multi-disciplinary teams through case studies.
- Use the techniques, skills, and modern engineering tools such as PyCharm, Anaconda necessary for project development.
- Design real -world problems and think creatively about solutions of them.

RBT Classification	Lower Order Thinking Levels (LOTS)		Higher Order Thinking Levels (HOTS)			
RBT Level Number	L1	L2	L3	L4	L5	L6
RBT Level Name	Remembering	Understanding	Applying	Analyzing	Evaluating	Creating

Subject Code	PCIT-105	Subject Title : Python Programming	Marks
Q. No.	Question		
Q1	Interpret the following statement with "The Python virtual machine sometimes knows the value of a Boolean expression before it has evaluated all of its operands."	the help of code snippet (s) :	2
Q2	Analyze the following statement: "Whether you are running Python code as a script or interactively in a shell, the Python interpreter does a great deal of work to carry out the instructions in your program."		2
Q3	With the help of an example, associate software development process.		4
Q4	Illustrate iterative code with <i>else</i> and <i>break</i> .		4
Q5	An investor deposits \$10,000 with the Get-Rich-Quick agency and receives a statement predicting the earnings on an annual percentage rate (APR) of 5% for a period of 5 years. Write a program that prints the beginning principal and the interest earned for each year of the period. The program also prints the total amount earned and the final principal.		4
Q6	<p>Develop code to perform the following task:</p> <p>Suppose you have data containing two fields (roll_no, obtained_marks) for the subject Chemistry where maximum marks are 60. Assume there are 70 students in the class and each one having has obtained some marks out of 60 i.e. no one is absent. Consider data in such a way that 40% of the maximum marks is the pass criteria and few students have obtained marks ranging 0 to 15 (Case-I) and others have obtained marks in the range of 16 to 60 (Case-II).</p> <p>You are supposed to compute average of obtained_marks of the stated cases.</p> <p>Assume average of obtained_marks of students in Case-II is less than 48.</p> <p>Now you can have additional fields called additional_marks and final_marks in your data.</p> <p>Populate the data in such a way that you start assigning marks in the field additional_marks starting from 1 to all the students of Case-II(here final_marks=obtained_marks+additional_marks). Care must be taken that in no case final_marks be greater than maximum marks.</p> <p>Perform the iterative process of addition of marks for all the students of Case-II and stop the process when average of final_marks of all students in Case-II is 48 (our target average). Ensure that all students of Case-II are given equal additional_marks except for students who have reached maximum limit.</p> <p>Your program must be such that target average for Case-II must be read through appropriate prompt message. If target average for Case-II is already greater than or equal to the Case-II obtained marks of students, no action is required, just display an appropriate message in that case.</p>	8	

Guru Nanak Dev Engineering College, Ludhiana			
Department of Information Technology			
Program	B.Tech.(IT)	Semester	4 <sup>th</sup>
Subject Code	PCIT-107	Subject Title	Web Technologies
Mid Semester Examination (MSE) No.	2	Course Coordinator(s)	Er. Navdeep Kaur Deol
Max. Marks	24	Time Duration	1 hour 30 minutes
Date of MSE	24 <sup>th</sup> May, 2023	Roll Number	2121100

Note: Attempt all questions

Q. No.	Question	COs, RBT level	Marks
Q1	Differentiate between localStorage and sessionStorage.	CO2, L2	2
Q2	What are the different fade methods in jQuery?	CO2, L4	2
Q3	How to set content with the jQuery text(), html(), val() and attr() methods. Explain with suitable examples.	CO4, L3	4
Q4	Write code snippets to demonstrate asort, ksort, arsort and krsort PHP functions.	CO5, L3	4
Q5	Create a multi-column layout in html using CSS3(just like newspaper with some headings, text and image). Also, diagrammatically represent the layout.	CO2, L6	4
Q6	How to connect PHP with MySQL database. Also, write PHP script to update the Address and Dept. No. of Jack William to United States and 5 respectively in the following table:	CO5, L5	8

#### Employee Details

EmpID	EmpName	Address	Dept. No.
1	Mary Doe	Germany	2
2	Cindy Smith	Mexico	3
3	Jack William	England	4

#### Course Outcomes (CO) Students will be able to:

- 1 Understand the basic tools required for Web designing and applications
- 2 Build HTML5 and CSS3 for designing interactive web pages.
- 3 Analyse the basic operations of an AJAX application
- 4 Develop an interactive website using jQuery.
- 5 Acquire the basic usage of PHP construct and its integration with database for developing web modules like, login module, session authentication
- 6 Create and design dynamic web application using contemporary development tools like, MVC framework.

