

# GOVERNMENT POLYTECHNIC, KOLHAPUR – 416004.

(An Autonomous Institute of Govt. Of Maharashtra)

WINTER/SUMMER- 2023

EXAM SEAT NO.

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LEVEL :- FOURTH

PROGRAM : Information Technology

COURSE CODE :- ITG402

COURSE NAME :- SOFTWARE TESTING

MAX. MARKS : 40 TIME : 1.5 Hrs DATE :- 28/11/23

Instruction :-

- 1) Answers of two sections must be written in separate section answer book provided.
- 2) Illustrate your answers with sketches wherever necessary.
- 3) Use of non-programmable pocket calculator is permissible.
- 4) Mathematical and other tables shall be made available on request.
- 5) Assume and mention suitable additional data if necessary.
- 6) Use of Mobile is strictly prohibited.
- 7) QN- Question No., SQN-Sub Question No. R- Remembering, U- Understanding, A- Application.

QN	S Q N	SECTION - I	R/ U/ A	Co ITG402	Ma rks
Q.1		Attempt any <b>FOUR</b> :			<b>08</b>
	a)	Define verification and validation with respect to software testing	R	ITG402-1	
	b)	Define static and dynamic testing.	R	ITG402-1	
	c)	Define Structural Testing.	R	ITG402-2	
	d)	Design any four boundary value test cases for textbox which accept numbers from 10-100	A	ITG402-2	
	e)	State the need of stub and driver in Unit testing.	R	ITG402-3	
	f)	State the use of recovery testing.	R	ITG402-3	
Q.2		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Define software testing. List all skills of software tester.	U	ITG402-1	
	b)	Differentiate between Quality Assurance and Quality Control.		ITG402-1	
	c)	Describe Inspection under static testing.	U	ITG402-2	
	d)	Describe the use of decision table in black box testing with the help of suitable example.	A	ITG402-2	
	e)	Design test cases for railway reservation system.	A	ITG402-3	
	f)	Describe Top-Down integration testing with labelled diagram.	U	ITG402-3	
Q.3		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Describe an entry and exit criteria of software testing.		ITG402-1	
	b)	Describe Code Complexity testing.		ITG402-2	
	c)	Draw classification of White Box testing. Explain any one type of White Box testing in detail.		ITG402-2	
	d)	With respect to GUI testing write the test cases for Amazon login form.	A	ITG402-3	
	e)	Describe sanity testing and smoke testing.		ITG402-3	
	f)	Differentiate between alpha and beta testing. (four points)		ITG402-3	

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QN	S Q N	SECTION –II	R/ U/ A	Co	Ma rks
Q.4		Attempt any <b>FOUR</b> :			<b>08</b>
	a)	State how to minimize risk impact while estimating defect.	R	ITG402- 5	<b>02</b>
	b)	Define software matrix and measurement.	U	ITG402- 6	<b>02</b>
	c)	Enlist any four the benefits of Test Plan.	R	ITG402- 4	<b>02</b>
	d)	Enlist any two activities involved in test planning.	U	ITG402- 4	<b>02</b>
	e)	Enlist any four basic principles of writing good test cases.	U	ITG402- 4	<b>02</b>
	f)	Write down need of training in test planning	U	ITG402- 4	<b>02</b>
Q.5		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	List the different guidelines to be followed while selecting dynamic test tools.	U	ITG402- 6	<b>04</b>
	b)	Prepare test plan along with test cases for notepad option copy-paste.	A	ITG402- 4	<b>04</b>
	c)	Explain defect classification.	U	ITG402- 5	<b>04</b>
	d)	Describe the process of preparation of test plan.	U	ITG402- 4	<b>04</b>
	e)	Describe different metrics types with its classification.	A	ITG402- 6	<b>04</b>
	f)	Draw defect prevention process cycle. State working of each phase.	A	ITG402- 5	<b>04</b>
Q.6		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Prepare test Plan for user login form.	A	ITG402- 4	<b>04</b>
	b)	State any four points of comparison between Static analysis tools and Dynamic analysis tools.	U	ITG402- 6	<b>04</b>
	c)	Design any two test cases for railway reservation form and prepare defect report of it.	A	ITG402- 5	<b>04</b>
	d)	Explain test case specification.	U	ITG402- 4	<b>04</b>
	e)	Enlist different techniques for finding defects and describe any one technique with an example.	U	ITG402- 5	<b>04</b>
	f)	Describe criteria for Selecting Testing Tools with its description.	A	ITG402- 6	<b>04</b>

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LEVEL :- IV

PROGRAM : INFORMATION TECHNOLOGY

COURSE CODE :- ITG404

COURSE NAME :- PYTHON PROGRAMMING

MAX. MARKS : 40 TIME : 1.5 Hrs DATE :- 28/11/23

QN	S Q N	SECTION -II	R/ U/ A	Co	Ma rks
Q.4		Attempt any <b>FOUR</b> :			<b>08</b>
	a)	Enlist different modes of opening file in python.	R	4	
	b)	Write Syntax of read() & readlines() method.	R	4	
	c)	State use of findall - RegEx function in python.	R	5	
	d)	Define split - RegEx function in python.	R	5	
	e)	State how to create Dialog box with syntax.	U	6	
	f)	State how to create Checkbox with syntax	U	6	
Q.5		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Explain working of binary files in python.	U	4	
	b)	Write a program to read contents of first.txt file & write contents in second.txt.	A	4	
	c)	Explain RegEx function of -findall, serach, split and sub in python.	U	5	
	d)	Write a Python program to find the substrings within a string.	A	5	
	e)	Explain any four Tkinter widget with example.	U	6	
	f)	Write program to perform Insert & update operation on database in python.	A	6	
Q.6		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Compare write() and writelines() with example.	U	4	
	b)	Write program to open file in write mode & append same content at the end of file.	A	4	
	c)	Explain data set & data type of machine learning in python	U	5	
	d)	Write a Python program to find all words starting with 'a' or 'e' in a given string	A	5	
	e)	Explain Label, Button widget with its properties.	U	6	
	f)	Create GUI application to show use of dialogbox in python.	A	6	

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LEVEL : - FOURTH

PROGRAM : INFO. TECH.

COURSE CODE :- ITG404

COURSE NAME :- PYTHON PROGRAMMING

MAX. MARKS : 40 TIME : 1.5 Hrs DATE :- 28/11/23

Instruction :-

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QN	S Q N	SECTION - I	R/ U/ A	Co ITG 404	Marks
Q.1		Attempt any <b>FOUR</b> :			<b>08</b>
	a)	Write any four python programming editors.	R	1	
	b)	What is mean by Indentation?	R	1	
	c)	State use of bitwise operator.	U	2	
	d)	Define Self variable.	R	3	
	e)	Compare overloading & Overriding.	U	3	
	f)	List types of errors in python.	R	3	
Q.2		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Explain any four string function with example.	R	1	
	b)	Compare List and Tuples with example.	U	1	
	c)	Explain local & global variable concept with example.	R	2	
	d)	Describe operator precedence in python.	R	2	
	e)	Write a python program for single inheritance.	A	3	
	f)	Explain destructors with example.	U	3	
Q.3		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Explain basic list operations with example.	R	1	
	b)	Write a python program to create, update & display dictionary.	A	1	
	c)	Write a Python program to print all negative numbers in the list. (Take list as input from user)	A	2	
	d)	Describe use of Identity operator with example.	U	2	
	e)	Write a program for multilevel inheritance.	A	3	
	f)	Explain use of Exception handling with example.	R	3	

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LEVEL : - IV

PROGRAM : INFORMATION TECHNOLOGY

COURSE CODE :- ITG404

COURSE NAME :- PYTHON PROGRAMMING

MAX. MARKS : 40 TIME : 1.5 Hrs DATE :- 28/11/23

QN	S Q N	SECTION -II	R/ U/ A	Co	Ma rks
Q.4		Attempt any <b>FOUR</b> :			<b>08</b>
	a)	Enlist different modes of opening file in python.	R	4	
	b)	Write Syntax of read() & readlines() method.	R	4	
	c)	State use of findall - RegEx function in python.	R	5	
	d)	Define split - RegEx function in python.	R	5	
	e)	State how to create Dialog box with syntax.	U	6	
	f)	State how to create Checkbox with syntax	U	6	
Q.5		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Explain working of binary files in python.	U	4	
	b)	Write a program to read contents of first.txt file & write contents in second.txt.	A	4	
	c)	Explain RegEx function of -findall, serach, split and sub in python.	U	5	
	d)	Write a Python program to find the substrings within a string.	A	5	
	e)	Explain any four Tkinter widget with example.	U	6	
	f)	Write program to perform Insert & update operation on database in python.	A	6	
Q.6		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Compare write() and writelines() with example.	U	4	
	b)	Write program to open file in write mode & append same content at the end of file.	A	4	
	c)	Explain data set & data type of machine learning in python	U	5	
	d)	Write a Python program to find all words starting with 'a' or 'e' in a given string	A	5	
	e)	Explain Label, Button widget with its properties.	U	6	
	f)	Create GUI application to show use of dialogbox in python.	A	6	

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QN	S Q N	SECTION -I	R/ U/ A	Co ITG 404	Marks
Q.1		Attempt any <b>FOUR</b> :			<b>08</b>
	a)	Write any four python programming editors.	R	1	
	b)	What is mean by Indentation?	R	1	
	c)	State use of bitwise operator.	U	2	
	d)	Define Self variable.	R	3	
	e)	Compare overloading & Overriding.	U	3	
	f)	List types of errors in python.	R	3	
Q.2		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Explain any four string function with example.	R	1	
	b)	Compare List and Tuples with example.	U	1	
	c)	Explain local & global variable concept with example.	R	2	
	d)	Describe operator precedence in python.	R	2	
	e)	Write a python program for single inheritance.	A	3	
	f)	Explain destructors with example.	U	3	
Q.3		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Explain basic list operations with example.	R	1	
	b)	Write a python program to create, update & display dictionary.	A	1	
	c)	Write a Python program to print all negative numbers in the list. (Take list as input from user)	A	2	
	d)	Describe use of Identity operator with example.	U	2	
	e)	Write a program for multilevel inheritance.	A	3	
	f)	Explain use of Exception handling with example.	R	3	

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EXAM SEAT NO.

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LEVEL: - V

PROGRAM: Information Technology

COURSE CODE: - ITG506

COURSE NAME: - Emerging Trends in IT

MAX. MARKS : 80 TIME : 03 Hrs.

DATE : 30/11/23

Instruction :-

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QN	S Q N	SECTION - I	R/ U/ A	Co	Mark s
Q.1		Attempt any <b>FOUR</b> :			<b>08</b>
	a)	State the goal of deep learning.	R	ITG506-1	
	b)	Write any four disadvantages of AI.	R	ITG506-1	
	c)	Draw Architecture of Embedded Systems.	U	ITG506-2	
	d)	Enlist advantages of ASIC.	R	ITG506-2	
	e)	Define private block chain.	R	ITG506-3	
	f)	Define hashing.	R	ITG506-3	
Q.2		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Explain AVR with its applications.	U	ITG506-2	
	b)	Compare private block chain and public block chain on the basis of security, speed and effects.	U	ITG506-3	
	c)	Explain architecture of embedded system with neat diagram.	U	ITG506-2	
	d)	Elaborate the concept of Open AI.	U	ITG506-1	
	e)	List and Explain various applications of AI.	U	ITG506-1	
	f)	Explain the public key cryptosystem with a diagram.	U	ITG506-3	
Q.3		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	What are the main differences between AI, Machine Learning, and Deep Learning?	U	ITG506-1	
	b)	Explain PCI with its applications.	U	ITG506-2	
	c)	Describe approach of AI.	U	ITG506-1	
	d)	State the use of block chain in Medical information system with suitable example.	A	ITG506-3	
	e)	Explain the term future of block chain in detail.	U	ITG506-3	
	f)	Write down history of crypto currency.	U	ITG506-3	

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LEVEL :- 5

PROGRAM : Information Technology

COURSE CODE :- ITG506

COURSE NAME :- EMERGING TRENDS IN IT

MAX. MARKS : 80 TIME : 03 Hrs DATE : 30/11/23

QN	S Q N	SECTION -II	R/ U/ A	Co	Ma rks
Q.4		Attempt any <b>FOUR</b> :			<b>08</b>
	a)	Define E-commerce.	R	ITG506-4	
	b)	State the need of virtual reality.	U	ITG506-5	
	c)	Define confidentiality.	R	ITG506-4	
	d)	State the use of credit card in E-commerce.	R	ITG506-4	
	e)	Write any two challenges with AR.	R	ITG506-5	
	f)	Define Virtual Reality.	R	ITG506-5	
Q.5		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Describe the evolution of e-commerce.	R	ITG506-4	
	b)	Explain features of Augmented Reality.	U	ITG506-5	
	c)	Explain the factors fuelling to E-commerce.	U	ITG506-4	
	d)	Explain Ecommerce payment systems – credit card and debit cards with examples.	A	ITG506-4	
	e)	Explain the key elements of Virtual Reality.	U	ITG506-5	
	f)	Differentiate between AR and VR.(Any Four)	A	ITG506-5	
Q.6		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Explain E-commerce concept.	U	ITG506-4	
	b)	Explain Virtual Reality with its Advantages.	U	ITG506-5	
	c)	Write Applications of Augmented Reality.	A	ITG506-5	
	d)	Compare E-commerce with Traditional Commerce.(Any Four)	U	ITG506-4	
	e)	How Google pay UPI based payment system is works? Explain with example.	A	ITG506-4	
	f)	Explain the Mixed reality concept with example.	U	ITG506-5	

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EXAM SEAT NO.

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LEVEL: - V

PROGRAM: Information Technology

COURSE CODE: - ITG506

COURSE NAME: - Emerging Trends in IT

MAX. MARKS : 80 TIME : 03 Hrs.

DATE : 30/11/23

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	c)	Draw Architecture of Embedded Systems.	U	ITG506-2	
	d)	Enlist advantages of ASIC.	R	ITG506-2	
	e)	Define private block chain.	R	ITG506-3	
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Q.2		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Explain AVR with its applications.	U	ITG506-2	
	b)	Compare private block chain and public block chain on the basis of security, speed and effects.	U	ITG506-3	
	c)	Explain architecture of embedded system with neat diagram.	U	ITG506-2	
	d)	Elaborate the concept of Open AI.	U	ITG506-1	
	e)	List and Explain various applications of AI.	U	ITG506-1	
	f)	Explain the public key cryptosystem with a diagram.	U	ITG506-3	
Q.3		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	What are the main differences between AI, Machine Learning, and Deep Learning?	U	ITG506-1	
	b)	Explain PCI with its applications.	U	ITG506-2	
	c)	Describe approach of AI.	U	ITG506-1	
	d)	State the use of block chain in Medical information system with suitable example.	A	ITG506-3	
	e)	Explain the term future of block chain in detail.	U	ITG506-3	
	f)	Write down history of crypto currency.	U	ITG506-3	

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**GOVERNMENT POLYTECHNIC, KOLHAPUR – 416004.**

(An Autonomous Institute of Govt. Of Maharashtra)

**WINTER/SUMMER- 2023**

**EXAM SEAT NO.**

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LEVEL :- 5

PROGRAM : Information Technology

COURSE CODE :- ITG506

COURSE NAME :- EMERGING TRENDS IN IT

MAX. MARKS : 80 TIME : 03 Hrs DATE : 30/11/23

QN	S Q N	SECTION –II	R/ U/ A	Co	Ma rks
Q.4		Attempt any <b>FOUR</b> :			<b>08</b>
	a)	Define E-commerce.	R	ITG506-4	
	b)	State the need of virtual reality.	U	ITG506-5	
	c)	Define confidentiality.	R	ITG506-4	
	d)	State the use of credit card in E-commerce.	R	ITG506-4	
	e)	Write any two challenges with AR.	R	ITG506-5	
	f)	Define Virtual Reality.	R	ITG506-5	
Q.5		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Describe the evolution of e-commerce.	R	ITG506-4	
	b)	Explain features of Augmented Reality.	U	ITG506-5	
	c)	Explain the factors fuelling to E-commerce.	U	ITG506-4	
	d)	Explain Ecommerce payment systems – credit card and debit cards with examples.	A	ITG506-4	
	e)	Explain the key elements of Virtual Reality.	U	ITG506-5	
	f)	Differentiate between AR and VR.(Any Four)	A	ITG506-5	
Q.6		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Explain E-commerce concept.	U	ITG506-4	
	b)	Explain Virtual Reality with its Advantages.	U	ITG506-5	
	c)	Write Applications of Augmented Reality.	A	ITG506-5	
	d)	Compare E-commerce with Traditional Commerce.(Any Four)	U	ITG506-4	
	e)	How Google pay UPI based payment system is works? Explain with example.	A	ITG506-4	
	f)	Explain the Mixed reality concept with example.	U	ITG506-5	

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**GOVERNMENT POLYTECHNIC, KOLHAPUR – 416004.**

(An Autonomous Institute of Govt. Of Maharashtra)

**SUMMER/WINTER-**

**EXAM SEAT NO.**

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LEVEL: - IV

PROGRAM: INFORMATION TECHNOLOGY

COURSE CODE: - ITG408

COURSE NAME: - Web Development using PHP

MAX. MARKS: 80

TIMES: 03 Hrs.

DATE: -30/11/2023

QN	S Q N	SECTION –II	R/ U/ A	Co ITG408	Ma rks
Q.4		Attempt any <b>FOUR</b> :			<b>08</b>
	a)	Define cookies.	R	4	
	b)	Give syntax for sending mail in php.	R	4	
	c)	State any four features of Mysql.	R	5	
	d)	Define hosting website.	R	5	
	e)	Write function used to close file. Why closing file is required in php?	U	6	
	f)	State the php function used to display directory content. Write syntax.	R	6	
Q.5		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Explain session concept for starting session and getting session variable with example.	U	4	
	b)	Write php script to create, set and display cookie.	A	4	
	c)	Explain the steps to connect to Mysql database in php.	U	5	
	d)	Write php script to create mysql database using php.	A	5	
	e)	Write php script to write content to a file.	A	6	
	f)	Explain php functions for copying file and appending content to file.	U	6	
Q.6		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Explain the attributes of cookies and destroying cookie concept.	U	4	
	b)	Explain the concept of updating records into table of mysql database using php.	U	5	
	c)	Write php script to delete records from table of mysql database.	A	5	
	d)	Explain Mysql structure.	U	5	
	e)	Write php script to open file for reading.	A	6	
	f)	Explain the file permissions used in file handling.	U	6	

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**GOVERNMENT POLYTECHNIC, KOLHAPUR – 416004.**

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**SUMMER/WINTER-****EXAM SEAT NO.**

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LEVEL :- IV

PROGRAM : Information Technology

COURSE CODE :- ITG408

COURSE NAME :- Web Development using PHP

MAX. MARKS : 80 TIME : 03 Hrs DATE :-30/11/2023

Instruction :-

- 1) Answers of two sections must be written in separate section answer book provided.
- 2) Illustrate your answers with sketches wherever necessary.
- 3) Use of non-programmable pocket calculator is permissible.
- 4) Mathematical and other tables shall be made available on request.
- 5) Assume and mention suitable additional data if necessary.
- 6) Use of Mobile is strictly prohibited.
- 7) QN- Question No., SQN-Sub Question No. R- Remembering, U- Understanding, A- Application.

