GOVERNMENT POLYTECHNIC, KOLHAPUR – 416004.

(An Autonomous Institute of Govt. Of Maharashtra)

SUMMER 2024

EXAM SEAT NO. | | | | | | |

LEVEL : - First PROGRAM : INFORMATION TECHNOLOGY

COURSE CODE :- ITH101

COURSE NAME :- WEB PAGE DESIGN

MAX. MARKS : **70** TIME : **03 Hrs** DATE :-15/5/2024

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	SQN	**SECTION –I**	R/U/A	Co ITH 101	Marks
Q.1		Attempt any **THREE: (2 X 3)**			**06**
	a)	Define Web standards.	R	1	
	b)	State the use of Meta tags in HTML.	R	2	
	c)	Enlist five golden rules of web designing.	R	1	
	d)	Explain how to create a hyperlink in HTML.	R	3	
	e)	Enlist any four Block level Elements in HTML.	R	2	
Q.2		Attempt any **FOUR: (4 X 4)**			**16**
	a)	Explain Planning Process in web development.	U	1	
	b)	Write a Program to demonstrate use of structure tags in HTML.	A	2	
	c)	State and explain the steps to write and execute a HTML document.	U	1	
	d)	Explain any four HTML Text level elements with example.	U	2	
	e)	Explain following web terminologies: i.Web Browser ii.URL iii.Web Server iv.Search Engine	U	1	
	f)	Explain HTML image maps with suitable example.	U	3	
Q.3		Attempt any **TWO: (6 X 2)**			**12**
	a)	Write a Program to insert special Characters in the web page. Also add comments in the webpage.	A	2	
	b)	Explain absolute URL and relative URL with suitable example.	U	3	
	c)	Write a Program to insert image in the web page. Set all its attributes.	A	3	

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SUMMER- 2024

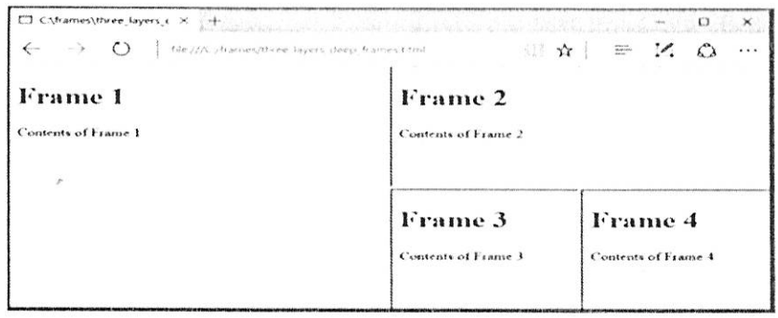
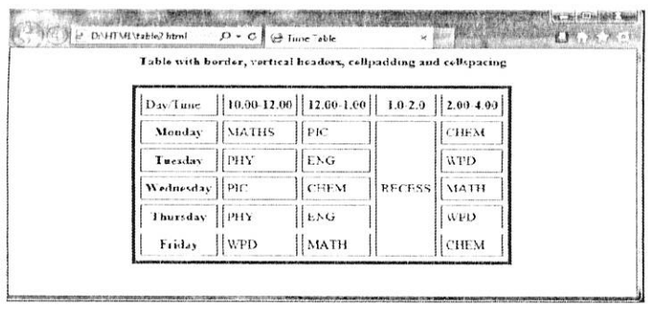
EXAM SEAT NO. | | | | | | |

LEVEL : - FIRST PROGRAM : INFORMATION TECHNOLOGY

COURSE CODE :- ITH101

COURSE NAME :- WEB PAGE DESIGN

MAX. MARKS : 70 TIME : **03 Hrs** DATE :- 15/5/2024

QN	SQN	Question Text	R/U/A	Co ITH 101	Marks
Q.4		Attempt any **FOUR: (2 X 4)**			**08**
	a)	Write syntax for inserting a Frame in web page	U	4	
	b)	Write the properties of Style sheet	R	5	
	c)	List types of form fields	R	4	
	d)	Explain the concept of CSS Selector	U	5	
	e)	Write the advantages of using Frames	R	4	
	f)	Enlist different types of style sheet	R	5	
Q.5		Attempt any **FOUR: (4 X 4)**			**16**
	a)	Define CSS. How we can access external .css file in our webpage?	U	5	
	b)	Differentiate between interactive and non-interactive websites	U	6	
	c)	Write a HTML code to create Registration Form	A	4	
	d)	Explain the font property of style sheet with syntax	U	5	
	e)	Explain the term Bootstrap in detail	U	6	
	f)	Write HTML Code to display following output using frameset tag 	A	4	
Q.6		Attempt any **TWO: (6 X 2)**			**12**
	a)	Write a program to create HTML table having border as below or similar table givenby teacher implementing above table tags. 	A	4	
	b)	Explain process of hosting website on Internet	U	6	
	c)	Write CSS code that define five classes of paragraph with different background, color, margins, padding and border style	A	5	