RBT Classification	Lower Order Thinking Levels (LOTS)			Higher Order Thinking Levels (HOTS)		
RBT Level No.	L1	L2	L3	L4	L5	L6
RBT Level Name	Remembering	Understanding	Applying	Analyzing	Evaluating	Creating

Guru Nanak Dev Engineering College, Ludhiana		
Department of Information Technology		
<b>Program</b>	B.Tech.(IT)	Semester
<b>Subject Code</b>	PCIT-107	Subject Title
<b>Mid Semester Examination (MSE) No.</b>	1	Course
<b>Max. Marks</b>	24	Coordinator(s)
<b>Date of MSE</b>	24 <sup>th</sup> March, 2023	Time Duration
<b>Roll Number</b>		

Note: Attempt all questions

### Question

Q. No.	Question	CO	
Q1	Differentiate between HTML and XHTML.		
Q2	What are the empty elements in HTML? Briefly explain it with an example.		
Q3	In how many ways can you integrate CSS on a web page? Discuss with the help of programming examples.	CO	
Q4	Explain the various event handling methods in jQuery.	CO4, L2	
Q5	Briefly explain the ordered and unordered lists in HTML with suitable example. Also, explain how can you change the type of list and control the list counting?	CO1, L4	
Q6	Create a feedback form in HTML and demonstrate the use of various form elements like text fields, radio buttons, checkboxes, text area and submit button. Also apply form validation on any two fields using JavaScript.	CO4, L6	8

### Course Outcomes (CO)

Students will be able to

1	Understand the basic tools required for Web designing and applications	
2	Build HTML5 and CSS3 for designing interactive web pages.	
3	Analyze the basic operations of an AJAX application	
4	Develop an interactive website using jQuery.	
5	Acquire the basic usage of PHP construct and its integration with database for developing web modules like, login module, session authentication	
6	Create and design dynamic web application using contemporary development tools like, MVC framework.	

RBT Classification	Lower Order Thinking Levels (LOTS)			Higher Order Thinking Levels (HOTS)		
RBT Level Number	L1	L2	L3	L4	L5	L6
RBT Level Name	Remembering	Understanding	Applying	Analyzing	Evaluating	Creating

**Guru Nanak Dev Engineering College, Ludhiana**  
**Department of Information Technology**

<b>Program</b>	B.Tech (IT)	<b>Semester</b>	4 <sup>th</sup>
<b>Subject Code</b>	PCIT-108	<b>Subject Title</b>	Computer Architecture and Microprocessor
<b>MST No</b>	2	<b>Course Coordinator(s)</b>	Dr. Amit Kamra / Er. Gitanjali
<b>Max. Marks</b>	24	<b>Time Duration</b>	1 hour 30 minutes
<b>Date of MST</b>	22 <sup>nd</sup> May 2023	<b>Roll Number</b>	

**Note:** Attempt all questions

<b>Q. No.</b>	<b>Question</b>	<b>COs, RBT level</b>	<b>Marks</b>
Q1	Explain how the parallel processing improves the performance of multiprocessing environment.	CO4, L2	2
Q2	Support the statement "The use of microprocessor makes daily life easier" with the help of real time applications.	CO6, L5	2
Q3	a) Illustrate the need and significance of memory hierarchy. b) Discuss the main objective of multiprocessor.	CO1, L3 CO1, L2	4
Q4	a) Calculate the total number of cells in 64 Kb*8 memory chip. b) How many 256MB memory chips are required to build the memory capacity of 4GB RAM?	CO3, L3 CO1, L5	4
Q5	Differentiate a) Microprocessor and microcontroller b) Virtual Memory and Cache Memory	CO6, L4 CO1, L4	4
Q6	Draw the pin diagram of 8051 microcontroller and explain the functionality of each pin.	CO6, L6	8