QN	S Q N	SECTION -I	R/ U/ A	Co ITG408	Ma rks
Q.1		Attempt any <b>FOUR</b> :			<b>08</b>
	a)	Declare PHP Syntax.	R	1	
	b)	List out different datatypes in PHP.	R	1	
	c)	Define global variable in PHP.	R	1	
	d)	Write the syntax and uses of Anonymous function.	A	2	
	e)	State the use of \$ REQUEST variable.	U	3	
	f)	Define traversing of Array with example.	R	2	
Q.2		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Write PHP script to implement logical operators.	A	1	
	b)	Explain the relationship between Apache, MySQL and PHP.	U	1	
	c)	Write PHP script to implement addition of 2 x 2 matrix.	A	2	
	d)	Explain following string functions with example. a. strlen() b.strrev() c.ucwords d.strops	U	2	
	e)	Explain any four HTML input form controls.	U	3	
	f)	Write a php script for submitting any registration form(minimum 4 input values) using POST method.	A	3	
Q.3		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	How to install PHP on Linux? How to test PHP installation on Linux?	A	1	
	b)	Develop PHP script to demonstrate user defined functions.	A	2	
	c)	Explain Indexed arrays and Associative Arrays with example.	U	2	
	d)	Write a php script for submitting login form(username, password) using GET method.	A	3	
	e)	Explain the use of header () function with PHP script.	U	3	
	f)	Write PHP Script for input as mobile number validation.	A	3	

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**GOVERNMENT POLYTECHNIC, KOLHAPUR – 416004.**

(An Autonomous Institute of Govt. Of Maharashtra)

**SUMMER/WINTER-**

**EXAM SEAT NO.**

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LEVEL: - IV

PROGRAM: INFORMATION TECHNOLOGY

COURSE CODE: - ITG408

COURSE NAME: - Web Development using PHP

MAX. MARKS: 80

TIMES: 03 Hrs.

DATE: -30/11/2023

QN	S Q N	SECTION –II	R/ U/ A	Co ITG408	Ma rks
Q.4		Attempt any <b>FOUR</b> :			<b>08</b>
	a)	Define cookies.	R	4	
	b)	Give syntax for sending mail in php.	R	4	
	c)	State any four features of Mysql.	R	5	
	d)	Define hosting website.	R	5	
	e)	Write function used to close file. Why closing file is required in php?	U	6	
	f)	State the php function used to display directory content. Write syntax.	R	6	
Q.5		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Explain session concept for starting session and getting session variable with example.	U	4	
	b)	Write php script to create, set and display cookie.	A	4	
	c)	Explain the steps to connect to Mysql database in php.	U	5	
	d)	Write php script to create mysql database using php.	A	5	
	e)	Write php script to write content to a file.	A	6	
	f)	Explain php functions for copying file and appending content to file.	U	6	
Q.6		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Explain the attributes of cookies and destroying cookie concept.	U	4	
	b)	Explain the concept of updating records into table of mysql database using php.	U	5	
	c)	Write php script to delete records from table of mysql database.	A	5	
	d)	Explain Mysql structure.	U	5	
	e)	Write php script to open file for reading.	A	6	
	f)	Explain the file permissions used in file handling.	U	6	

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**GOVERNMENT POLYTECHNIC, KOLHAPUR – 416004.**

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**SUMMER/WINTER-****EXAM SEAT NO.**

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LEVEL :- IV

PROGRAM : Information Technology

COURSE CODE :- ITG408

COURSE NAME :- Web Development using PHP

MAX. MARKS : 80 TIME : 03 Hrs DATE :-30 /11/2023

Instruction :-

- 1) Answers of two sections must be written in separate section answer book provided.
- 2) Illustrate your answers with sketches wherever necessary.
- 3) Use of non-programmable pocket calculator is permissible.
- 4) Mathematical and other tables shall be made available on request.
- 5) Assume and mention suitable additional data if necessary.
- 6) Use of Mobile is strictly prohibited.
- 7) QN- Question No., SQN-Sub Question No. R- Remembering, U- Understanding, A- Application.

QN	S Q N	SECTION -I	R/ U/ A	Co ITG408	Ma rks
Q.1		Attempt any <b>FOUR</b> :			<b>08</b>
	a)	Declare PHP Syntax.	R	1	
	b)	List out different datatypes in PHP.	R	1	
	c)	Define global variable in PHP.	R	1	
	d)	Write the syntax and uses of Anonymous function.	A	2	
	e)	State the use of \$ REQUEST variable.	U	3	
	f)	Define traversing of Array with example.	R	2	
Q.2		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Write PHP script to implement logical operators.	A	1	
	b)	Explain the relationship between Apache, MySQL and PHP.	U	1	
	c)	Write PHP script to implement addition of 2 x 2 matrix.	A	2	
	d)	Explain following string functions with example. a. strlen() b.strrev() c.ucwords d.strops	U	2	
	e)	Explain any four HTML input form controls.	U	3	
	f)	Write a php script for submitting any registration form(minimum 4 input values) using POST method.	A	3	
Q.3		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	How to install PHP on Linux? How to test PHP installation on Linux?	A	1	
	b)	Develop PHP script to demonstrate user defined functions.	A	2	
	c)	Explain Indexed arrays and Associative Arrays with example.	U	2	
	d)	Write a php script for submitting login form(username, password) using GET method.	A	3	
	e)	Explain the use of header () function with PHP script.	U	3	
	f)	Write PHP Script for input as mobile number validation.	A	3	

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**GOVERNMENT POLYTECHNIC, KOLHAPUR – 416004.**

(An Autonomous Institute of Govt. Of Maharashtra)

**ODD TERM END EXAM WINTER -2023****EXAM SEAT NO.**

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LEVEL :- **THIRD**PROGRAM : **INFORMATION TECHNOLOGY**COURSE CODE :- **ITG307**COURSE NAME **OPERATING SYSTEM**MAX. MARKS : **80**TIME : **03Hrs.**DATE :- **01/12/2023**

Instruction :-

- 1) Answers must be written in the main answer book provided.( and supplements if required)
- 2) Illustrate your answers with sketches wherever necessary.
- 3) Use of non-programmable pocket calculator is permissible.
- 4) Mathematical and other tables shall be made available on request.
- 5) Assume and mention suitable additional data if necessary.
- 6) Use of Mobile is strictly prohibited.
- 7) QN- Question No., SQN-Sub Question No. R- Remembering, U- Understanding, A- Application.

QN	S Q N	Question Text	R/ U/ A	Co ITG 307	Mar ks
Q.1		Attempt any <b>FOUR</b> :			<b>08</b>
	a)	Define batch operating system.	R	1	
	b)	Define system call.	R	2	
	c)	Enlist operating system services.	R	2	
	d)	Define process control block.	R	3	
	e)	Draw process State transition diagram.	R	3	
	f)	State concept of I/O bound process.	U	3	
Q.2		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Enlist different types of operating system. Define Real time operating system.	U	1	
	b)	Explain clustered system.	U	1	
	c)	State any two activities performed by file management component of Operating System.	U	1	
	d)	Explain responsibilities of memory management with example.	U	2	
	e)	Explain two operating system components in detail.	U	2	
	f)	Explain process creation and termination.	U	3	
Q.3		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Explain monolithic operating system structure.	U	2	
	b)	Explain message passing system in IPC.	U	3	
	c)	Compare between multiprogramming and multitasking.	A	1	
	d)	Write advantages and limitations of layered operating system structure.	A	2	
	e)	Differentiate between user and kernel level threads.	A	3	
	f)	Compare between long-term scheduler and short term scheduler with respect to following points. i) Selection of job ii) Frequency of execution iii) Speed. iv) Accessing which part of the system.	A	3	

**P.T.O**

QN	S Q N	Question Text	R/ U/ A	Co ITG 307	M ar ks										
Q.4		Attempt any <b>FOUR</b> :			<b>08</b>										
	a)	State two features of pre-emptive scheduling.	R	4											
	b)	What is CPU and I/O burst cycle?	U	4											
	c)	Define CPU bus cycle.	R	4											
	d)	State necessary conditions for deadlock.	U	4											
	e)	Define compile time binding.	R	5											
	f)	State use of page table.	U	5											
Q.5		Attempt any <b>FOUR</b> :			<b>16</b>										
	a)	Explain segmentation with neat diagram.	U	5											
	b)	Explain paging with neat diagram.	U	5											
	c)	Explain multilevel queue scheduling with example.	U	4											
	d)	Consider the processes P1, P2, P3, P4 given below table, arrives for execution in the same order with arrival time 0 and given burst time. Find average waiting time using FCFS.	A	4											
		<table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Process</th> <th>Burst Time</th> </tr> </thead> <tbody> <tr> <td>P1</td> <td>4</td> </tr> <tr> <td>P2</td> <td>3</td> </tr> <tr> <td>P3</td> <td>6</td> </tr> <tr> <td>P4</td> <td>2</td> </tr> </tbody> </table>	Process	Burst Time	P1	4	P2	3	P3	6	P4	2			
Process	Burst Time														
P1	4														
P2	3														
P3	6														
P4	2														
	e)	Explain polling and interrupt.	U	5											
	f)	Describe applicant I/O interface.	R	5											
Q.6		Attempt any <b>FOUR</b> :			<b>16</b>										
	a)	Calculate average waiting time with Round Robin for following processes in memory. (time slice = 4ms)	A	4											
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Process	Burst Time														
P1	3														
P2	5														
P3	7														
P4	4														
	b)	Compare FCFS and SJF scheduling algorithm.	U	4											
	c)	Explain compaction and scrapping.	R	5											
	d)	Compare logical and physical address space.	U	5											
	e)	Describe file system structure.	U	5											
	f)	List and explain types of access in file system.	R	5											

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**GOVERNMENT POLYTECHNIC, KOLHAPUR – 416004.**

(An Autonomous Institute of Govt. Of Maharashtra)

**ODD TERM END EXAM WINTER -2023****EXAM SEAT NO.**

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LEVEL :- **THIRD**PROGRAM : **INFORMATION TECHNOLOGY**COURSE CODE :- **ITG307**COURSE NAME **OPERATING SYSTEM**MAX. MARKS : **80** TIME : **03Hrs.**DATE :- **01/12/2023**

Instruction :-

- 1) Answers must be written in the main answer book provided.( and supplements if required)
- 2) Illustrate your answers with sketches wherever necessary.
- 3) Use of non-programmable pocket calculator is permissible.
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- 7) QN- Question No., SQN-Sub Question No. R- Remembering, U- Understanding, A- Application.

QN	S Q N	Question Text	R/ U/ A	Co ITG 307	Mar ks
Q.1		Attempt any <b>FOUR</b> :			<b>08</b>
	a)	Define batch operating system.	R	1	
	b)	Define system call.	R	2	
	c)	Enlist operating system services.	R	2	
	d)	Define process control block.	R	3	
	e)	Draw process State transition diagram.	R	3	
	f)	State concept of I/O bound process.	U	3	
Q.2		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Enlist different types of operating system. Define Real time operating system.	U	1	
	b)	Explain clustered system.	U	1	
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	a)	Explain monolithic operating system structure.	U	2	
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	c)	Compare between multiprogramming and multitasking.	A	1	
	d)	Write advantages and limitations of layered operating system structure.	A	2	
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	f)	Compare between long-term scheduler and short term scheduler with respect to following points. i) Selection of job ii) Frequency of execution iii) Speed. iv) Accessing which part of the system.	A	3	

**P.T.O**

QN	S Q N	Question Text	R/ U/ A	Co ITG 307	M ar ks										
Q.4		Attempt any <b>FOUR</b> :			<b>08</b>										
	a)	State two features of pre-emptive scheduling.	R	4											
	b)	What is CPU and I/O burst cycle?	U	4											
	c)	Define CPU bus cycle.	R	4											
	d)	State necessary conditions for deadlock.	U	4											
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	f)	State use of page table.	U	5											
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	a)	Explain segmentation with neat diagram.	U	5											
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	c)	Explain multilevel queue scheduling with example.	U	4											
	d)	Consider the processes P1, P2, P3, P4 given below table, arrives for execution in the same order with arrival time 0 and given burst time. Find average waiting time using FCFS.	A	4											
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	e)	Explain polling and interrupt.	U	5											
	f)	Describe applicant I/O interface.	R	5											
Q.6		Attempt any <b>FOUR</b> :			<b>16</b>										
	a)	Calculate average waiting time with Round Robin for following processes in memory. (time slice = 4ms)	A	4											
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	b)	Compare FCFS and SJF scheduling algorithm.	U	4											
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	d)	Compare logical and physical address space.	U	5											
	e)	Describe file system structure.	U	5											
	f)	List and explain types of access in file system.	R	5											

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**GOVERNMENT POLYTECHNIC, KOLHAPUR – 416004.**

(An Autonomous Institute of Govt. Of Maharashtra)

**WINTER/SUMMER- 20****EXAM SEAT NO.**

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LEVEL : -THIRD

PROGRAM : Information Technology

COURSE CODE :- ITG305

COURSE NAME :- Database Management System

MAX. MARKS : 80 TIME : 03 Hrs DATE :- 01/12/23

Instruction :-

- 1) Answers of two sections must be written in separate section answer book provided.
- 2) Illustrate your answers with sketches wherever necessary.
- 3) Use of non-programmable pocket calculator is permissible.
- 4) Mathematical and other tables shall be made available on request.
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- 6) Use of Mobile is strictly prohibited.
- 7) QN- Question No., SQN-Sub Question No. R- Remembering, U- Understanding, A- Application.

QN	S Q N	SECTION - I	R/ U/ A	Co ITG305	Ma rks
Q.1		Attempt any <b>FOUR</b> :			<b>08</b>
	a)	Define DBMS.	R	1	
	b)	List Drawbacks of file system.	U	1	
	c)	Define term schema.	R	2	
	d)	What is Primary key?	R	3	
	e)	State use of view.	U	3	
	f)	Enlist aggregate functions.	R	3	
Q.2		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Explain any four advantages of DBMS.	U	1	
	b)	Describe different database users.	U	1	
	c)	Explain any two DML Commands with syntax and example.	A	2	
	d)	Draw ER diagram for Library Management System.	A	2	
	e)	Write and explain any four string functions.	U	3	
	f)	Explain the concept of join with example.	U	3	
Q.3		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Explain Order by, Group by and Having Clauses with example.	U	3	
	b)	Describe Relational model with example.	U	1	
	c)	Discuss about the operators SELECT, PROJECT, UNION.	U	2	
	d)	List and Explain Codd's Rules of RDBMS	U	2	
	e)	Explain use of logical operator in SQL	U	3	
	f)	Define entity and attribute. Explain different types of attribute.	A	2	

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**GOVERNMENT POLYTECHNIC, KOLHAPUR – 416004.**

(An Autonomous Institute of Govt. Of Maharashtra)

**WINTER/SUMMER-****EXAM SEAT NO.**

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LEVEL :- 3

PROGRAM : Information Technology

COURSE CODE :- ITG305

COURSE NAME :- Database Management System

MAX. MARKS : 80 TIME : 03 Hrs DATE :- 01/12/23

QN	S Q N	SECTION –II	R/ U/ A	Co	Ma rks
Q.4		Attempt any <b>FOUR</b> :			<b>08</b>
	a)	Define Normalization.	R		
	b)	State any two advantages of PL/SQL.	R		
	c)	Define database recovery.	R		
	d)	Draw State diagram of Transaction.	R		
	e)	Enlist types of exceptions in PL/SQL.	R		
	f)	List out the Problems related to decompositions?	U		
Q.5		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Illustrate functional dependency with example.	A		
	b)	Draw and explain PL/SQL block structure.	U		
	c)	Discuss about Database Failure Types?	U		
	d)	Write SQL statements for following. (i) Create user 'admin' with password '123' (ii) Give user admin full access to employee table.	A		
	e)	Demonstrate transitive dependency? Give an example?	A		
	f)	Write a PL/SQL code that accepts 3 numbers from user and display largest number.	A		
Q.6		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Explain ACID properties of transaction.	U		
	b)	Create curser emp_copy to select all records from employee table and copy them into employee2 table.	A		
	c)	Compare BCNF and 3NF.	U		
	d)	Write PL/SQL code using user defined exception for following scenario. If salary of employee is greater than 20,000 after giving raise by 20% then raise exception stating "Salary too high".	A		
	e)	Explain with example stored procedure.	U		
	f)	Explain two phase locking protocol with example.	U		

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**GOVERNMENT POLYTECHNIC, KOLHAPUR – 416004.**

(An Autonomous Institute of Govt. Of Maharashtra)

**WINTER/SUMMER- 20****EXAM SEAT NO.**

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LEVEL : -THIRD

PROGRAM : Information Technology

COURSE CODE :- ITG305

COURSE NAME :- Database Management System

MAX. MARKS : 80 TIME ; 03 Hrs DATE :-01/12/23

Instruction :-

- 1) Answers of two sections must be written in separate section answer book provided.
- 2) Illustrate your answers with sketches wherever necessary.
- 3) Use of non-programmable pocket calculator is permissible.
- 4) Mathematical and other tables shall be made available on request.
- 5) Assume and mention suitable additional data if necessary.
- 6) Use of Mobile is strictly prohibited.
- 7) QN- Question No., SQN-Sub Question No. R- Remembering, U- Understanding, A- Application.

QN	S Q N	SECTION - I	R/ U/ A	Co ITG305	Ma rks
Q.1		Attempt any <b>FOUR</b> :			<b>08</b>
	a)	Define DBMS.	R	1	
	b)	List Drawbacks of file system.	U	1	
	c)	Define term schema.	R	2	
	d)	What is Primary key?	R	3	
	e)	State use of view.	U	3	
	f)	Enlist aggregate functions.	R	3	
Q.2		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Explain any four advantages of DBMS.	U	1	
	b)	Describe different database users.	U	1	
	c)	Explain any two DML Commands with syntax and example.	A	2	
	d)	Draw ER diagram for Library Management System.	A	2	
	e)	Write and explain any four string functions.	U	3	
	f)	Explain the concept of join with example.	U	3	
Q.3		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Explain Order by, Group by and Having Clauses with example.	U	3	
	b)	Describe Relational model with example.	U	1	
	c)	Discuss about the operators SELECT, PROJECT, UNION.	U	2	
	d)	List and Explain Codd's Rules of RDBMS	U	2	
	e)	Explain use of logical operator in SQL	U	3	
	f)	Define entity and attribute. Explain different types of attribute.	A	2	

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# GOVERNMENT POLYTECHNIC, KOLHAPUR – 416004.

(An Autonomous Institute of Govt. Of Maharashtra)

WINTER/SUMMER-

EXAM SEAT NO.

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LEVEL :- 3

PROGRAM : Information Technology

COURSE CODE :- ITG305

COURSE NAME :- Database Management System

MAX. MARKS : 80 TIME : 03 Hrs DATE :- 01/12/23

QN	S Q N	SECTION –II	R/ U/ A	Co	Ma rks
Q.4		Attempt any <b>FOUR</b> :			<b>08</b>
	a)	Define Normalization.	R		
	b)	State any two advantages of PL/SQL.	R		
	c)	Define database recovery.	R		
	d)	Draw State diagram of Transaction.	R		
	e)	Enlist types of exceptions in PL/SQL.	R		
	f)	List out the Problems related to decompositions?	U		
Q.5		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Illustrate functional dependency with example.	A		
	b)	Draw and explain PL/SQL block structure.	U		
	c)	Discuss about Database Failure Types?	U		
	d)	Write SQL statements for following. (i) Create user 'admin' with password '123' (ii) Give user admin full access to employee table.	A		
	e)	Demonstrate transitive dependency? Give an example?	A		
	f)	Write a PL/SQL code that accepts 3 numbers from user and display largest number.	A		
Q.6		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Explain ACID properties of transaction.	U		
	b)	Create curser emp_copy to select all records from employee table and copy them into employee2 table.	A		
	c)	Compare BCNF and 3NF.	U		
	d)	Write PL/SQL code using user defined exception for following scenario. If salary of employee is greater than 20,000 after giving raise by 20% then raise exception stating "Salary too high".	A		
	e)	Explain with example stored procedure.	U		
	f)	Explain two phase locking protocol with example.	U		

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**GOVERNMENT POLYTECHNIC, KOLHAPUR – 416004.**

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**WINTER/SUMMER-**

**EXAM SEAT NO.**

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LEVEL : - FOURTH

PROGRAM : INFORMATION TECHNOLOGY

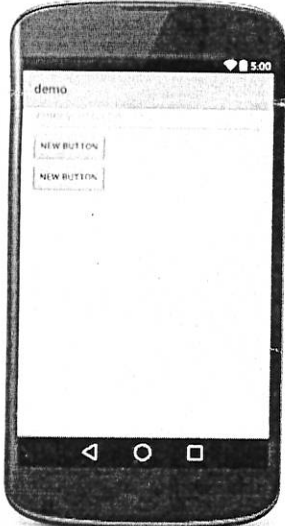
COURSE CODE :- ITG406

COURSE NAME :- MOBILE APPLICATION DEVELOPMENT

MAX. MARKS : 80 TIME : 03 Hrs DATE : 02/12/2023

Instruction :-

- 1) Answers of two sections must be written in separate section answer book provided.
- 2) Illustrate your answers with sketches wherever necessary.
- 3) Use of non-programmable pocket calculator is permissible.
- 4) Mathematical and other tables shall be made available on request.
- 5) Assume and mention suitable additional data if necessary.
- 6) Use of Mobile is strictly prohibited.
- 7) QN- Question No., SQN-Sub Question No. R- Remembering, U- Understanding, A- Application.

QN	S Q N	SECTION - I	R/ U/ A	Co ITG 406	Ma rks
Q.1		Attempt any <b>FOUR:</b>			<b>08</b>
	a)	Define Open Handset Alliance.	R	1	
	b)	List different types of OS.	R	2	
	c)	State use of jdk.	U	2	
	d)	Define Activities.	R	3	
	e)	Draw android directory structure.	U	3	
	f)	Write structure of activity_main.xml.	A	3	
Q.2		Attempt any <b>FOUR:</b>			<b>16</b>
	a)	Explain different versions of android.	R	1	
	b)	Describe android eco system.	U	1	
	c)	Explain android development tools.	U	2	
	d)	Explain how to create and manage virtual devices.	A	2	
	e)	Describe manifest.xml with all tags and its uses.	U	3	
	f)	Compare toggle button and radio button.	U	3	
Q.3		Attempt any <b>FOUR:</b>			<b>16</b>
	a)	List and explain need of android.	R	1	
	b)	Describe features of android.	U	1	
	c)	Explain role of Dalvik virtual machine with diagram.	U	2	
	d)	Explain steps to install and configure android studio.	A	2	
	e)	Explain Linear layout with example.	A	3	
	f)	Create android code for following layout: 			

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**WINTER/SUMMER-**

**EXAM SEAT NO.**

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LEVEL : - FOURTH

PROGRAM : INFORMATION TECHNOLOGY

COURSE CODE :- ITG406

COURSE NAME :- MOBILE APPLICATION DEVELOPMENT

MAX. MARKS : 80 TIME : 03 Hrs DATE : 02/12/2023

QN	S Q N	SECTION –II	R/ U/ A	Co ITG4 06	Ma rks
Q.4		Attempt any <b>FOUR</b> :			<b>08</b>
	a)	List any four attributes of AutoComplete Textview.	R	4	
	b)	Define Intent.	R	5	
	c)	State use of <action> tag in intent filter.	U	5	
	d)	List classes of SMS telephony.	R	6	
	e)	How to get API key from Google Cloud Platform.	A	6	
	f)	List methods used for zoom controls.	U	6	
Q.5		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Write code to set image for ImageButton.	A	4	
	b)	Compare ListView & GridView.	U	4	
	c)	Draw and explain android activity lifecycle.	U	5	
	d)	Explain use of Broadcast receivers with example.	A	5	
	e)	Describe types of Google Map.	U	6	
	f)	Explain Geocode & Reverse Geocoding.	U	6	
Q.6		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Write application to pick up date from Datepicker.	A	4	
	b)	Write application to display simple toast alert.	A	4	
	c)	Explain content provider methods.	U	5	
	d)	Explain architecture of multimedia framework.	U	5	
	e)	Describe Google map methods.	U	6	
	f)	Write steps to publish Android App on playstore.	A	6	

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**GOVERNMENT POLYTECHNIC, KOLHAPUR – 416004.**

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**WINTER/SUMMER-****EXAM SEAT NO.**

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LEVEL : - FOURTH

PROGRAM : INFORMATION TECHNOLOGY


COURSE CODE :- ITG406

COURSE NAME :- MOBILE APPLICATION DEVELOPMENT

MAX. MARKS : 80 TIME : 03 Hrs DATE : 02/12/2023

Instruction :-

- 1) Answers of two sections must be written in separate section answer book provided.
- 2) Illustrate your answers with sketches wherever necessary.
- 3) Use of non-programmable pocket calculator is permissible.
- 4) Mathematical and other tables shall be made available on request.
- 5) Assume and mention suitable additional data if necessary.
- 6) Use of Mobile is strictly prohibited.
- 7) QN- Question No., SQN-Sub Question No. R- Remembering, U- Understanding, A- Application.

QN	S Q N	SECTION -I	R/ U/ A	Co ITG 406	Ma rks
Q.1		Attempt any <b>FOUR</b> :			<b>08</b>
	a)	Define Open Handset Alliance.	R	1	
	b)	List different types of OS.	R	2	
	c)	State use of jdk.	U	2	
	d)	Define Activities.	R	3	
	e)	Draw android directory structure.	U	3	
	f)	Write structure of activity_main.xml.	A	3	
Q.2		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Explain different versions of android.	R	1	
	b)	Describe android eco system.	U	1	
	c)	Explain android development tools.	U	2	
	d)	Explain how to create and manage virtual devices.	A	2	
	e)	Describe manifest.xml with all tags and its uses.	U	3	
	f)	Compare toggle button and radio button.	U	3	
Q.3		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	List and explain need of android.	R	1	
	b)	Describe features of android.	U	1	
	c)	Explain role of Dalvik virtual machine with diagram.	U	2	
	d)	Explain steps to install and configure android studio.	A	2	
	e)	Explain Linear layout with example.	A	3	
	f)	Create android code for following layout:  			

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**WINTER/SUMMER-**

**EXAM SEAT NO.**

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LEVEL : - FOURTH

PROGRAM : INFORMATION TECHNOLOGY

COURSE CODE :- ITG406

COURSE NAME :- MOBILE APPLICATION DEVELOPMENT

MAX. MARKS : 80 TIME : 03 Hrs DATE : 02/12/2023

QN	S Q N	SECTION –II	R/ U/ A	Co ITG4 06	Ma rks
Q.4		Attempt any <b>FOUR:</b>			<b>08</b>
	a)	List any four attributes of AutoComplete Textview.	R	4	
	b)	Define Intent.	R	5	
	c)	State use of <action> tag in intent filter.	U	5	
	d)	List classes of SMS telephony.	R	6	
	e)	How to get API key from Google Cloud Platform.	A	6	
	f)	List methods used for zoom controls.	U	6	
Q.5		Attempt any <b>FOUR:</b>			<b>16</b>
	a)	Write code to set image for ImageButton.	A	4	
	b)	Compare ListView & GridView.	U	4	
	c)	Draw and explain android activity lifecycle.	U	5	
	d)	Explain use of Broadcast receivers with example.	A	5	
	e)	Describe types of Google Map.	U	6	
	f)	Explain Geocode & Reverse Geocoding.	U	6	
Q.6		Attempt any <b>FOUR:</b>			<b>16</b>
	a)	Write application to pick up date from Datepicker.	A	4	
	b)	Write application to display simple toast alert.	A	4	
	c)	Explain content provider methods.	U	5	
	d)	Explain architecture of multimedia framework.	U	5	
	e)	Describe Google map methods.	U	6	
	f)	Write steps to publish Android App on playstore.	A	6	

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**GOVERNMENT POLYTECHNIC, KOLHAPUR – 416004.**

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**SUMMER/WINTER-2022****EXAM SEAT NO.**

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LEVEL : - IV

PROGRAM : Information Technology

COURSE CODE :- ITG401

COURSE NAME :- NETWORK ADMINISTRATION

MAX. MARKS : 80 TIME : 03 Hrs DATE :-02/12/2023

Instruction :-

- 1) Answers of two sections must be written in separate section answer book provided.
- 2) Illustrate your answers with sketches wherever necessary.
- 3) Use of non-programmable pocket calculator is permissible.
- 4) Mathematical and other tables shall be made available on request.
- 5) Assume and mention suitable additional data if necessary.
- 6) Use of Mobile is strictly prohibited.
- 7) QN- Question No., SQN-Sub Question No. R- Remembering, U- Understanding, A- Application.

QN	S Q N	SECTION - I	R/ U/ A	Co	Ma rks
Q.1		Attempt any <b>FOUR</b> :			<b>08</b>
	a)	State different network speed for Ethernets	R	1	
	b)	State the use of ARP.	R	2	
	c)	Define Resolver.	R	2	
	d)	Draw the diagram of an enterprise network consisting of multiple LAN's.	A	1	
	e)	Define PQDN.	R	2	
	f)	List early phases of the internetworking design process.	R	1	
Q.2		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Illustrate the idea for designing home or small office network and explain which network protocol & network medium is selected for the design.	A	1	
	b)	Explain following processes. a) Mapping names to addresses. b) Mapping addresses to name.	U	2	
	c)	Describe recursive resolution with diagram.	U	2	
	d)	Write short note on BOOTP.	U	2	
	e)	Explain generic top level domains and inverse domain with neat diagram.	U	2	
	f)	Compare between IPV4 and IPV6.	A	2	
Q.3		Attempt any <b>Two</b>			<b>16</b>
	a)	Explain Header format in DNS messages.	U	2	
	b)	Draw & explain DHCP packet structure.	U	2	
	c)	Describe PSTN and ISDN with neat diagram.	U	1	

P.T.O.

# GOVERNMENT POLYTECHNIC, KOLHAPUR – 416004.

(An Autonomous Institute of Govt. Of Maharashtra)

SUMMER/WINTER-

EXAM SEAT NO.

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LEVEL :- IV **ITG 401**

PROGRAM: **Information Technology**

COURSE CODE :- 401

COURSE NAME :- Network Administration

MAX. MARKS : 80 TIME : 03 Hrs DATE :- 02/12/2023

Instruction :-

- 1) Answers of two sections must be written in separate section answer book provided.
- 2) Illustrate your answers with sketches wherever necessary.
- 3) Use of non-programmable pocket calculator is permissible.
- 4) Mathematical and other tables shall be made available on request.
- 5) Assume and mention suitable additional data if necessary.
- 6) Use of Mobile is strictly prohibited.
- 7) QN- Question No., SQN-Sub Question No. R- Remembering, U- Understanding, A- Application.

QN	S Q N	SECTION –II	R/ U/ A	Co ITG401	Ma rks
Q.4		Attempt any <b>FOUR</b> :			<b>08</b>
	a)	Define active directory	R	3	
	b)	Enlist hardware backup devices.	R	4	
	c)	Define virus	R	4	
	d)	Illustrate firewall with a diagram.	U	5	
	e)	State the need of IP Security.	R	5	
	f)	Identify the protocol which can be used for achieving confidentiality in virtual private network.	A	5	
Q.5		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Explain Active Directory Architecture in detail.	U	3	
	b)	Write any four types of virus and how they effect on computer system	A	4	
	c)	Describe Domain, Trees and Forests concepts in Active directory	U	3	
	d)	Differentiate between Driver Updates and Software Upgrades	U	4	
	e)	Write how replay attack occurs and how to deal with replay attacks	U	5	
	f)	Draw and explain encapsulating security payload protocol	U	5	
Q.6		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	With the help of example explain 1. Canonical notation      2. LDAP notation	U	3	
	b)	Describe the concept of Global Catalog Server in Active directory	U	3	
	c)	Explain VPN Architecture	U	5	
	d)	Draw and explain authentication header format.	U	5	
	e)	Explain NET SESSION & NET Watcher	U	4	
	f)	Write a Procedure to take backup using external hardware	A	4	

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**GOVERNMENT POLYTECHNIC, KOLHAPUR – 416004.**

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**SUMMER/WINTER-2022****EXAM SEAT NO.**

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LEVEL :- IV

PROGRAM : Information Technology

COURSE CODE :- ITG401

COURSE NAME :- NETWORK ADMINISTRATION

MAX. MARKS : 80 TIME : 03 Hrs DATE :-02/12/2023

Instruction :-

- 1) Answers of two sections must be written in separate section answer book provided.
- 2) Illustrate your answers with sketches wherever necessary.
- 3) Use of non-programmable pocket calculator is permissible.
- 4) Mathematical and other tables shall be made available on request.
- 5) Assume and mention suitable additional data if necessary.
- 6) Use of Mobile is strictly prohibited.
- 7) QN- Question No., SQN-Sub Question No. R- Remembering, U- Understanding, A- Application.

QN	S Q N	SECTION -I	R/ U/ A	Co	Ma rks
Q.1		Attempt any <b>FOUR</b> :			<b>08</b>
	a)	State different network speed for Ethernets	R	1	
	b)	State the use of ARP.	R	2	
	c)	Define Resolver.	R	2	
	d)	Draw the diagram of an enterprise network consisting of multiple LAN's.	A	1	
	e)	Define PQDN.	R	2	
	f)	List early phases of the internetworking design process.	R	1	
Q.2		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Illustrate the idea for designing home or small office network and explain which network protocol & network medium is selected for the design.	A	1	
	b)	Explain following processes. a) Mapping names to addresses. b) Mapping addresses to name.	U	2	
	c)	Describe recursive resolution with diagram.	U	2	
	d)	Write short note on BOOTP.	U	2	
	e)	Explain generic top level domains and inverse domain with neat diagram.	U	2	
	f)	Compare between IPV4 and IPV6.	A	2	
Q.3		Attempt any <b>Two</b>			<b>16</b>
	a)	Explain Header format in DNS messages.	U	2	
	b)	Draw & explain DHCP packet structure.	U	2	
	c)	Describe PSTN and ISDN with neat diagram.	U	1	

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# GOVERNMENT POLYTECHNIC, KOLHAPUR – 416004.

(An Autonomous Institute of Govt. Of Maharashtra)

SUMMER/WINTER-

EXAM SEAT NO.

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LEVEL :- IV **ITG 401**

PROGRAM: **Information Technology**

COURSE CODE :- 401

COURSE NAME :- Network Administration

MAX. MARKS : 80 TIME : 03 Hrs DATE :- 02/12/2023

Instruction :-

- 1) Answers of two sections must be written in separate section answer book provided.
- 2) Illustrate your answers with sketches wherever necessary.
- 3) Use of non-programmable pocket calculator is permissible.
- 4) Mathematical and other tables shall be made available on request.
- 5) Assume and mention suitable additional data if necessary.
- 6) Use of Mobile is strictly prohibited.
- 7) QN- Question No., SQN-Sub Question No. R- Remembering, U- Understanding, A- Application.

QN	S Q N	SECTION –II	R/ U/ A	Co ITG401	Ma rks
Q.4		Attempt any <b>FOUR</b> :			<b>08</b>
	a)	Define active directory	R	3	
	b)	Enlist hardware backup devices.	R	4	
	c)	Define virus	R	4	
	d)	Illustrate firewall with a diagram.	U	5	
	e)	State the need of IP Security.	R	5	
	f)	Identify the protocol which can be used for achieving confidentiality in virtual private network.	A	5	
Q.5		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Explain Active Directory Architecture in detail.	U	3	
	b)	Write any four types of virus and how they effect on computer system	A	4	
	c)	Describe Domain, Trees and Forests concepts in Active directory	U	3	
	d)	Differentiate between Driver Updates and Software Upgrades	U	4	
	e)	Write how replay attack occurs and how to deal with replay attacks	U	5	
	f)	Draw and explain encapsulating security payload protocol	U	5	
Q.6		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	With the help of example explain 1. Canonical notation      2. LDAP notation	U	3	
	b)	Describe the concept of Global Catalog Server in Active directory	U	3	
	c)	Explain VPN Architecture	U	5	
	d)	Draw and explain authentication header format.	U	5	
	e)	Explain NET SESSION & NET Watcher	U	4	
	f)	Write a Procedure to take backup using external hardware	A	4	

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**GOVERNMENT POLYTECHNIC, KOLHAPUR – 416004.**

(An Autonomous Institute of Govt. Of Maharashtra)

**ODD TERM END EXAM WINTER -2023****EXAM SEAT NO.**

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LEVEL :- **THIRD**PROGRAM : **INFORMATION TECHNOLOGY**COURSE CODE :- **ITG306**COURSE NAME **COMPUTER NETWORK**MAX. MARKS : **80** TIME : **03Hrs.**DATE :- **04/12/2023**

Instruction :-

- 1) Answers must be written in the main answer book provided.( and supplements if required)
- 2) Illustrate your answers with sketches wherever necessary.
- 3) Use of non-programmable pocket calculator is permissible.
- 4) Mathematical and other tables shall be made available on request.
- 5) Assume and mention suitable additional data if necessary.
- 6) Use of Mobile is strictly prohibited.
- 7) QN- Question No., SQN-Sub Question No. R- Remembering, U- Understanding, A- Application.