#### **Course Outcomes (CO)**

*Students will be able to*

- Identify computer systems, memory organization, Microprocessor and assembly language programming
- Clarify instruction formats, RISC and CISC architecture and different addressing modes.
- Solve basic binary math operations by using the instructions of microprocessor.
- Compare between pipelining and parallelism.
- Design structured, well commented, understandable assembly language programs to provide solutions to real world problems
- Classify the trends and developments of microprocessor technology

<b>RBT Classification</b>	<b>Lower Order Thinking Levels (LOTS)</b>			<b>Higher Order Thinking Levels (HOTS)</b>		
<b>RBT Level Number</b>	L1	L2	L3	L4	L5	L6
<b>RBT Level Name</b>	Remembering	Understanding	Applying	Analyzing	Evaluating	Creating

<b>Program</b>	B.Tech. (IT)	<b>Semester</b>	4
<b>Subject Code</b>	PCIT-108	<b>Subject Title</b>	Computer Architecture & Microprocessors
<b>MST No.</b>	1	<b>Course Coordinator(s)</b>	Dr. Amit Kamra / Er. Gitanjali
<b>Max. Marks</b>	24	<b>Time Duration</b>	1 hour 30 minutes
<b>Date of MST</b>	24 March 2023	<b>Roll Number</b>	
<b>Note:</b> 1. Attempt all the questions in serial order.			
<b>Q. No.</b>	<b>Question</b>	<b>COs, RBT level</b>	<b>Mark</b>
Q1	Demonstrate the execution of the following instructions (i) LDA addr ii) ADC r iii) CMA iv) PUSH rp.	CO3, L3	2
Q2	Differentiate microprocessor and microcontroller.	CO1, L4	2
Q3	Discuss the different ways in which the location of the operand is specified in an instruction of Intel 8085? Explain them with the help of examples.	CO2, L2	4
Q4	Describe the different steps of instruction cycle with the help of flow chart.	CO1, L2	2
Q5	Write an assembly language program to add two 8-bit numbers without the carry.	CO5, L6	6
Q6	Draw and explain the architecture of the 8085 microprocessor.	CO1, L6	6

**Course Outcomes (CO) Students will be able to:**

I Identify computer systems, memory organization, Microprocessor and assembly language programming

Clarify instruction formats, RISC and CISC architecture and different addressing modes

Solve basic binary math operations by using the instructions of microprocessor

Compare between pipelining and parallelism

Design structured, well commented, understandable assembly language programs to provide solutions to world problems

Classify the trends and developments of microprocessor technology

RBT Classification	Lower Order Thinking Levels (LOTS)			Higher Order Thinking Levels (HOTL)		
Level	L1	L2	L3	L4	L5	L6
	Recalling	Applying	Analyzing	Evaluating	Creating	Decision Making

Department of Information Technology

Program	B.Tech. (IT)	Semester	4
Subject Code	PCIT-108	Subject Title	Computer Architecture & Mi
MST No.	1	Course Coordinator(s)	Dr. Amit Kamra / Er. Gitanjal
Max. Marks	24	Time Duration	1 hour 30 minutes
Date of MST	24 March 2023	Roll Number	2104551

Note: 1. Attempt all the questions in serial order.

Q. No.	Question	COs, RBT level
Q1	Demonstrate the execution of the following instructions (i) LDA addr ii) ADC r ii) CMA iii) PUSH rp.	CO3, L3
Q2	Differentiate microprocessor and microcontroller.	CO1,L4
Q3	Discuss the different ways in which the location of the operand is specified in an instruction of Intel 8085? Explain them with the help of examples.	CO2,L2
Q4	Describe the different steps of instruction cycle with the help of flow chart.	CO1,L2
Q5	Write an assembly language program to add two 8-bit numbers without the carry.	CO5,L6
Q6	Draw and explain the architecture of the 8085 microprocessor.	CO1,L6

**Course Outcomes (CO) Students will be able to:**

1	Identify computer systems, memory organization, Microprocessor and assembly language programming
2	Clarify instruction formats, RISC and CISC architecture and different addressing modes
3	Solve basic binary math operations by using the instructions of microprocessor
4	Compare between pipelining and parallelism
	Design structured, well commented, understandable assembly language programs to provide solutions to world problems
	Classify the trends and developments of microprocessor technology

RBT Classification	Lower Order Thinking Levels (LOTS)			Higher Order Thinking Levels (HOTL)		
RBT Level No.	L1	L2	L3	L4	L5	L6
RBT Level	Remembering	Understanding	Applying	Analyzing	Evaluating	Creating

**Guru Nanak Dev Engineering College, Ludhiana**  
**Department of Information Technology**

<b>Program</b>	B.Tech.	<b>Semester</b>	6
<b>Subject Code</b>	PCIT-104	<b>Subject Title</b>	Database Management System
<b>(MST) No.</b>	12	<b>Course Coordinator</b>	Mohanjit Kaur Kang
<b>Max. Marks</b>	24	<b>Time Duration</b>	1 hr 30 mins
<b>Date of MST</b>		<b>Roll Number</b>	2104560

**Note:** Attempt all questions

<b>Q. No.</b>	<b>Question</b>	<b>COs, RBT level</b>
Q1	Define TPS.	CO3, L1
Q2	Distinguish between super key and candidate key.	CO2, L4
Q3	Discuss any ten SQL Queries in DBMS with syntax.	CO3, L2
Q4	Draw a state diagram of transaction showing its state. Explain ACID properties of a transaction	CO3, L3
Q5	Contrast log based recovery and cascading rollback.	CO2, L4
Q6	Illustrate functional Dependency? Explain its use in DBMS. Explain BOYCE-CODD normal forms and how does it differ from 3NF. OR How you Evaluate NOSQL .Explain NOSQL database along with case study of MetLife, face book and Google.	CO2, CO5,L4,L5

### **Course Outcomes (CO)**

*Students will be able to*

- 1 Apply knowledge of database system, No Sql database, data mining and SQL structure.
- 2 Identify, formulate database design, Functional dependencies and recovery techniques
- 3 Use the techniques, skills and tools such as query handling, normalized relations
- 4 Design Physical and object relational database.
- Investigate various case studies using NoSql.
- Apply the Applications of spatial and multimedia databases for real world.

<b>RBT Classification</b>	<b>Lower Order Thinking Levels (LOTS)</b>			<b>Higher Order Thinking Levels</b>	
<b>RBT Level Number</b>	L1	L2	L3	L4	L5
<b>BT Level Name</b>	Remembering	Understanding	Applying	Analyzing	Evaluating

Guru Nanak Dev Engineering College, Ludhiana		Department of Information Technology	Semester	4
Program Subject Code	B.Tech.(IT) BSIT-101	Subject Title	Probability and Statistics	
Mid Semester Test (MST) No.	2	Course Coordinator(s)	Rupinder Kaur	
Max. Marks	24	Time Duration	1 hour 30 minutes	
Date of MST	24 <sup>th</sup> May, 2023	Roll Number	2104560	

Note: Attempt all questions

Q. No.	Question	COs, RBT level	Marks
Q1	Distinguish Null Hypothesis and Alternate Hypothesis.	CO1, L4	2
Q2	Write properties of Normal Distribution.	CO3, L1	2
Q3	The means of two large sample of sizes 1000 and 2000 are 168.75 cms and 170 cms respectively. Can the samples be regarded as drawn from a population with same mean and S.D 6.25 cms.	CO4, L3	4
Q4	A, B and C are three candidates for the post of Director in a company. Their respective chances of selection are in the ratio of 4:5:3. The probability that A, if selected will introduce the internet trading in the company is 0.30. Similarly, the probability of B and C are 0.50 and 0.60 respectively. Find the probability that the company will introduce internet trading. Also find the probability that Director B introduced the internet trading in the company.	CO6, L5	4
Q5	A sample of 9 boys had heights (inches): 45, 47, 50, 52, 48, 47, 53 and 51. In the light of data, discuss the suggestion that mean height of population is 47.5.	CO4, L3	
Q6	The number of defects per unit in a sample of 330 units of a manufactured product was found as follow:	CO3+CO4, L5	
	No of defect:  0      1      2      3      4		
	No of units:  214      92      20      3      1		
	Fit a Poisson Distribution to the data and test goodness of fit.		

### Course Outcomes (CO)

Students will be able to

Demonstrate the measures of central tendency to analyze the given data set