QN	S Q N	Question Text	R/ U/ A	Co ITG 306	Mar ks
Q.1		Attempt any <b>FOUR</b> :			<b>08</b>
	a)	Define active network.	R	1	
	b)	What is point- to- point network?	A	1	
	c)	Enlist different network devices.	R	2	
	d)	Draw OSI reference model.	R	2	
	e)	Define LAN with diagram.	U	1	
	f)	State working of Repeater.	U	2	
Q.2		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Explain in brief Random Access Aloha.	U	3	
	b)	Draw and explain TCP/IP model.	R	2	
	c)	Describe client server network architecture with diagram.	U	1	
	d)	Compare OSI model with TCP/IP model.	A	2	
	e)	Explain in brief network services.	R	1	
	f)	Describe star topology in detail.	U	1	
Q.3		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Compare centralized computing with decentralized computing.	A	1	
	b)	Explain co-axial cable with diagram.	U	1	
	c)	Explain in brief i) Physical addresses ii) Logical addresses iii) Port addresses iv) Specific addresses.	R	2	
	d)	Describe carrier sense multiple access with collision detection.	A	3	
	e)	Explain network criteria and enlist categories of network.	U	1	
	f)	Describe in brief CSMA/CA.	A	3	

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**GOVERNMENT POLYTECHNIC, KOLHAPUR – 416004.**

(An Autonomous Institute of Govt. Of Maharashtra)

**WINTER/SUMMER- 2023****EXAM SEAT NO.**

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LEVEL: - **THIRD**PROGRAM: **INFORMATION TECHNOLOGY**COURSE CODE: - **ITG306**COURSE NAME: - **COMPUTER NETWORK**MAX. MARKS : **80** TIME : **03 Hrs** DATE :-**04/12/2023**

QN	S Q N	Question Text	R/ U / A	Co	Ma rks
Q.4		Attempt any <b>FOUR</b> :			<b>08</b>
	a)	Write uses of Bluetooth.	R	ITG306-4	
	b)	Enlist categories of Standard Ethernet.	R	ITG306-4	
	c)	State net id and host id.	R	ITG306-5	
	d)	State classful addressing.	U	ITG306-5	
	e)	State use of POP3 protocol.	R	ITG306-6	
	f)	Enlist commands in SNMP.	R	ITG306-6	
Q.5		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Explain IEEE 802.11 architecture	U	ITG306-4	
	b)	Illustrate Ethernet implementation 10 base 2 and 10 base 5	U	ITG306-4	
	c)	Write an algorithm TCP socket client server communication.	A	ITG306-5	
	d)	Explain bridge ethernet and switched ethernet	U	ITG306-5	
	e)	Compare SMTP and MIME.	A	ITG306-6	
	f)	Explain File Transfer Protocol	U	ITG306-6	
Q.6		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Draw & explain standard ethernet MAC-sublayer format.	U	ITG306-4	
	b)	Explain Bluetooth architecture.	U	ITG306-4	
	c)	Explain in brief socket and socket-based communication.	U	ITG306-5	
	d)	Compare TCP and UDP.	A	ITG306-5	
	e)	Describe Remote Logging.	A	ITG306-6	
	f)	Draw & explain architecture of Electronic mail.	U	ITG306-6	

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**GOVERNMENT POLYTECHNIC, KOLHAPUR – 416004.**

(An Autonomous Institute of Govt. Of Maharashtra)

**ODD TERM END EXAM WINTER -2023****EXAM SEAT NO.**

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LEVEL :- **THIRD**PROGRAM : **INFORMATION TECHNOLOGY**COURSE CODE :- **ITG306**COURSE NAME **COMPUTER NETWORK**MAX. MARKS : **80** TIME : **03Hrs.**DATE :- **04/12/2023**

Instruction :-

- 1) Answers must be written in the main answer book provided.( and supplements if required)
- 2) Illustrate your answers with sketches wherever necessary.
- 3) Use of non-programmable pocket calculator is permissible.
- 4) Mathematical and other tables shall be made available on request.
- 5) Assume and mention suitable additional data if necessary.
- 6) Use of Mobile is strictly prohibited.
- 7) QN- Question No., SQN-Sub Question No. R- Remembering, U- Understanding, A- Application.

QN	S Q N	Question Text	R/ U/ A	Co ITG 306	Mar ks
Q.1		Attempt any <b>FOUR</b> :			<b>08</b>
	a)	Define active network.	R	1	
	b)	What is point- to- point network?	A	1	
	c)	Enlist different network devices.	R	2	
	d)	Draw OSI reference model.	R	2	
	e)	Define LAN with diagram.	U	1	
	f)	State working of Repeater.	U	2	
Q.2		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Explain in brief Random Access Aloha.	U	3	
	b)	Draw and explain TCP/IP model.	R	2	
	c)	Describe client server network architecture with diagram.	U	1	
	d)	Compare OSI model with TCP/IP model.	A	2	
	e)	Explain in brief network services.	R	1	
	f)	Describe star topology in detail.	U	1	
Q.3		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Compare centralized computing with decentralized computing.	A	1	
	b)	Explain co-axial cable with diagram.	U	1	
	c)	Explain in brief i) Physical addresses ii) Logical addresses iii) Port addresses iv) Specific addresses.	R	2	
	d)	Describe carrier sense multiple access with collision detection.	A	3	
	e)	Explain network criteria and enlist categories of network.	U	1	
	f)	Describe in brief CSMA/CA.	A	3	

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**WINTER/SUMMER- 2023****EXAM SEAT NO.**

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LEVEL: - **THIRD**PROGRAM: **INFORMATION TECHNOLOGY**COURSE CODE: - **ITG306**COURSE NAME: - **COMPUTER NETWORK**MAX. MARKS : **80** TIME : **03 Hrs** DATE :-**04/12/2023**

QN	S Q N	Question Text	R/ U / A	Co	Ma rks
Q.4		Attempt any <b>FOUR</b> :			<b>08</b>
	a)	Write uses of Bluetooth.	R	ITG306-4	
	b)	Enlist categories of Standard Ethernet.	R	ITG306-4	
	c)	State net id and host id.	R	ITG306-5	
	d)	State classful addressing.	U	ITG306-5	
	e)	State use of POP3 protocol.	R	ITG306-6	
	f)	Enlist commands in SNMP.	R	ITG306-6	
Q.5		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Explain IEEE 802.11 architecture	U	ITG306-4	
	b)	Illustrate Ethernet implementation 10 base 2 and 10 base 5	U	ITG306-4	
	c)	Write an algorithm TCP socket client server communication.	A	ITG306-5	
	d)	Explain bridge ethernet and switched ethernet	U	ITG306-5	
	e)	Compare SMTP and MIME.	A	ITG306-6	
	f)	Explain File Transfer Protocol	U	ITG306-6	
Q.6		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Draw & explain standard ethernet MAC-sublayer format.	U	ITG306-4	
	b)	Explain Bluetooth architecture.	U	ITG306-4	
	c)	Explain in brief socket and socket-based communication.	U	ITG306-5	
	d)	Compare TCP and UDP.	A	ITG306-5	
	e)	Describe Remote Logging.	A	ITG306-6	
	f)	Draw & explain architecture of Electronic mail.	U	ITG306-6	

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(An Autonomous Institute of Govt. of Maharashtra)

**WINTER / SUMMER-2023**

**EXAM SEAT NO.**

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LEVEL: - 03

PROGRAM: Information Technology

COURSE CODE: - ITG302

COURSE NAME: - Digital Electronics and Microprocessor

MAX. MARKS: 80 TIME: 03 Hrs

DATE: 04/12/2023

Instruction:-

- 1) Answers of two sections must be written in separate section answer book provided.
- 2) Illustrate your answers with sketches wherever necessary.
- 3) Use of non-programmable pocket calculator is permissible.
- 4) Assume and mention suitable additional data if necessary.
- 5) Use of Mobile is strictly prohibited.
- 6) QN- Question No., SQN-Sub Question No. R- Remembering, U- Understanding, A- Application.

QN	S Q N	SECTION - I	R/ U/ A	Co	Ma rks
Q.1		Attempt any <b>FOUR</b> :		ITG30 2-	<b>08</b>
	a)	Covert $(16A)_{16} = (?)_8 = (?)_2$	A	1	
	b)	Draw symbol and truth table of EXNOR and NAND logic gate.	R	1	
	c)	State principle of Demultiplexer and mention it's two types.	R	2	
	d)	Define Minterms & Maxterms with example.	R	2	
	e)	Convert following equation to canonical SOP: $Y = (A+B\bar{C})$	A	2	
	f)	Identify the logic circuit and give proper labeling to inputs A and B  <div style="text-align: center;"> </div>	A	3	
Q.2		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Perform binary subtraction using 2's complement method. $(11101 - 10011)$	A	1	
	b)	Draw equivalent circuit of following gates using NOR gates 1) AND gate 2) OR gate	R	1	
	c)	For logical expression given below draw K-map and simplify the example $Y = \sum m(1,5,7,9,11,13,15)$	U	2	
	d)	Design Half adder using K-map.	A	2	
	e)	Compare Combinational logic circuit and Sequential logic circuit	U	3	
	f)	Draw logic circuit of 3 bit up counter and it's truth table.	A	3	
Q.3		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Perform BCD addition $(95)_{10} + (87)_{10}$	A	1	
	b)	State and prove De-Morgan's theorems	U	1	
	c)	Design 4 bit binary to gray code converter	A	2	
	d)	Draw the block diagram, truth table, logical diagram and output equation for 3 line to 8 line decoder	U	2	
	e)	Explain different triggering methods.	U	3	
	f)	Draw logic diagram of JK flip flop and write it's truth table.	A	3	

**GOVERNMENT POLYTECHNIC, KOLHAPUR – 416004.**

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**WINTER/SUMMER- 2023****EXAM SEAT NO.**

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LEVEL :- 3

PROGRAM : Information Technology

COURSE CODE :- ITG 302

COURSE NAME :- Digital Electronics and Microprocessor

MAX. MARKS : 80 TIME : 03 Hrs DATE :- 04/12/23

QN	S Q N	SECTION -II	R/ U/ A	Co	Ma rks
Q.4		Attempt any <b>FOUR</b> :			<b>08</b>
	a)	Compare CISC and RISC processors (any 2 points)	R	4	
	b)	State the meaning of pipelining.	R	4	
	c)	State two operating modes of 8086 and state the difference between them.	R	4	
	d)	State salient features of 8086 (any 4)	R	4	
	e)	State the difference between machine language and assembly language.	R	5	
	f)	Write any two logical instructions with proper syntax and state their meaning.	R	5	
Q.5		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Explain register organization of 8086 microprocessor.	U	4	
	b)	Explain the concept of memory segmentation in 8086.	U	4	
	c)	Draw timing diagram of memory write operation for minimum mode configuration.	U	4	
	d)	Explain any 4 addressing modes of 8086 with example.	U	5	
	e)	Write the instructions for following operations. 1. Transfer 16 bit number from memory to register AX 2. Compare two 16 bit numbers, one is in AX and other is in memory location 3. Signed multiplication of 16 bit word and a byte from memory location 4. Addition of two 16 bit numbers with previous carry, number one is in BX and number two is at memory location.	U + A	5	
	f)	Write ALP to add series of 16 bit numbers.	A	5	
Q.6		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	If CS contains F820H and IP contains 1802H, calculate physical address generated by processor during execution of program.	A	4	
	b)	i) Which flags are affected after execution of CMP instruction. ii) What will be the content of AL after execution of following instructions  MOV AL, 72H MOV BL, 28H ADD AL, BL DAA	A	4,5	
	c)	Write ALP to find largest number from two 16-bit numbers.	A	5	
	d)	Write ALP for the division of two 16-bit signed numbers.	A	5	
	e)	Write ALP to multiply two 16-bit numbers.	A	5	
	f)	Write ALP for the addition of two 16-bit numbers. SUM = 32 bits.	A	5	

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**EXAM SEAT NO.**

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LEVEL: - 03

PROGRAM: Information Technology

COURSE CODE: - ITG302

COURSE NAME: - Digital Electronics and Microprocessor

MAX. MARKS: 80 TIME: 03 Hrs

DATE: 04/12/2023

Instruction:-

- 1) Answers of two sections must be written in separate section answer book provided.
- 2) Illustrate your answers with sketches wherever necessary.
- 3) Use of non-programmable pocket calculator is permissible.
- 4) Assume and mention suitable additional data if necessary.
- 5) Use of Mobile is strictly prohibited.
- 6) QN- Question No., SQN-Sub Question No. R- Remembering, U- Understanding, A- Application.

QN	S Q N	SECTION - I	R/ U/ A	Co	Ma rks
Q.1		Attempt any <b>FOUR</b> :		ITG30 2-	<b>08</b>
	a)	Covert $(16A)_{16} = (?)_8 = (?)_2$	A	1	
	b)	Draw symbol and truth table of EXNOR and NAND logic gate.	R	1	
	c)	State principle of Demultiplexer and mention it's two types.	R	2	
	d)	Define Minterms & Maxterms with example.	R	2	
	e)	Convert following equation to canonical SOP: $Y = (A+B\bar{C})$	A	2	
	f)	Identify the logic circuit and give proper labeling to inputs A and B	A	3	
Q.2		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Perform binary subtraction using 2's complement method. $(11101 - 10011)$	A	1	
	b)	Draw equivalent circuit of following gates using NOR gates 1) AND gate 2) OR gate	R	1	
	c)	For logical expression given below draw K-map and simplify the example $Y = \sum m(1,5,7,9,11,13,15)$	U	2	
	d)	Design Half adder using K-map.	A	2	
	e)	Compare Combinational logic circuit and Sequential logic circuit	U	3	
	f)	Draw logic circuit of 3 bit up counter and it's truth table.	A	3	
Q.3		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Perform BCD addition $(95)_{10} + (87)_{10}$	A	1	
	b)	State and prove De-Morgan's theorems	U	1	
	c)	Design 4 bit binary to gray code converter	A	2	
	d)	Draw the block diagram, truth table, logical diagram and output equation for 3 line to 8 line decoder	U	2	
	e)	Explain different triggering methods.	U	3	
	f)	Draw logic diagram of JK flip flop and write it's truth table.	A	3	

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**WINTER/SUMMER- 2023****EXAM SEAT NO.**

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LEVEL : - 3

PROGRAM : Information Technology

COURSE CODE :- ITG 302

COURSE NAME :- Digital Electronics and Microprocessor

MAX. MARKS : 80 TIME : 03 Hrs DATE :-04/12/ 23

QN	S Q N	SECTION –II	R/ U/ A	Co	Ma rks
Q.4		Attempt any <b>FOUR</b> :			<b>08</b>
	a)	Compare CISC and RISC processors (any 2 points)	R	4	
	b)	State the meaning of pipelining.	R	4	
	c)	State two operating modes of 8086 and state the difference between them.	R	4	
	d)	State salient features of 8086 (any 4)	R	4	
	e)	State the difference between machine language and assembly language.	R	5	
	f)	Write any two logical instructions with proper syntax and state their meaning.	R	5	
Q.5		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Explain register organization of 8086 microprocessor.	U	4	
	b)	Explain the concept of memory segmentation in 8086.	U	4	
	c)	Draw timing diagram of memory write operation for minimum mode configuration.	U	4	
	d)	Explain any 4 addressing modes of 8086 with example.	U	5	
	e)	Write the instructions for following operations. 1. Transfer 16 bit number from memory to register AX 2. Compare two 16 bit numbers, one is in AX and other is in memory location 3. Signed multiplication of 16 bit word and a byte from memory location 4. Addition of two 16 bit numbers with previous carry, number one is in BX and number two is at memory location.	U + A	5	
	f)	Write ALP to add series of 16 bit numbers.	A	5	
Q.6		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	If CS contains F820H and IP contains 1802H, calculate physical address generated by processor during execution of program.	A	4	
	b)	i) Which flags are affected after execution of CMP instruction. ii) What will be the content of AL after execution of following instructions  MOV AL, 72H MOV BL, 28H ADD AL, BL DAA	A	4,5	
	c)	Write ALP to find largest number from two 16-bit numbers.	A	5	
	d)	Write ALP for the division of two 16-bit signed numbers.	A	5	
	e)	Write ALP to multiply two 16-bit numbers.	A	5	
	f)	Write ALP for the addition of two 16-bit numbers. SUM = 32 bits.	A	5	

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WINTER/SUMMER- 2023

EXAM SEAT NO.

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LEVEL :- 5

PROGRAM : INFORMATION TECHNOLOGY

COURSE CODE :- ITG510

COURSE NAME :- LINUX ADMINISTRATION

MAX. MARKS : 80 TIME : 03 Hrs DATE : 05/12/2023

Instruction :-

- 1) Answers of two sections must be written in separate section answer book provided.
- 2) Illustrate your answers with sketches wherever necessary.
- 3) Use of non-programmable pocket calculator is permissible.
- 4) Mathematical and other tables shall be made available on request.
- 5) Assume and mention suitable additional data if necessary.
- 6) Use of Mobile is strictly prohibited.
- 7) QN- Question No., SQN-Sub Question No. R- Remembering, U- Understanding, A- Application.

QN	S Q N	SECTION - I	R/ U/ A	Co	Ma rks
Q.1		Attempt any <b>FOUR</b> :			<b>08</b>
	a)	List types of partitioning.	R	ITG510-1	
	b)	State any two key commands used in vi editor.	R	ITG510-2	
	c)	State sleep command syntax with example.	U	ITG510-2	
	d)	Write syntax of while control structure in Linux shell script.	R	ITG510-3	
	e)	Define shell. Enlist types of shells.	R	ITG510-3	
	f)	State the syntax, use of echo command with example.	A	ITG510-3	
Q.2		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Explain the process of starting and shutting down linux.	U	ITG510-1	
	b)	Explain different file formats in linux.	R	ITG510-1	
	c)	Describe print related commands with, syntax, option and example.	U	ITG510-2	
	d)	Explain the ls and more command with syntax, options and examples.	U	ITG510-2	
	e)	Explain predefine shell variables.	U	ITG510-3	
	f)	Define shell script? How shell programs are executed. Write note on read statement.	A	ITG510-3	
Q.3		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Compare between linux and window os.(Any 4)	U	ITG510-1	
	b)	Explain the hierarchical file system with a diagram.	R	ITG510-1	
	c)	Explain file processing commands with syntax and example. i)wc ii) cut	R	ITG510-2	
	d)	How can we search the pattern of string in the file? Write the proper command syntax, options and examples.	A	ITG510-2	
	e)	Write a shell script that to print numbers in reverse order.	A	ITG510-3	
	f)	Compare between different types of Shell.	U	ITG510-3	

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**WINTER/SUMMER- 2023**

**EXAM SEAT NO.**

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LEVEL :- FIFTH

PROGRAM : INFORMATION TECHNOLOGY

COURSE CODE :- ITG510

COURSE NAME :- LINUX ADMINISTRATION

MAX. MARKS : 80 TIME : 03 Hrs DATE :-05 /12/23

QN	S Q N	SECTION –II	R/ U/ A	Co ITG5 10	Ma rks
Q.4		Attempt any <b>FOUR</b> :			<b>08</b>
	a)	State use of su command with example.	U	4	
	b)	State how to check system information with command.	R	4	
	c)	Define init daemon.	R	5	
	d)	State use of NIS server.	U	5	
	e)	Write steps to create FTP users.	A	5	
	f)	List types of DNS records.	R	5	
Q.5		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Explain role of administrator.	R	4	
	b)	Describe how to change permissions of file with example.	U	4	
	c)	Compare df and du command.	U	4	
	d)	Describe working with FTP server.	U	5	
	e)	Explain configuring DHCP client and server.	A	5	
	f)	Explain uses NFS server with example.	R	5	
Q.6		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	List and explain reasons of taking backups.	U	4	
	b)	Explain tar command with its options.	R	4	
	c)	Describe disk management with RAID.	R	4	
	d)	Explain DNS tool box.	U	5	
	e)	Explain installation of Apache web server.	A	5	
	f)	Describe different run levels of servers.	R	5	

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EXAM SEAT NO.

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LEVEL :- 5

PROGRAM : INFORMATION TECHNOLOGY

COURSE CODE :- ITG510

COURSE NAME :- LINUX ADMINISTRATION

MAX. MARKS : 80 TIME : 03 Hrs DATE : 05/12/2023

Instruction :-

- 1) Answers of two sections must be written in separate section answer book provided.
- 2) Illustrate your answers with sketches wherever necessary.
- 3) Use of non-programmable pocket calculator is permissible.
- 4) Mathematical and other tables shall be made available on request.
- 5) Assume and mention suitable additional data if necessary.
- 6) Use of Mobile is strictly prohibited.
- 7) QN- Question No., SQN-Sub Question No. R- Remembering, U- Understanding, A- Application.

QN	S Q N	SECTION - I	R/ U/ A	Co	Ma rks
Q.1		Attempt any <b>FOUR</b> :			<b>08</b>
	a)	List types of partitioning.	R	ITG510-1	
	b)	State any two key commands used in vi editor.	R	ITG510-2	
	c)	State sleep command syntax with example.	U	ITG510-2	
	d)	Write syntax of while control structure in Linux shell script.	R	ITG510-3	
	e)	Define shell. Enlist types of shells.	R	ITG510-3	
	f)	State the syntax, use of echo command with example.	A	ITG510-3	
Q.2		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Explain the process of starting and shutting down linux.	U	ITG510-1	
	b)	Explain different file formats in linux.	R	ITG510-1	
	c)	Describe print related commands with, syntax, option and example.	U	ITG510-2	
	d)	Explain the ls and more command with syntax, options and examples.	U	ITG510-2	
	e)	Explain predefine shell variables.	U	ITG510-3	
	f)	Define shell script? How shell programs are executed. Write note on read statement.	A	ITG510-3	
Q.3		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Compare between linux and window os.(Any 4)	U	ITG510-1	
	b)	Explain the hierarchical file system with a diagram.	R	ITG510-1	
	c)	Explain file processing commands with syntax and example. i)wc ii) cut	R	ITG510-2	
	d)	How can we search the pattern of string in the file? Write the proper command syntax, options and examples.	A	ITG510-2	
	e)	Write a shell script that to print numbers in reverse order.	A	ITG510-3	
	f)	Compare between different types of Shell.	U	ITG510-3	

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WINTER/SUMMER-2023

EXAM SEAT NO.

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LEVEL :- FIFTH

PROGRAM : INFORMATION TECHNOLOGY

COURSE CODE :- ITG510

COURSE NAME :- LINUX ADMINISTRATION

MAX. MARKS : 80 TIME : 03 Hrs DATE :-05/12/23

QN	S Q N	SECTION –II	R/ U/ A	Co ITG5 10	Ma rks
Q.4		Attempt any <b>FOUR</b> :			<b>08</b>
	a)	State use of su command with example.	U	4	
	b)	State how to check system information with command.	R	4	
	c)	Define init daemon.	R	5	
	d)	State use of NIS server.	U	5	
	e)	Write steps to create FTP users.	A	5	
	f)	List types of DNS records.	R	5	
Q.5		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Explain role of administrator.	R	4	
	b)	Describe how to change permissions of file with example.	U	4	
	c)	Compare df and du command.	U	4	
	d)	Describe working with FTP server.	U	5	
	e)	Explain configuring DHCP client and server.	A	5	
	f)	Explain uses NFS server with example.	R	5	
Q.6		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	List and explain reasons of taking backups.	U	4	
	b)	Explain tar command with its options.	R	4	
	c)	Describe disk management with RAID.	R	4	
	d)	Explain DNS tool box.	U	5	
	e)	Explain installation of Apache web server.	A	5	
	f)	Describe different run levels of servers.	R	5	

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**WINTER- 2023**

**EXAM SEAT NO.**

LEVEL :- **IV**

PROGRAM : Information Technology

COURSE CODE :- ITG403

COURSE NAME :- INFORMATION SECURITY

MAX. MARKS : 80 TIME : 03 Hrs DATE :-05/12/2023

Instruction :-

- 1) Answers of two sections must be written in separate section answer book provided.
- 2) Illustrate your answers with sketches wherever necessary.
- 3) Use of non-programmable pocket calculator is permissible.
- 4) Mathematical and other tables shall be made available on request.
- 5) Assume and mention suitable additional data if necessary.
- 6) Use of Mobile is strictly prohibited,
- 7) QN- Question No., SQN-Sub Question No. R-Remembering. U- Understanding. A- Application.

QN	S Q N	SECTION - I	R/ U/ A	Co	Mar ks
Q.1		Attempt any <b>FOUR</b> :			08
	a)	Define i)Risk ii) Threat	R	1	
	b)	Write the purpose of Denial of service attack.	R	1	
	c)	State any two disadvantages of finger print biometric.	R	2	
	d)	Write use of access controls.	R	2	
	e)	Differentiate between identification and authentication (any two).	R	2	
	f)	Define i)Cryptanalysis ii)Cryptology	R	3	
Q.2		Attempt any <b>FOUR</b> :			16
	a)	Define viruses and explain phases of viruses.	R U	1	
	b)	Explain passive attack in detail.	U	1	
	c)	Describe the process of biometric authentication with neat diagram for finger print.	U	2	
	d)	Write how to make a strong password and from the following which password is more secure. i) 19thApril88 ii)Delhi88 iii) Cr@pp0rd iv)!password	A	2	
	e)	Explain steganography and write any two advantages of steganography.	R+U	3	
	f)	Convert following plain text into cipher text using rail fence technique. Plain text = 'Success is the sum of small efforts' Key = 4	A	3	
Q.3		Attempt any <b>FOUR</b> :			16
	a)	Write importance and need of information.	U	1	
	b)	Consider user A and user B are authorized user , user C is unauthorized user , Write what type of attack occurs in following situation. i) User A sends confidential message to user B and user C reads message. ii) User A sends confidential message to user B , user C changes contents of message after sender sends and user B receives changed message with the name of A.	A	1	
	c)	Explain following terms with respect to access control policies : i) DAC ii)RBAC	U	2	
	d)	Explain working of DES algorithm.	U	3	
	e)	Explain symmetric cipher model.	U	3	
	f)	Convert plain text into cipher text by using simple columnar technique, use 6 columns and read the plain text in given column order : 2, 6, 4, 3, 5, and 1. plain text: 'symmetric cryptography'	A	3	

P.T.O.

**GOVERNMENT POLYTECHNIC, KOLHAPUR – 416004.**

(An Autonomous Institute of Govt. Of Maharashtra)

**WINTER / SUMMER-23****EXAM SEAT NO.**

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LEVEL : - FOURTH

PROGRAM : INFORMATION TECHNOLOGY

COURSE CODE :- ITG403

COURSE NAME :- INFORMATION SECURITY

MAX. MARKS : 80 TIME : 03 Hrs

DATE :-05/12/2023

Instruction :-

- 1) Answers of two sections must be written in separate section answer book provided.
- 2) Illustrate your answers with sketches wherever necessary.
- 3) Use of non-programmable pocket calculator is permissible.
- 4) Mathematical and other tables shall be made available on request.
- 5) Assume and mention suitable additional data if necessary.
- 6) Use of Mobile is strictly prohibited.
- 7) QN- Question No., SQN-Sub Question No. R- Remembering, U- Understanding, A- Application.

QN	S Q N	SECTION -II	R/ U/ A	Co	Ma rks
Q.4		Attempt any <b>FOUR</b> :			<b>08</b>
	a)	State working of asymmetric key cryptography with neat diagram.	R	4	
	b)	Define SSL.	R	5	
	c)	Draw position of SSL in TCP/IP.	U	5	
	d)	State format of handshake protocol in SSL.	U	5	
	e)	Define password selection strategies.	A	6	
	f)	Define Intruders.	R	6	
Q.5		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Write RSA algorithm process.	R	4	
	b)	Compare symmetric key cryptography and asymmetric key cryptography.	U	4	
	c)	Explain record protocol of SSL.	U	5	
	d)	Explain Secure HTTP.	R	5	
	e)	Explain intrusion techniques with example.	U	6	
	f)	Explain how to protect password from internal and external sources.	R	6	
Q.6		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Explain main possible attacks on RSA.	U	4	
	b)	Explain working of digital signature with diagram.	U	4	
	c)	Explain alert protocol of SSL.	R	5	
	d)	Write policies and limitation of firewall.	U	5	
	e)	Explain types of malicious software.	R	6	
	f)	Explain distributed denial of services attack with example.	A	6	

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**GOVERNMENT POLYTECHNIC, KOLHAPUR – 416004.**  
(An Autonomous Institute of Govt. Of Maharashtra)

**WINTER- 2023**

**EXAM SEAT NO.**

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LEVEL :- **IV**

PROGRAM : Information Technology

COURSE CODE :- ITG403

COURSE NAME :- INFORMATION SECURITY

MAX. MARKS : 80 TIME : 03 Hrs DATE :-05/12/ 2023

Instruction :-

- 1) Answers of two sections must be written in separate section answer book provided.
- 2) Illustrate your answers with sketches wherever necessary.
- 3) Use of non-programmable pocket calculator is permissible.
- 4) Mathematical and other tables shall be made available on request.
- 5) Assume and mention suitable additional data if necessary.
- 6) Use of Mobile is strictly prohibited.
- 7) QN- Question No., SQN-Sub Question No. R- Remembering. U- Understanding. A- Application.

QN	S Q N	SECTION - I	R/ U/ A	Co	Mar ks
Q.1		Attempt any <b>FOUR</b> :			08
	a)	Define i)Risk ii) Threat	R	1	
	b)	Write the purpose of Denial of service attack.	R	1	
	c)	State any two disadvantages of finger print biometric.	R	2	
	d)	Write use of access controls.	R	2	
	e)	Differentiate between identification and authentication (any two).	R	2	
	f)	Define i)Cryptanalysis ii)Cryptology	R	3	
Q.2		Attempt any <b>FOUR</b> :			16
	a)	Define viruses and explain phases of viruses.	R U	1	
	b)	Explain passive attack in detail.	U	1	
	c)	Describe the process of biometric authentication with neat diagram for finger print.	U	2	
	d)	Write how to make a strong password and from the following which password is more secure. i) 19thApril88 ii)Delhi88 iii) Cr@pp0rd iv)!password	A	2	
	e)	Explain steganography and write any two advantages of steganography.	R+U	3	
	f)	Convert following plain text into cipher text using rail fence technique. Plain text = 'Success is the sum of small efforts' Key = 4	A	3	
Q.3		Attempt any <b>FOUR</b> :			16
	a)	Write importance and need of information.	U	1	
	b)	Consider user A and user B are authorized user , user C is unauthorized user , Write what type of attack occurs in following situation. i) User A sends confidential message to user B and user C reads message. ii) User A sends confidential message to user B , user C changes contents of message after sender sends and user B receives changed message with the name of A.	A	1	
	c)	Explain following terms with respect to access control policies : i) DAC ii)RBAC	U	2	
	d)	Explain working of DES algorithm.	U	3	
	e)	Explain symmetric cipher model.	U	3	
	f)	Convert plain text into cipher text by using simple columnar technique, use 6 columns and read the plain text in given column order : 2, 6, 4, 3, 5, and 1. plain text: 'symmetric cryptography'	A	3	

P.T.O.

**GOVERNMENT POLYTECHNIC, KOLHAPUR – 416004.**

(An Autonomous Institute of Govt. Of Maharashtra)

**WINTER / SUMMER-23**

**EXAM SEAT NO.**

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LEVEL : - FOURTH

PROGRAM : INFORMATION TECHNOLOGY

COURSE CODE :- ITG403

COURSE NAME :- INFORMATION SECURITY

MAX. MARKS : 80 TIME : 03 Hrs

DATE :-05/12/2023

Instruction :-

- 1) Answers of two sections must be written in separate section answer book provided.
- 2) Illustrate your answers with sketches wherever necessary.
- 3) Use of non-programmable pocket calculator is permissible.
- 4) Mathematical and other tables shall be made available on request.
- 5) Assume and mention suitable additional data if necessary.
- 6) Use of Mobile is strictly prohibited.
- 7) QN- Question No., SQN-Sub Question No. R- Remembering, U- Understanding, A- Application.

QN	S Q N	SECTION -II	R/ U/ A	Co	Ma rks
Q.4		Attempt any <b>FOUR</b> :			<b>08</b>
	a)	State working of asymmetric key cryptography with neat diagram.	R	4	
	b)	Define SSL.	R	5	
	c)	Draw position of SSL in TCP/IP.	U	5	
	d)	State format of handshake protocol in SSL.	U	5	
	e)	Define password selection strategies.	A	6	
	f)	Define Intruders.	R	6	
Q.5		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Write RSA algorithm process.	R	4	
	b)	Compare symmetric key cryptography and asymmetric key cryptography.	U	4	
	c)	Explain record protocol of SSL.	U	5	
	d)	Explain Secure HTTP.	R	5	
	e)	Explain intrusion techniques with example.	U	6	
	f)	Explain how to protect password from internal and external sources.	R	6	
Q.6		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Explain main possible attacks on RSA.	U	4	
	b)	Explain working of digital signature with diagram.	U	4	
	c)	Explain alert protocol of SSL.	R	5	
	d)	Write policies and limitation of firewall.	U	5	
	e)	Explain types of malicious software.	R	6	
	f)	Explain distributed denial of services attack with example.	A	6	

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**GOVERNMENT POLYTECHNIC, KOLHAPUR – 416004.**

(An Autonomous Institute of Govt. Of Maharashtra)

**ODD TERM END EXAM WINTER -2023****EXAM SEAT NO.**

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LEVEL :- **THIRD**PROGRAM : **INFORMATION TECHNOLOGY**COURSE CODE :- **ITG308**COURSE NAME **SOFTWARE ENGINEERING**MAX. MARKS : **80** TIME : **03Hrs.**DATE :- **06/12/2023**

Instruction :-

- 1) Answers must be written in the main answer book provided.( and supplements if required)
- 2) Illustrate your answers with sketches wherever necessary.
- 3) Use of non-programmable pocket calculator is permissible.
- 4) Mathematical and other tables shall be made available on request.
- 5) Assume and mention suitable additional data if necessary.
- 6) Use of Mobile is strictly prohibited.
- 7) QN- Question No., SQN-Sub Question No. R- Remembering, U- Understanding, A- Application.

QN	S Q N	Question Text	R/ U/ A	Co ITG 308	Mar ks
Q.1		Attempt any <b>FOUR</b> :			<b>08</b>
	a)	Define software and software engineering.	R	1	
	b)	List characteristics of software.	R	1	
	c)	Define software process.	R	1	
	d)	Define SRS.	R	2	
	e)	Explain activities during software project planning.	R	3	
	f)	Define project cost estimation.	R	3	
Q.2		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Explain Formal Methods Model.	U	1	
	b)	Draw DFD for Library management system for level 0 & level 1.	A	2	
	c)	List and explain characteristics of good SRS.	U	2	
	d)	Explain 4 P's in software project spectrum.	U	3	
	e)	Explain COCOMO Model with suitable example.	A	3	
	f)	Describe RMMM strategy in detail.	U	3	
Q.3		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Draw neat labelled diagram of software Engineering layered technology approach.	U	1	
	b)	Describe Agile Process model in detail.	U	1	
	c)	Describe selection criteria for software process Model.	A	1	
	d)	Sketch a use case diagram for library management system with minimum four use cases and two actors.	A	2	
	e)	Explain general Format of Software Requirement Specification (SRS)	U	2	
	f)	State importance of "Function Point" (FP) and "Lines of Code" (LOC) in concerned with project estimation.	A	3	

P.T.O

QN	S Q N	Question Text	R/ U/ A	Co ITG 308	M ar ks
Q.4		Attempt any <b>FOUR</b> :			<b>08</b>
	a)	How to implement modularity in software design?	U	4	
	b)	Why software maintenance is required?	U	5	
	c)	Explain use of design phase in SDLC.	A	4	
	d)	Define the term software quality.	R	5	
	e)	Explain reverse engineering tools.	U	5	
	f)	Enlist different design types.	R	4	
Q.5		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Explain Black box testing.	U	5	
	b)	Explain potential solution to maintenance problems.	U	5	
	c)	Explain different steps of software reverse engineering.	U	5	
	d)	Write difference between functional oriented design and object oriented design.	A	5	
	e)	Illustrate term modularity in detail.	U	4	
	f)	Enlist conceptual and Technical design in detail..	U	4	
Q.6		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Explain CASE tools.	A	3	
	b)	What is relation between cohesion & coupling explain in detail?	U	3	
	c)	Write use of White- box testing give example.	U	5	
	d)	Elaborate software Maintenance process in detail.	A	5	
	e)	Which different design strategies used in software design? Explain any one.	U	4	
	f)	Give difference between alpha testing and Beta testing.	U	5	

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**GOVERNMENT POLYTECHNIC, KOLHAPUR – 416004.**

(An Autonomous Institute of Govt. Of Maharashtra)

**ODD TERM END EXAM WINTER -2023****EXAM SEAT NO.**

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LEVEL :- **THIRD**PROGRAM : **INFORMATION TECHNOLOGY**COURSE CODE :- **ITG308**COURSE NAME **SOFTWARE ENGINEERING**MAX. MARKS : **80** TIME : **03Hrs.**DATE :- **06/12/2023**

Instruction :-

- 1) Answers must be written in the main answer book provided.( and supplements if required)
- 2) Illustrate your answers with sketches wherever necessary.
- 3) Use of non-programmable pocket calculator is permissible.
- 4) Mathematical and other tables shall be made available on request.
- 5) Assume and mention suitable additional data if necessary.
- 6) Use of Mobile is strictly prohibited.
- 7) QN- Question No., SQN-Sub Question No. R- Remembering, U- Understanding, A- Application.

QN	S Q N	Question Text	R/ U/ A	Co ITG 308	Mar ks
Q.1		Attempt any <b>FOUR:</b>			<b>08</b>
	a)	Define software and software engineering.	R	1	
	b)	List characteristics of software.	R	1	
	c)	Define software process.	R	1	
	d)	Define SRS.	R	2	
	e)	Explain activities during software project planning.	R	3	
	f)	Define project cost estimation.	R	3	
Q.2		Attempt any <b>FOUR:</b>			<b>16</b>
	a)	Explain Formal Methods Model.	U	1	
	b)	Draw DFD for Library management system for level 0 & level 1.	A	2	
	c)	List and explain characteristics of good SRS.	U	2	
	d)	Explain 4 P's in software project spectrum.	U	3	
	e)	Explain COCOMO Model with suitable example.	A	3	
	f)	Describe RMMM strategy in detail.	U	3	
Q.3		Attempt any <b>FOUR:</b>			<b>16</b>
	a)	Draw neat labelled diagram of software Engineering layered technology approach.	U	1	
	b)	Describe Agile Process model in detail.	U	1	
	c)	Describe selection criteria for software process Model.	A	1	
	d)	Sketch a use case diagram for library management system with minimum four use cases and two actors.	A	2	
	e)	Explain general Format of Software Requirement Specification (SRS)	U	2	
	f)	State importance of "Function Point" (FP) and "Lines of Code" (LOC) in concerned with project estimation.	A	3	

**P.T.O**

QN	S Q N	Question Text	R/ U/ A	Co ITG 308	M ar ks 08
Q.4		Attempt any <b>FOUR:</b>			<b>08</b>
	a)	How to implement modularity in software design?	U	4	
	b)	Why software maintenance is required?	U	5	
	c)	Explain use of design phase in SDLC.	A	4	
	d)	Define the term software quality.	R	5	
	e)	Explain reverse engineering tools.	U	5	
	f)	Enlist different design types.	R	4	
Q.5		Attempt any <b>FOUR:</b>			<b>16</b>
	a)	Explain Black box testing.	U	5	
	b)	Explain potential solution to maintenance problems.	U	5	
	c)	Explain different steps of software reverse engineering.	U	5	
	d)	Write difference between functional oriented design and object oriented design.	A	5	
	e)	Illustrate term modularity in detail.	U	4	
	f)	Enlist conceptual and Technical design in detail..	U	4	
Q.6		Attempt any <b>FOUR:</b>			<b>16</b>
	a)	Explain CASE tools.	A	3	
	b)	What is relation between cohension & coupling explain in detail?	U	3	
	c)	Write use of White- box testing give example.	U	5	
	d)	Elaborate software Maintenance process in detail.	A	5	
	e)	Which different design strategies used in software design? Explain any one.	U	4	
	f)	Give difference between alpha testing and Beta testing.	U	5	

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**GOVERNMENT POLYTECHNIC, KOLHAPUR – 416004.**

(An Autonomous Institute of Govt. Of Maharashtra)

**ODD TERM END EXAM WINTER -2023****EXAM SEAT NO.**

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LEVEL :- **THIRD**PROGRAM : **INFORMATION TECHNOLOGY**COURSE CODE :- **ITG303**COURSE NAME **DATA COMMUNICATION**MAX. MARKS : **80** TIME : **03Hrs.**DATE :- **06/12/2023**

Instruction :-

- 1) Answers must be written in the main answer book provided.( and supplements if required)
- 2) Illustrate your answers with sketches wherever necessary.
- 3) Use of non-programmable pocket calculator is permissible.
- 4) Mathematical and other tables shall be made available on request.
- 5) Assume and mention suitable additional data if necessary.
- 6) Use of Mobile is strictly prohibited.
- 7) QN- Question No., SQN-Sub Question No. R- Remembering, U- Understanding, A- Application.

QN	S Q N	Question Text	R/ U/ A	Co ITG 303	Mar ks
Q.1		Attempt any <b>FOUR</b> :			<b>08</b>
	a)	Describe Data representation.	R	1	
	b)	State types of Data Flow.	R	1	
	c)	Define the term wavelength.	R	2	
	d)	The power we use at home has a frequency of 60Hz, calculate period of this sine wave.	R	2	
	e)	Define analog transmission.	R	3	
	f)	Write aspects of digital to analog conversion.	R	3	
Q.2		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	With neat diagram illustrate Data communication system.	U	1	
	b)	Write a note on Data Flow.	U	1	
	c)	Explain transmission impairments with diagram.	U	2	
	d)	Explain analog and digital signal.	U	2	
	e)	Explain phase modulation in detail.	U	3	
	f)	Describe amplitude shift keying.	U	3	
Q.3		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Select any one simplex, half duplex or full duplex communication for given situations. i) A movie on demand service by cable service provider. ii) A telephone interview of candidate. iii) A weather report broadcasting portal. iv) Chatting application in online tutorial.	A	1	
	b)	Describe OSI Model.	U	1	
	c)	How to measure speed of digital signals during transmission? Explain with diagram.	U	2	
	d)	Explain broadband transmission in detail.	U	2	
	e)	Explain frequency modulation.	U	3	
	f)	Describe wavelength division multiplexing.	U	3	

**P.T.O**

QN	S Q N	Question Text	R/ U/ A	Co ITG 303	M ar ks
Q.4		Attempt any <b>FOUR</b> :			<b>08</b>
	a)	Define degree of polynomial. <i>Define detection vs correction</i>	R	5	
	b)	Draw neat diagram of coaxial cable.	A	4	
	c)	State the types of protocols for Noiseless channel.	A	6	
	d)	Define datawords and codewords.	R	5	
	e)	Define byte stuffing. <i>Draw dig. depicts simplest protocol</i>	R	6	
	f)	Draw the structure of encoder and & decoder in error correction.	A	5	
Q.5		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Explain fixed size and variable size framing.	U	6	
	b)	Explain types of Twisted pair cable with neat diagram.	U	4	
	c)	Explain CRC with example.	A	5	
	d)	Explain following responsibilities of data link layer i) Flow control ii) Error control.	U	6	
	e)	Describe single bit error & burst error.	A	5	
	f)	Describe propagation modes of Fiber Optic cable.	U	4	
Q.6		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Describe signal element versus Data Element.	U	4	
	b)	Explain hamming distance with example.	A	5	
	c)	Describe components of PCM ( Pulse Code Modulation) with suitable diagram.	U	4	
	d)	Explain selective Repeat Automatic Repeat Request.	U	6	
	e)	Explain simple parity check code with example.	U	5	
	f)	Describe the design of stop and wait protocol.	U	6	

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# GOVERNMENT POLYTECHNIC, KOLHAPUR – 416004.

(An Autonomous Institute of Govt. Of Maharashtra)

**ODD TERM END EXAM WINTER -2023**

**EXAM SEAT NO.**

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LEVEL :- **THIRD**

PROGRAM : **INFORMATION TECHNOLOGY**

COURSE CODE :- **ITG303**

COURSE NAME **DATA COMMUNICATION**

MAX. MARKS : **80** TIME : **03Hrs.**

DATE :- **06/ 12 / 2023**

Instruction :-

- 1) Answers must be written in the main answer book provided.( and supplements if required)
- 2) Illustrate your answers with sketches wherever necessary.
- 3) Use of non-programmable pocket calculator is permissible.
- 4) Mathematical and other tables shall be made available on request.
- 5) Assume and mention suitable additional data if necessary.
- 6) Use of Mobile is strictly prohibited.
- 7) QN- Question No., SQN-Sub Question No. R- Remembering, U- Understanding, A- Application.

QN	S Q N	Question Text	R/ U/ A	Co ITG 303	Mar ks
Q.1		Attempt any <b>FOUR:</b>			<b>08</b>
	a)	Describe Data representation.	R	1	
	b)	State types of Data Flow.	R	1	
	c)	Define the term wavelength.	R	2	
	d)	The power we use at home has a frequency of 60Hz, calculate period of this sine wave.	R	2	
	e)	Define analog transmission.	R	3	
	f)	Write aspects of digital to analog conversion.	R	3	
Q.2		Attempt any <b>FOUR:</b>			<b>16</b>
	a)	With neat diagram illustrate Data communication system.	U	1	
	b)	Write a note on Data Flow.	U	1	
	c)	Explain transmission impairments with diagram.	U	2	
	d)	Explain analog and digital signal.	U	2	
	e)	Explain phase modulation in detail.	U	3	
	f)	Describe amplitude shift keying.	U	3	
Q.3		Attempt any <b>FOUR:</b>			<b>16</b>
	a)	Select any one simplex, half duplex or full duplex communication for given situations. i) A movie on demand service by cable service provider. ii) A telephone interview of candidate. iii) A weather report broadcasting portal. iv) Chatting application in online tutorial.	A	1	
	b)	Describe OSI Model.	U	1	
	c)	How to measure speed of digital signals during transmission? Explain with diagram.	U	2	
	d)	Explain broadband transmission in detail.	U	2	
	e)	Explain frequency modulation.	U	3	
	f)	Describe wavelength division multiplexing.	U	3	

P.T.O

QN	S Q N	Question Text	R/ U/ A	Co ITG 303	M ar ks
Q.4		Attempt any <b>FOUR</b> :			<b>08</b>
	a)	Define degree of polynomial. <del>Expt</del> Define detection vs correction	R	5	
	b)	Draw neat diagram of coaxial cable.	A	4	
	c)	State the types of protocols for Noiseless channel.	A	6	
	d)	Define datawords and codewords.	R	5	
	e)	Define byte stuffing. Draw dig. which depicts simplest protocol	R	6	
	f)	Draw the structure of encoder and & decoder in error correction.	A	5	
Q.5		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Explain fixed size and variable size framing.	U	6	
	b)	Explain types of Twisted pair cable with neat diagram.	U	4	
	c)	Explain CRC with example.	A	5	
	d)	Explain following responsibilities of data link layer i) Flow control ii) Error control.	U	6	
	e)	Describe single bit error & burst error.	A	5	
	f)	Describe propagation modes of Fiber Optic cable.	U	4	
Q.6		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Describe signal element versus Data Element.	U	4	
	b)	Explain hamming distance with example.	A	5	
	c)	Describe components of PCM ( Pulse Code Modulation) with suitable diagram.	U	4	
	d)	Explain selective Repeat Automatic Repeat Request.	U	6	
	e)	Explain simple parity check code with example.	U	5	
	f)	Describe the design of stop and wait protocol.	U	6	

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**GOVERNMENT POLYTECHNIC, KOLHAPUR – 416004.**

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**ODD TERM END EXAM WINTER -2023****EXAM SEAT NO.**

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LEVEL :- **THIRD**PROGRAM : **INFORMATION TECHNOLOGY**COURSE CODE :- **ITG304**COURSE NAME **OOP USING C ++**MAX. MARKS : **80** TIME : **03Hrs.**DATE :- **08/12/2023**

Instruction :-

- 1) Answers must be written in the main answer book provided.( and supplements if required)
- 2) Illustrate your answers with sketches wherever necessary.
- 3) Use of non-programmable pocket calculator is permissible.
- 4) Mathematical and other tables shall be made available on request.
- 5) Assume and mention suitable additional data if necessary.
- 6) Use of Mobile is strictly prohibited.
- 7) QN- Question No., SQN-Sub Question No. R- Remembering, U- Understanding, A- Application.

QN	S Q N	Question Text	R/ U/ A	Co ITG 304	Mar ks
Q.1		Attempt any <b>FOUR</b> :			<b>08</b>
	a)	Enlist the applications of OOP.	R	1	
	b)	Define function overloading.	R	1	
	c)	Define friend function in C++.	R	2	
	d)	Enlist basic data types available in C++.	R	1	
	e)	Write syntax of inline function.	R	1	
	f)	Define static data member term.	R	2	
Q.2		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Write a program for type casting in C++.	A	1	
	b)	Write a program to accept two integers from user and swap using function.	A	1	
	c)	Write a program to create class Employee. Accept and display employee id & name.	A	2	
	d)	Define default constructor and parameterized constructor.	R	3	
	e)	Explain nesting of member functions with example.	U	2	
	f)	Explain constructor overloading with example.	U	3	
Q.3		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Explain scope resolution operator with example.	U	1	
	b)	Differentiate between function call by value and call by reference.	U	1	
	c)	Explain object as function argument with example.	U	2	
	d)	Explain destructors in C++ with example.	U	3	
	e)	Write a program to create class student. Accept and display Roll No. and name for three students using array of objects.	A	2	
	f)	Write a program to demonstrate use of copy constructor.	A	3	

**P.T.O**

QN	S Q N		R/ U/ A	Co ITG 304	Ma rks
Q.4		Attempt any <b>FOUR</b> :			<b>08</b>
	a)	Describe the term pure virtual function with suitable example.	U	5	
	b)	Describe use of protected access specifier used in the class.	U	4	
	c)	Explain virtual base class with suitable example.	U	4	
	d)	Define the term Pointer	R	5	
	e)	Define Polymorphism. Enlist its types	R	5	
	f)	Write the use of ios :: in and ios :: out	R	6	
Q.5		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Write a C++ program for following multilevel inheritance. Accept and display data for one car with all details  <div style="border: 1px solid black; padding: 5px; margin: 10px auto; width: fit-content;"> <p>Class : Carmanufacturer datamember : Name</p> </div> <div style="text-align: center;">↓</div> <div style="border: 1px solid black; padding: 5px; margin: 10px auto; width: fit-content;"> <p>Class : Carmodel datamember : Model name, Model no.</p> </div> <div style="text-align: center;">↓</div> <div style="border: 1px solid black; padding: 5px; margin: 10px auto; width: fit-content;"> <p>Class : Car datamember : Car no., colour</p> </div>	A	4	
	b)	Write a program in C++ to overload unary '_' operator to negate values of data members of class.	A	5	
	c)	Differentiate between run time and compile time polymorphism.	U	5	
	d)	State and describe visibility modes and its effects used in Inheritance.	U	4	
	e)	Write a C++ program to count number of spaces in text file.	A	6	
	f)	Explain Catching Exceptions with example	U	6	
Q.6		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Write any Four rules of operator overloading.	U	5	
	b)	Write a C++ program to declare a class 'College' with data members as name and college code. Derive a new class 'student' from the class college with data members as sname and roll no. Accept and display details of one student with college data	A	4	
	c)	Explain Single Inheritance with example.	U	4	
	d)	Explain Pointers to Objects with suitable example.	U	5	
	e)	Discuss the benefits of exception handling	U	6	
	f)	Explain Stream classes hierarchy with example	U	6	

**GOVERNMENT POLYTECHNIC, KOLHAPUR – 416004.**

(An Autonomous Institute of Govt. Of Maharashtra)

**ODD TERM END EXAM WINTER -2023****EXAM SEAT NO.**

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LEVEL :- **THIRD**PROGRAM : **INFORMATION TECHNOLOGY**COURSE CODE :- **ITG304**COURSE NAME **OOP USING C ++**MAX. MARKS : **80** TIME : **03Hrs.**DATE :- **08/12/2023**

Instruction :-

- 1) Answers must be written in the main answer book provided.( and supplements if required)
- 2) Illustrate your answers with sketches wherever necessary.
- 3) Use of non-programmable pocket calculator is permissible.
- 4) Mathematical and other tables shall be made available on request.
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- 7) QN- Question No., SQN-Sub Question No. R- Remembering, U- Understanding, A- Application.

QN	S Q N	Question Text	R/ U/ A	Co ITG 304	Mar ks
Q.1		Attempt any <b>FOUR</b> :			<b>08</b>
	a)	Enlist the applications of OOP.	R	1	
	b)	Define function overloading.	R	1	
	c)	Define friend function in C++.	R	2	
	d)	Enlist basic data types available in C++.	R	1	
	e)	Write syntax of inline function.	R	1	
	f)	Define static data member term.	R	2	
Q.2		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Write a program for type casting in C++.	A	1	
	b)	Write a program to accept two integers from user and swap using function.	A	1	
	c)	Write a program to create class Employee. Accept and display employee id & name.	A	2	
	d)	Define default constructor and parameterized constructor.	R	3	
	e)	Explain nesting of member functions with example.	U	2	
	f)	Explain constructor overloading with example.	U	3	
Q.3		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Explain scope resolution operator with example.	U	1	
	b)	Differentiate between function call by value and call by reference.	U	1	
	c)	Explain object as function argument with example.	U	2	
	d)	Explain destructors in C++ with example.	U	3	
	e)	Write a program to create class student. Accept and display Roll No. and name for three students using array of objects.	A	2	
	f)	Write a program to demonstrate use of copy constructor.	A	3	

**P.T.O**

QN	S Q N		R/ U/ A	Co ITG 304	Ma rks
Q.4		Attempt any <b>FOUR</b> :			<b>08</b>
	a)	Describe the term pure virtual function with suitable example.	U	5	
	b)	Describe use of protected access specifier used in the class.	U	4	
	c)	Explain virtual base class with suitable example.	U	4	
	d)	Define the term Pointer	R	5	
	e)	Define Polymorphism. Enlist its types	R	5	
	f)	Write the use of ios :: in and ios :: out	R	6	
Q.5		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Write a C++ program for following multilevel inheritance. Accept and display data for one car with all details  <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p>Class : Carmanufacturer datamember : Name</p> </div> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p>Class : Carmodel datamember : Model name, Model no.</p> </div> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p>Class : Car datamember : Car no., colour</p> </div>	A	4	
	b)	Write a program in C++ to overload unary '_' operator to negate values of data members of class.	A	5	
	c)	Differentiate between run time and compile time polymorphism.	U	5	
	d)	State and describe visibility modes and its effects used in Inheritance.	U	4	
	e)	Write a C++ program to count number of spaces in text file.	A	6	
	f)	Explain Catching Exceptions with example	U	6	
Q.6		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Write any Four rules of operator overloading.	U	5	
	b)	Write a C++ program to declare a class 'College' with data members as name and college code. Derive a new class 'student' from the class college with data members as sname and roll no. Accept and display details of one student with college data	A	4	
	c)	Explain Single Inheritance with example.	U	4	
	d)	Explain Pointers to Objects with suitable example.	U	5	
	e)	Discuss the benefits of exception handling	U	6	
	f)	Explain Stream classes hierarchy with example	U	6	

**GOVERNMENT POLYTECHNIC, KOLHAPUR – 416004.**

(An Autonomous Institute of Govt. Of Maharashtra)

**ODD TERM END EXAM WINTER -2023**

**EXAM SEAT NO.**

LEVEL : - **THIRD**

PROGRAM : **INFORMATION TECHNOLOGY**

COURSE CODE :- **ITG301**

COURSE NAME **APPLIED MATHEMATICS**

MAX. MARKS : **80** TIME : **03Hrs.**

DATE :- **11/12/2023**

Instruction :-

- 1) Answers must be written in the main answer book provided.( and supplements if required)
- 2) Illustrate your answers with sketches wherever necessary.
- 3) Use of non-programmable pocket calculator is permissible.
- 4) Mathematical and other tables shall be made available on request.
- 5) Assume and mention suitable additional data if necessary.
- 6) Use of Mobile is strictly prohibited.
- 7) QN- Question No., SQN-Sub Question No. R- Remembering, U- Understanding, A- Application.

QN	SQN	Question Text	R/ U/ A	Co ITG 301	Mar ks																						
Q.1		Attempt any <b>FOUR</b> :			<b>08</b>																						
	a)	Evaluate $\int \log x \, dx$ .	R	1																							
	b)	Evaluate $\int_{-\pi/2}^{\pi/2} \cos x \, dx$ .	U	1																							
	c)	Calculate the range and the coefficient of range from the following data : 120, 100, 130, 50, 150.	R	2																							
	d)	Evaluate $\int x.e^x \, dx$ .	R	1																							
	e)	Evaluate $\int_0^2 (3x^2 - 1) \, dx$ .	R	1																							
	f)	Define coefficient of variation.	R	2																							
Q.2		Attempt any <b>FOUR</b> :			<b>16</b>																						
	a)	Evaluate, $\int \frac{\sec x \cdot \operatorname{cosec} x}{\log(\tan x)} \, dx$ .	A	1																							
	b)	Evaluate the following integral by using property $\int_{-\pi/4}^{\pi/4} x^3 \cdot \sin^4 x \, dx$ .	A	1																							
	c)	The following table gives the lengths of 200 metal bars. Calculate mean length and the standard deviation.	A	2																							
		<table border="1" style="margin: auto; border-collapse: collapse;"> <tr> <td style="padding: 2px;">Length in cms</td> <td style="padding: 2px;">30</td> <td style="padding: 2px;">31</td> <td style="padding: 2px;">32</td> <td style="padding: 2px;">33</td> <td style="padding: 2px;">34</td> <td style="padding: 2px;">35</td> <td style="padding: 2px;">36</td> <td style="padding: 2px;">37</td> <td style="padding: 2px;">38</td> <td style="padding: 2px;">39</td> </tr> <tr> <td style="padding: 2px;">No. of bars</td> <td style="padding: 2px;">4</td> <td style="padding: 2px;">8</td> <td style="padding: 2px;">23</td> <td style="padding: 2px;">35</td> <td style="padding: 2px;">62</td> <td style="padding: 2px;">44</td> <td style="padding: 2px;">18</td> <td style="padding: 2px;">4</td> <td style="padding: 2px;">1</td> <td style="padding: 2px;">1</td> </tr> </table>	Length in cms	30	31	32	33	34	35	36	37	38	39	No. of bars	4	8	23	35	62	44	18	4	1	1			
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	d)	Evaluate $\int \frac{5x^2 - 6x + 3}{2x + 1} \, dx$ .	A	1																							
	e)	Evaluate $\int_0^1 \frac{x^2 - 2}{x^2 + 1} \, dx$ .	U	1																							
	f)	Evaluate $\int \frac{1}{x^2 + 4x + 25} \, dx$ .	U	1																							
Q.3		Attempt any <b>FOUR</b> :			<b>16</b>																						
	a)	Evaluate $\int \frac{1}{4\sin^2 x - 9\cos^2 x} \, dx$ .	A	1																							

**P.T.O**

	b)	Evaluate $\int_0^{\infty} x.e^{-x} dx.$	A	1													
	c)	Find the mean deviation from the mean for the following data:- <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>Marks</th> <th>00-10</th> <th>10-20</th> <th>20-30</th> <th>30-40</th> <th>40-50</th> </tr> </thead> <tbody> <tr> <td>No. of Students</td> <td>5</td> <td>8</td> <td>15</td> <td>16</td> <td>6</td> </tr> </tbody> </table>	Marks	00-10	10-20	20-30	30-40	40-50	No. of Students	5	8	15	16	6	A	2	
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	d)	The two sets of data are given below. <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>-</th> <th>Set I</th> <th>Set II</th> </tr> </thead> <tbody> <tr> <td>Mean</td> <td>82.5</td> <td>48.75</td> </tr> <tr> <td>S.D.</td> <td>7.3</td> <td>8.35</td> </tr> </tbody> </table> Which of the two sets is more consistent?	-	Set I	Set II	Mean	82.5	48.75	S.D.	7.3	8.35	A	2				
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	e)	Evaluate the following $\int \frac{\cos \sqrt{x}}{\sqrt{x}} dx.$	A	1													
	f)	Evaluate $\int \frac{1}{3-4 \sin 2x} dx.$	A	2													
Q.4		Attempt any <b>FOUR</b> :			<b>08</b>												
	a)	Find order and degree of the differential equation $y = \frac{(1 + (\frac{dy}{dx})^2)^{\frac{3}{2}}}{\frac{d^2y}{dx^2}}$	R	3													
	b)	Form the differential equation $y = Ae^x + Be^{-x}$ by eliminating arbitrary constant	R	3													
	c)	Solve $\frac{dy}{dx} = e^{3x-2y} + x^2.e^{-2y}$	U	3													
	d)	A fair die is rolled. What is probability that a number on die is a multiple of 2?	R	4													
	e)	An unbiased coin is tossed 5 times Find the probability of getting three heads.	R	4													
	f)	A random variable X follows a Poisson distribution such that $P(2) = P(3)$ . Find mean.	R	4													
Q.5		Attempt any <b>FOUR</b> :			<b>16</b>												
	a)	Solve $\frac{dy}{dx} = xy + x + y + 1$	U	3													
	b)	Solve $\frac{dy}{dx} = \frac{x^3+y^3}{xy^2}$	A	3													
	c)	Solve $(e^x + 2xy^2 + y^3)dx + (a^y + 2x^2y + 3xy^2)dy = 0$	U	3													
	d)	If $P(A) = \frac{3}{10}$ , $P(B) = \frac{39}{50}$ , $P(A \cap B) = \frac{4}{25}$ , evaluate $P(A' \cap B')$ and $P(A' \cup B')$	A	4													
	e)	If the probability of a bad reaction from a certain injection is 0.001, determine the chance that out of 2000 individuals more than two will get a bad reactions. (Given $e^2 = 7.4$ )	U	4													
	f)	In a sample of 1000 cases the mean of certain test is 14 and standard deviation is 2.5. Assuming the distribution to be normal, find how many students score between 12 and 15? Given: Area( $z=0$ and $z=0.4$ ) is 0.1554 ; Area( $z=0$ and $z=0.8$ ) is 0.2881 )	A	4													
Q.6		Attempt any <b>FOUR</b> :			<b>16</b>												
	a)	Solve $\frac{dy}{dx} = \cos(x + y)$	A	3													
	b)	Solve $(1+x^2) \frac{dy}{dx} + y = e^{\tan^{-1} x}$	A	3													
	c)	An urn contains 10 red, 5 white and 5 black balls. Two balls are drawn at random. Find the probability that they are not of the same colour.	U	4													
	d)	If 30% of the electrical bulbs produced are defective. Find the probability that out of 4 bulbs selected at the most two are defective.	U	4													
	e)	If probability that an electric motor is defective is 0.01. What is probability that sample of 300 electric motor will contain exactly 5 defective motor.	U	4													
	f)	Verify that $y = 2 \cos(\log x) + 3 \sin(\log x)$ is a solution of differential equation $x^2 \frac{d^2y}{dx^2} + x \frac{dy}{dx} + y = 0$	A	3													

**GOVERNMENT POLYTECHNIC, KOLHAPUR – 416004.**

(An Autonomous Institute of Govt. Of Maharashtra)

**ODD TERM END EXAM WINTER -2023**

**EXAM SEAT NO.**

**LEVEL : - THIRD**

**PROGRAM : INFORMATION TECHNOLOGY**

**COURSE CODE :- ITG301**

**COURSE NAME APPLIED MATHEMATICS**

**MAX. MARKS : 80 TIME : 03Hrs.**

**DATE :- 11/12/2023**

**Instruction :-**

- 1) Answers must be written in the main answer book provided.( and supplements if required)
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**GOVERNMENT POLYTECHNIC, KOLHAPUR – 416004.**

(An Autonomous Institute of Govt. Of Maharashtra)

**ODD TERM END EXAM WINTER -2023****EXAM SEAT NO.**

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LEVEL :- **THIRD**PROGRAM : **INFORMATION TECHNOLOGY**COURSE CODE :- **ITG311**COURSE NAME **JAVA PROGRAMMING**MAX. MARKS : **80** TIME : **03Hrs.**DATE :- **11/12/2023**

Instruction :-

- 1) Answers must be written in the main answer book provided.( and supplements if required)
- 2) Illustrate your answers with sketches wherever necessary.
- 3) Use of non-programmable pocket calculator is permissible.
- 4) Mathematical and other tables shall be made available on request.
- 5) Assume and mention suitable additional data if necessary.
- 6) Use of Mobile is strictly prohibited.
- 7) QN- Question No., SQN-Sub Question No. R- Remembering, U- Understanding, A- Application.

QN	S Q N	Question Text	R/ U/ A	Co ITG 311	Mar ks
Q.1		Attempt any <b>FOUR</b> :			<b>08</b>
	a)	Define bytecode.	R	1	
	b)	List the tools available in JDK.	R	1	
	c)	Draw various forms of inheritance in Java.	U	2	
	d)	State the use of final keyword.	R	2	
	e)	Define package.	R	3	
	f)	State any two differences between class and interface.	U	3	
Q.2		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Explain following features of Java. i) Platform independence ii) Multithreaded and interactive.	U	1	
	b)	Write an interface with two methods area and volume, implement the interface to find the area and volume of circle and rectangle.	A	3	
	c)	Write a program to print the following output 1 1 1 1 1 2 2 2 2 3 3 3 4 4 5	A	2	
	d)	Explain with example the use of switch case statement.	U	1	
	e)	Explain how arrays are created in Java. Give example.	U	2	
	f)	Write steps to create and access a package.	U	3	
Q.3		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Write a program to check whether given number is prime or not.	A	1	
	b)	Explain with example creation of Vector and adding an element in vector.	U	2	
	c)	Write a java program to implement multiple inheritances.	A	3	
	d)	Describe naming conventions in package.	U	3	
	e)	Describe following string class method with example i) Compare To ( ) ii) equals ( )	U	2	
	f)	Enlist any four built in packages in java API with atleast two class names from each package.	U	3	

P.T.O.

P.T.O

QN	S Q N	Question Text	R/ U/ A	Co ITG 311	M ar ks
Q.4		Attempt any <b>FOUR</b> :			<b>08</b>
	a)	Define Applet and Application.	R	5	
	b)	State the types of Errors.	R	4	
	c)	Define Input stream and output stream.	R	6	
	d)	Write the syntax of finally statement.	R	4	
	e)	State the attributes of <param> tag.	R	5	
	f)	State any two methods of FileReader and FileWriter class.	R	6	
Q.5		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Write a program to create user defined Exception "Minimum balance" if the account balance entered by user is less than 1000.	A	4	
	b)	Explain byte stream class in detail.	U	6	
	c)	Design an applet which displays rectangle filled with blue color & display message "Hello World" in red color below it.	A	5	
	d)	Explain life cycle of Thread.	U	4	
	e)	Explain the process of passing parameters to an Applet and obtaining values of that parameters with example.	U	5	
	f)	Explain the use of throw keyword with example.	U	4	
Q.6		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Write a program to display message "Welcome to Applet" on Applet window.	A	5	
	b)	Write a program to create two threads such that one thread will print odd numbers and other thread will print even numbers from 1 to 10.	A	4	
	c)	Describe any four methods of File class.	U	6	
	d)	Explain following methods with syntax. i) setColor ( ) ii) setForeground ( ) iii) getFont ( ) iv) getColor ( )	U	5	
	e)	Write a program to read the contents of file using FileReader.	A	6	
	f)	Differentiate between Applet and Application.	U	5	

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**GOVERNMENT POLYTECHNIC, KOLHAPUR – 416004.**

(An Autonomous Institute of Govt. Of Maharashtra)

**ODD TERM END EXAM WINTER -2023****EXAM SEAT NO.**

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LEVEL :- **THIRD**PROGRAM : **INFORMATION TECHNOLOGY**COURSE CODE :- **ITG311**COURSE NAME **JAVA PROGRAMMING**MAX. MARKS : **80** TIME : **03Hrs.**DATE :- **11/12/2023**

Instruction :-

- 1) Answers must be written in the main answer book provided.( and supplements if required)
- 2) Illustrate your answers with sketches wherever necessary.
- 3) Use of non-programmable pocket calculator is permissible.
- 4) Mathematical and other tables shall be made available on request.
- 5) Assume and mention suitable additional data if necessary.
- 6) Use of Mobile is strictly prohibited.
- 7) QN- Question No., SQN-Sub Question No. R- Remembering, U- Understanding, A- Application.

QN	S Q N	Question Text	R/ U/ A	Co ITG 311	Mar ks
Q.1		Attempt any <b>FOUR</b> :			<b>08</b>
	a)	Define bytecode.	R	1	
	b)	List the tools available in JDK.	R	1	
	c)	Draw various forms of inheritance in Java.	U	2	
	d)	State the use of final keyword.	R	2	
	e)	Define package.	R	3	
	f)	State any two differences between class and interface.	U	3	
Q.2		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Explain following features of Java. i) Platform independence ii) Multithreaded and interactive.	U	1	
	b)	Write an interface with two methods area and volume, implement the interface to find the area and volume of circle and rectangle.	A	3	
	c)	Write a program to print the following output 1 1 1 1 1 2 2 2 2 3 3 3 4 4 5	A	2	
	d)	Explain with example the use of switch case statement.	U	1	
	e)	Explain how arrays are created in Java. Give example.	U	2	
	f)	Write steps to create and access a package.	U	3	
Q.3		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Write a program to check whether given number is prime or not.	A	1	
	b)	Explain with example creation of Vector and adding an element in vector.	U	2	
	c)	Write a java program to implement multiple inheritances.	A	3	
	d)	Describe naming conventions in package.	U	3	
	e)	Describe following string class method with example i) Compare To ( ) ii) equals ( )	U	2	
	f)	Enlist any four built in packages in java API with atleast two class names from each package.	U	3	

P.T.O.

P.T.O.

QN	S Q N	Question Text	R/ U/ A	Co ITG 311	M ar ks
Q.4		Attempt any <b>FOUR</b> :			<b>08</b>
	a)	Define Applet and Application.	R	5	
	b)	State the types of Errors.	R	4	
	c)	Define Input stream and output stream.	R	6	
	d)	Write the syntax of finally statement.	R	4	
	e)	State the attributes of <param> tag.	R	5	
	f)	State any two methods of FileReader and FileWriter class.	R	6	
Q.5		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Write a program to create user defined Exception "Minimum balance" if the account balance entered by user is less than 1000.	A	4	
	b)	Explain byte stream class in detail.	U	6	
	c)	Design an applet which displays rectangle filled with blue color & display message "Hello World" in red color below it.	A	5	
	d)	Explain life cycle of Thread.	U	4	
	e)	Explain the process of passing parameters to an Applet and obtaining values of that parameters with example.	U	5	
	f)	Explain the use of throw keyword with example.	U	4	
Q.6		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Write a program to display message "Welcome to Applet" on Applet window.	A	5	
	b)	Write a program to create two threads such that one thread will print odd numbers and other thread will print even numbers from 1 to 10.	A	4	
	c)	Describe any four methods of File class.	U	6	
	d)	Explain following methods with syntax. i) setColor ( ) ii) setForeground ( ) iii) getFont ( ) iv) getColor ( )	U	5	
	e)	Write a program to read the contents of file using FileReader.	A	6	
	f)	Differentiate between Applet and Application.	U	5	

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**GOVERNMENT POLYTECHNIC, KOLHAPUR – 416004.**

(An Autonomous Institute of Govt. Of Maharashtra)

**ODD TERM END EXAM WINTER -2023****EXAM SEAT NO.**

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LEVEL :- **FIRST**PROGRAM : **INFORMATION TECHNOLOGY**COURSE CODE :- **ITG101**COURSE NAME **C PROGRAMMING**MAX. MARKS : **80** TIME : **03Hrs.**DATE :- **13/ 12 / 2023**

Instruction :-

- 1) Answers must be written in the main answer book provided.( and supplements if required)
- 2) Illustrate your answers with sketches wherever necessary.
- 3) Use of non-programmable pocket calculator is permissible.
- 4) Mathematical and other tables shall be made available on request.
- 5) Assume and mention suitable additional data if necessary.
- 6) Use of Mobile is strictly prohibited.
- 7) QN- Question No., SQN-Sub Question No. R- Remembering, U- Understanding, A- Application.

QN	S Q N	Question Text	R/ U/ A	Co ITG 101	Mar ks
Q.1		Attempt any <b>FOUR</b> :			<b>08</b>
	a)	Define Data type : Enlist the different data types.	R	1	
	b)	Enlist the types of operators available in C.	R	1	
	c)	Write the syntax of if_else statement.	R	2	
	d)	Draw the flowchart of switch case statement.	R	2	
	e)	Define function.	R	3	
	f)	State the use of Decision Making.	R	2	
Q.2		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Define variable and explain the syntax for initialization and declaration of variable.	U	1	
	b)	Explain Arithmetic operators in detail.	U	1	
	c)	Write a program to find and display area of Rectangle.	A	1	
	d)	Explain while loop in detail with example.	U	2	
	e)	Write a program to add two numbers using user defined function.	A	3	
	f)	Explain call by value with example.	U	3	
Q.3		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Explain the concept Recursion in detail with example.	U	3	
	b)	Write the rules while writing 'C' program.	A	1	
	c)	Differentiate between if and switch statement.	A	1	
	d)	Explain Nested for loop with example.	U	2	
	e)	Write a program to generate Fibonacci series.	A	2	
	f)	Compare between call by value and call by Reference.	A	3	

**P.T.O**

QN	S Q N	Question Text	R/ U/ A	Co ITG 101	M ar ks
Q.4		Attempt any <b>FOUR</b> :			<b>08</b>
	a)	Define single dimensional array.	R	4	
	b)	How to initialize <b>1D</b> array.	U	4	
	c)	State use ofstrupr( ) & strlwr( ).	U	5	
	d)	Define structure with example.	A	6	
	e)	How to declare pointer variable?	U	6	
	f)	State difference between simple and complex structures.	U	6	
Q.5		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Describe how to declare and initialize an 2D-array.	R	4	
	b)	Explain passing array to function.	U	4	
	c)	Write a C program to compare two strings.	A	5	
	d)	Explain strcpy( ) and strcat( ) with example.	U	5	
	e)	Write a C program to access address of a variable using pointer.	A	6	
	f)	Describe use of *( indirection operator) and (&) address of operator. With example.	U	6	
Q.6		Attempt any <b>TWO</b> :			<b>16</b>
	a)	Write a C program to print the largest ad second largest element of the array.	A	4	
	b)	Write a C program to convert the uppercase string into lower case using for loop.	A	5	
	c)	Write a C pointer program to swap two numbers without using the 3 <sup>rd</sup> variable.	A	6	

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QN	S Q N	Question Text	R/ U/ A	Co ITG 101	M ar ks
Q.4		Attempt any <b>FOUR</b> :			<b>08</b>
	a)	Define single dimensional array.	R	4	
	b)	How to initialize ID array.	U	4	
	c)	State use ofstrupr( ) & strlwr( ).	U	5	
	d)	Define structure with example.	A	6	
	e)	How to declare pointer variable?	U	6	
	f)	State difference between simple and complex structures.	U	6	
Q.5		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Describe how to declare and initialize an 2D-array.	R	4	
	b)	Explain passing array to function.	U	4	
	c)	Write a C program to compare two strings.	A	5	
	d)	Explain strepy( ) and strcat( ) with example.	U	5	
	e)	Write a C program to access address of a variable using pointer.	A	6	
	f)	Describe use of *( indirection operator) and (&) address of operator. With example.	U	6	
Q.6		Attempt any <b>TWO</b> :			<b>16</b>
	a)	Write a C program to print the largest ad second largest element of the array.	A	4	
	b)	Write a C program to convert the uppercase string into lower case using for loop.	A	5	
	c)	Write a C pointer program to swap two numbers without using the 3 <sup>rd</sup> variable.	A	6	

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**GOVERNMENT POLYTECHNIC, KOLHAPUR – 416004.**

(An Autonomous Institute of Govt. Of Maharashtra)

**ODD TERM END EXAM WINTER -2023****EXAM SEAT NO.**

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LEVEL :- **FIRST**PROGRAM : **INFORMATION TECHNOLOGY**COURSE CODE :- **ITG101**COURSE NAME **C PROGRAMMING**MAX. MARKS : **80** TIME : **03Hrs.**DATE :- **13/12/2023**

Instruction :-

- 1) Answers must be written in the main answer book provided.( and supplements if required)
- 2) Illustrate your answers with sketches wherever necessary.
- 3) Use of non-programmable pocket calculator is permissible.
- 4) Mathematical and other tables shall be made available on request.
- 5) Assume and mention suitable additional data if necessary.
- 6) Use of Mobile is strictly prohibited.
- 7) QN- Question No., SQN-Sub Question No. R- Remembering, U- Understanding, A- Application.

QN	S Q N	Question Text	R/ U/ A	Co ITG 101	Mar ks
Q.1		Attempt any <b>FOUR</b> :			<b>08</b>
	a)	Define Data type : Enlist the different data types.	R	1	
	b)	Enlist the types of operators available in C.	R	1	
	c)	Write the syntax of if_else statement.	R	2	
	d)	Draw the flowchart of switch case statement.	R	2	
	e)	Define function.	R	3	
	f)	State the use of Decision Making.	R	2	
Q.2		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Define variable and explain the syntax for initialization and declaration of variable.	U	1	
	b)	Explain Arithmetic operators in detail.	U	1	
	c)	Write a program to find and display area of Rectangle.	A	1	
	d)	Explain while loop in detail with example.	U	2	
	e)	Write a program to add two numbers using user defined function.	A	3	
	f)	Explain call by value with example.	U	3	
Q.3		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Explain the concept Recursion in detail with example.	U	3	
	b)	Write the rules while writing 'C' program.	A	1	
	c)	Differentiate between <b>if</b> and switch statement.	A	1	
	d)	Explain Nested for loop with example.	U	2	
	e)	Write a program to generate Fibonacci series.	A	2	
	f)	Compare between call by value and call by Reference.	A	3	

**P.T.O**

**GOVERNMENT POLYTECHNIC, KOLHAPUR – 416004.**

(An Autonomous Institute of Govt. Of Maharashtra)

**ODD TERM END EXAM WINTER -2023****EXAM SEAT NO.**

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LEVEL :- **FIRST**PROGRAM : **INFORMATION TECHNOLOGY**COURSE CODE :- **ITG104**COURSE NAME **BASIC ELECTRONICS**MAX. MARKS : **40** TIME : **02Hrs.**DATE :- **15/12/2023**

Instruction :-

- 1) Answers must be written in the main answer book provided.( and supplements if required)
- 2) Illustrate your answers with sketches wherever necessary.
- 3) Use of non-programmable pocket calculator is permissible.
- 4) Mathematical and other tables shall be made available on request.
- 5) Assume and mention suitable additional data if necessary.
- 6) Use of Mobile is strictly prohibited.
- 7) QN- Question No., SQN-Sub Question No. R- Remembering, U- Understanding, A- Application.

QN	S Q N	Question Text	R/ U/ A	Co ITG 104	Mar ks
Q.1		Attempt any <b>FOUR</b> :			<b>08</b>
	a)	Define discrete and non discrete components with one example each.	R	1	
	b)	Define doping. State the need of doping in semiconductors.	R	2	
	c)	Enlist the types of rectifier filters.	R	3	
	d)	Draw the circuit diagram of bridge rectifier.	U	3	
	e)	Define intrinsic and extrinsic semiconductor.	R	2	
	f)	Draw the V-I characteristics of PN junction diode in forward and reverse bias mode.	U	2	
Q.2		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Define capacitor. Describe working principle of capacitor.	U	1	
	b)	Describe the operation of zener diode as a shunt regulator.	A	2	
	c)	Draw circuit diagram and describe the operation of CLC (Pi) filter using bridge rectifier with input and output waveforms.	U	3	
	d)	Draw the circuit diagram for following transistor biasing : i) Base resistor bias ii) Collector to base bias.	R	4	
	e)	Differentiate between conductors, insulators and semiconductors ( any four points)	U	2	
	f)	Describe the operating principle of NPN transistor with neat construction diagram.	U	4	
Q.3		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Identify the colour band for 340K $\Omega$ resistor with 5% tolerance.	A	1	
	b)	Describe the process of obtaining N-type and P-type extrinsic semiconductor.	A	2	
	c)	Draw the block diagram of complete power supply for +5V output and describe the function of each block.	A	3	
	d)	Draw circuit diagram of common emitter amplifier. State it's any two applications.	A	4	
	e)	Compare HWR and centre tap FWR.	A	4	
	f)	Give the following parameter values corresponding to bridge rectifier : i) Average dc output voltage ii) Ripple factor. iii) Rectifier efficiency iv) Peak Inverse Voltage.	A	3	

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(An Autonomous Institute of Govt. Of Maharashtra)

**ODD TERM END EXAM WINTER -2023****EXAM SEAT NO.**

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LEVEL :- **FIRST**PROGRAM : **INFORMATION TECHNOLOGY**COURSE CODE :- **ITG104**COURSE NAME **BASIC ELECTRONICS**MAX. MARKS : **40** TIME : **02Hrs.**DATE :- **15/12/2023**

Instruction :-

- 1) Answers must be written in the main answer book provided.( and supplements if required)
- 2) Illustrate your answers with sketches wherever necessary.
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- 7) QN- Question No., SQN-Sub Question No. R- Remembering, U- Understanding, A- Application.

QN	S Q N	Question Text	R/ U/ A	Co ITG 104	Mar ks
Q.1		Attempt any <b>FOUR</b> :			<b>08</b>
	a)	Define discrete and non discrete components with one example each.	R	1	
	b)	Define doping. State the need of doping in semiconductors.	R	2	
	c)	Enlist the types of rectifier filters.	R	3	
	d)	Draw the circuit diagram of bridge rectifier.	U	3	
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Q.2		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Define capacitor. Describe working principle of capacitor.	U	1	
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	c)	Draw circuit diagram and describe the operation of CLC (Pi) filter using bridge rectifier with input and output waveforms.	U	3	
	d)	Draw the circuit diagram for following transistor biasing : i) Base resistor bias ii) Collector to base bias.	R	4	
	e)	Differentiate between conductors, insulators and semiconductors ( any four points)	U	2	
	f)	Describe the operating principle of NPN transistor with neat construction diagram.	U	4	
Q.3		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Identify the colour band for 340K $\Omega$ resistor with 5% tolerance.	A	1	
	b)	Describe the process of obtaining N-type and P-type extrinsic semiconductor.	A	2	
	c)	Draw the block diagram of complete power supply for +5V output and describe the function of each block.	A	3	
	d)	Draw circuit diagram of common emitter amplifier. State it's any two applications.	A	4	
	e)	Compare HWR and centre tap FWR.	A	4	
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# GOVERNMENT POLYTECHNIC, KOLHAPUR – 416004.

(An Autonomous Institute of Govt. Of Maharashtra)

WINTER/SUMMER- 2023

EXAM SEAT NO.

LEVEL :- FIRST

PROGRAM : Information Technology

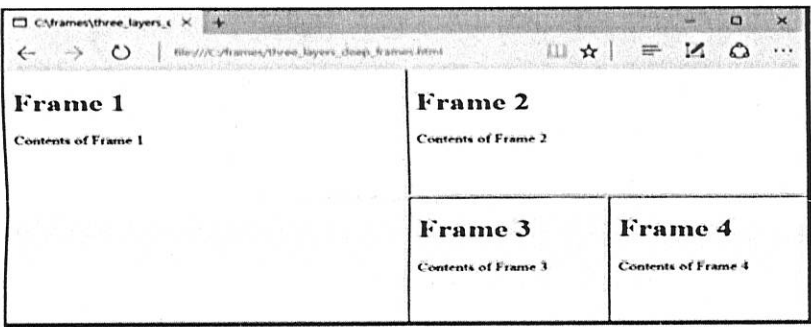
COURSE CODE :- ITG102

COURSE NAME :- WEB PAGE DESISNING

MAX. MARKS : 40 TIME : 03 Hrs DATE :- 19/12/23

Instruction :-

- 1) Answers of two sections must be written in separate section answer book provided.
- 2) Illustrate your answers with sketches wherever necessary.
- 3) Use of non-programmable pocket calculator is permissible.
- 4) Mathematical and other tables shall be made available on request.
- 5) Assume and mention suitable additional data if necessary.
- 6) Use of Mobile is strictly prohibited.
- 7) QN- Question No., SQN-Sub Question No. R- Remembering, U- Understanding, A- Application.

QN	S Q N		R/ U/ A	Co ITG102	Ma rks
Q.1		Attempt any <b>FOUR:</b>			<b>08</b>
	a)	Explain the Terms I )URL II) Search Engine	U	1	
	b)	Write down use of anchor tag.	R	2	
	c)	Enlist Different image format.	R	3	
	d)	Write down disadvantages of using frame tag.	U	4	
	e)	Define HTML Forms.	R	5	
	f)	Explain the concept of CSS Selector.	U	5	
Q.2		Attempt any <b>FOUR:</b>			<b>16</b>
	a)	Explain list elements in HTML.	U	1	
	b)	Explain concept of nesting lists with example.	U	2	
	c)	Explain image tag with its attributes.	U	3	
	d)	Explain spanning of rows and columns.	U	4	
	e)	Explain Checkbox control & Radio button control in HTML Form.	R	4	
	f)	How to link CSS to HTML? Give Example	A	5	
Q.3		Attempt any <b>FOUR:</b>			<b>16</b>
	a)	How u can set text color and background color of a web page? Explain With Example.	U	1	
	b)	What is Anchor tag and how can you open an URL into a new tab when clicked?	U	2	
	c)	Create web page to include image with different alignment.	A	3	
	d)	Write HTML Code to display following output using frameset tag.	A	4	
					
	e)	State the advantages of Bootstrap.	U	5	
	f)	Explain the font property with syntax.	A	5	



# GOVERNMENT POLYTECHNIC, KOLHAPUR – 416004.

(An Autonomous Institute of Govt. Of Maharashtra)

WINTER/SUMMER- 2023

EXAM SEAT NO.

LEVEL :- FIRST

PROGRAM : Information Technology

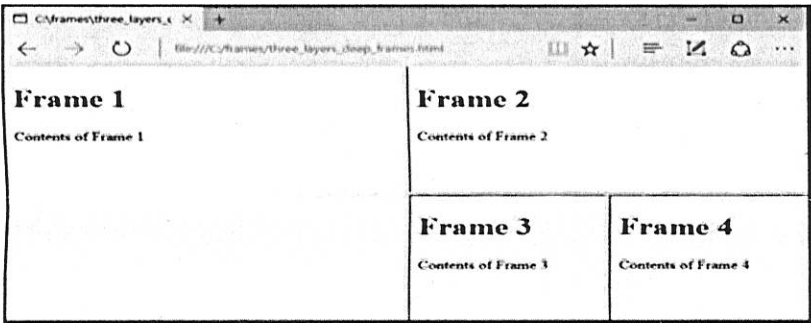
COURSE CODE :- ITG102

COURSE NAME :- WEB PAGE DESIGNING

MAX. MARKS : 40 TIME : 03 Hrs DATE :- 19/12/23

Instruction :-

- 1) Answers of two sections must be written in separate section answer book provided.
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- 3) Use of non-programmable pocket calculator is permissible.
- 4) Mathematical and other tables shall be made available on request.
- 5) Assume and mention suitable additional data if necessary.
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- 7) QN- Question No., SQN-Sub Question No. R- Remembering, U- Understanding, A- Application.

QN	S Q N		R/ U/ A	Co ITG102	Ma rks
Q.1		Attempt any <b>FOUR</b> :			<b>08</b>
	a)	Explain the Terms I)URL II) Search Engine	U	1	
	b)	Write down use of anchor tag.	R	2	
	c)	Enlist Different image format.	R	3	
	d)	Write down disadvantages of using frame tag.	U	4	
	e)	Define HTML Forms.	R	5	
	f)	Explain the concept of CSS Selector.	U	5	
Q.2		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	Explain list elements in HTML.	U	1	
	b)	Explain concept of nesting lists with example.	U	2	
	c)	Explain image tag with its attributes.	U	3	
	d)	Explain spanning of rows and columns.	U	4	
	e)	Explain Checkbox control & Radio button control in HTML Form.	R	4	
	f)	How to link CSS to HTML? Give Example	A	5	
Q.3		Attempt any <b>FOUR</b> :			<b>16</b>
	a)	How u can set text color and background color of a web page? Explain With Example.	U	1	
	b)	What is Anchor tag and how can you open an URL into a new tab when clicked?	U	2	
	c)	Create web page to include image with different alignment.	A	3	
	d)	Write HTML Code to display following output using frameset tag.	A	4	
					
	e)	State the advantages of Bootstrap.	U	5	
	f)	Explain the font property with syntax.	A	5	



**GOVERNMENT POLYTECHNIC, KOLHAPUR – 416004.**

(An Autonomous Institute of Govt. Of Maharashtra)

**WINTER / SUMMER- 2023****EXAM SEAT NO.**

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LEVEL :- FIRST

PROGRAM : INFORMATION TECHNOLOGY

COURSE CODE :- ITH101

COURSE NAME :- WEB PAGE DESIGN

MAX. MARKS : 70

TIME : 03 Hrs

DATE : 19 / 12 / 23

Instruction :-

- 1) Answers of two sections must be written in separate section answer book provided.
- 2) Illustrate your answers with sketches wherever necessary.
- 3) Use of non-programmable pocket calculator is permissible.
- 4) Mathematical and other tables shall be made available on request.
- 5) Assume and mention suitable additional data if necessary.
- 6) Use of Mobile is strictly prohibited.
- 7) QN- Question No., SQN-Sub Question No. R- Remembering, U- Understanding, A- Application.

QN	S Q N		R/ U/ A	Co ITH 101	Ma rks
Q.1		Attempt any <b>THREE: (2 X 3)</b>			<b>06</b>
	a)	Enlist Basic Principals involved in web development.	R	1	
	b)	Explain the Terms:- I)Web Page II)Web server	U	1	
	c)	Define URL.	R	3	
	d)	Enlist Block Level Elements	R	2	
	e)	Explain MARQUEE tag with Example	U	3	
Q.2		Attempt any <b>FOUR: (4 X 4)</b>			<b>16</b>
	a)	Explain Different types of lists in HTML,	U	3	
	b)	How many types of heading does an HTML contain? Explain it.	U	2	
	c)	Write html code to generate the following output. • Coffee • Tea o Black Tea o Green Tea • Milk	A	3	
	d)	Explain Anchor tag with its attributes	U	3	
	e)	Write down the steps to write and execute a HTML document.	U	1	
	f)	Write down html code to insert link i) To document in the same folder ii) To document in the different folder iii) To document on the web.	A	3	
Q.3		Attempt any <b>TWO: (6 X 2)</b>			<b>12</b>
	a)	Define the term HTML Tag. Explain How you can define HTML attributes?	U	1	
	b)	Write a program to insert special Characters in the web page.	A	2	
	c)	Explain Different Text level elements with example.	U	2	

P.T.O.

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LEVEL :- FIRST

PROGRAM : INFORMATION TECHNOLOGY

COURSE CODE :- ITH101

COURSE NAME :- WEB PAGE DESIGN

MAX. MARKS : 36

TIME : 03 Hrs

DATE :- 19/12/23

QN	S Q N		R/ U/ A	Co ITH 101	Ma rks
Q.4		Attempt any <b>FOUR: (2 X 4)</b>			<b>08</b>
	a)	Write down the use of No frames Tag	U	4	
	b)	Write down benefits of using style sheet	R	5	
	c)	Write the use of Row span and col span in table tag	R	4	
	d)	Enlist different types of style sheet	U	5	
	e)	Write a code to insert a table with two rows and three columns in html document.	A	4	
	f)	Enlist different types of style sheet <i>Define the term stylesheet</i>	R	5	
Q.5		Attempt any <b>FOUR: (4 X 4)</b>			<b>16</b>
	a)	Explain the font property of style sheet with syntax.	U	5	
	b)	Write down the different new form element types in HTML 5 with their use.	U	6	
	c)	Write HTML code to display following output  Choose your favourite Web language:  <input type="radio"/> HTML <input type="radio"/> CSS <input checked="" type="radio"/> JavaScript	A	4	
	d)	Write down the advantages of HTML5 over its previous versions	U	5	
	e)	Explain process of hosting website on Internet	U	6	
	f)	Write HTML code to divide web page into 2 rows and second into 3 columns using frameset and its attributes and showing text links in first column, ordered list in second column and image in third column.	A	4	
Q.6		Attempt any <b>TWO: (6 X 2)</b>			<b>12</b>
	a)	Write a HTML code to create Registration Form.	A	4	
	b)	Write a code to demonstrate use of graphics and multimedia elements in HTML5	A	6	
	c)	What is the difference between external, internal and inline CSS? Explain with programming examples.	U	5	

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PROGRAM : INFORMATION TECHNOLOGY

COURSE CODE :- ITH101

COURSE NAME :- WEB PAGE DESIGN

MAX. MARKS : 70

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	c)	Define URL.	R	3	
	d)	Enlist Block Level Elements	R	2	
	e)	Explain MARQUEE tag with Example	U	3	
Q.2		Attempt any <b>FOUR: (4 X 4)</b>			<b>16</b>
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	b)	Write a program to insert special Characters in the web page.	A	2	
	c)	Explain Different Text level elements with example.	U	2	

P.T.O.

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	d)	Enlist different types of style sheet	U	5	
	e)	Write a code to insert a table with two rows and three columns in html document.	A	4	
	f)	<del>Enlist different types of style sheet</del> Define the term <i>Style sheet</i>	R	5	
Q.5		Attempt any <b>FOUR: (4 X 4)</b>			<b>16</b>
	a)	Explain the font property of style sheet with syntax.	U	5	
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