Day/Time	10.00-12.00	12.00-1.00	1.0-2.0	2.00-4.00
Monday	MATHS	PIC	RECESS	CHEM
Tuesday	PHY	ENG		WPD
Wednesday	PIC	CHEM		MATH
Thursday	PHY	ENG		WPD
Friday	WPD	MATH		CHEM

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GOVERNMENT POLYTECHNIC, KOLHAPUR – 416004

(An Autonomous Institute of Govt. Of Maharashtra)

SUMMER 2024

EXAM SEAT NO. | | | | | | |

LEVEL : - **First** PROGRAM : **Information Technology**

COURSE CODE : **ITG101/ITF102**

COURSE NAME : **C Programming**

MAX. MARKS : **80** TIME : **3 HRS.** DATE :- **15 May 2024**

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	Marks
Q.1		Attempt any **FOUR:**			**08**
	a)	List any four data types available in C.	R	1	
	b)	Differentiate between the variable and constant.	U	1	

	c)	Write output of following c code
		void main()
		{
		int x=4, y, z;
		y=+ +x ;
		printf("x = % d y = % d," x,y);
		}
			U	1	

	d)	List any four input and output library functions.	R	1	
	e)	Write syntax of if-else ladder.	R	2	
	f)	List categories of function.	U	3	
Q.2		Attempt any **FOUR:**			**16**
	a)	Write C program for displaying the message "Welcome to C"	A	1	
	b)	Write a C program to calculate factorial of given number using recursive function.	A	3	
	c)	Write the name and symbol of any two unary operators and explain it with examples.	U	1	
	d)	List the advantages of using user defined function.	R	3	
	e)	Write syntax of switch –case statement and state the use of switch-case.	R	2	
	f)	Differentiate between while and do-while loop.	U	2	

P.T.O.

Q.3		Attempt any **FOUR:**			**16**
	a)	Write a program for taking percentage marks as an input and displaying the grades using if-else ladder.	A	2	
	b)	State the use of break and continue statement with example.	U	2	
	c)	List and explain any two logical operators along with their symbols and use.	R	1	
	d)	Differentiate between call by value and call by reference parameter passing techniques.	U	3	
	e)	Write a program to calculate the simple interest.	A	1	
	f)	Write a program to find if given number is even or odd using user defined function.	A	3	
Q.4		Attempt any **FOUR:**			**08**
	a)	Define and declare two dimensional Array.	R	4	
	b)	State the use of structure.	R	6	
	c)	Identify errors, in the following array declaration statement i) int score (100) ; ii) float values [10,15] ;	A	4	
	d)	Explain the need of Array.	U	4	
	e)	Write syntax for declaration of char array.	R	5	
	f)	Define pointer.	R	6	
Q.5		Attempt any **FOUR** :			**16**
	a)	Write a 'C' program using following simple structure which assigns values for structure members and display it.[Use structure members: int id, float marks ,char grade, int rank]	A	6	
	b)	Explain following string handling function. i)strcpy( ) ii) strcmp( )	U	5	
	c)	Write a syntax for declaration of pointer and initializion of pointer variable.	R	4	
	d)	Write a program to compute sum of all elements stored in an array.	A	4	
	e)	Write a program for defining a structure that consists of information of a student –roll no, name, marks. Implement code to get and display information of a student.	A	6	
	f)	Explain how to pass an array to a function.	U	4	
Q.6		Attempt any **FOUR:**			**16**
	a)	Write a program to search an element in array of 10 integers.	A	4	
	b)	State the use of gets() and puts() functions.	R	5	
	c)	Illustrate with example accessing a variable through its pointer.	U	6	
	d)	Write a program to reverse characters of an input string.	A	5	
	e)	Explain with example strcat() function.	U	5	
	f)	Write a program to calculate addition of 3x3 matrix.	A	4	

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EVEN TERM END EXAM SUMMER -2024

EXAM SEAT NO. | | | | | | |

LEVEL : - **FIRST** PROGRAM : **INFORMATION TECHNOLOGY**

COURSE CODE :- **ITG104/ITF104**

COURSE NAME **BASIC ELECTRONICS**

MAX. MARKS : **40** TIME : **02Hrs.** DATE :- **25 / 05 / 2024**

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 104	Marks
Q.1		Attempt any **FOUR:**			**08**
	a)	Define active and passive components with one example each.	R	1	
	b)	Define Intrinsic and Extrinsic semiconductors.	R	2	
	c)	State the need of filters in regulated dc power supply. (any two points)	R	3	
	d)	Draw the circuit diagram of full wave bridge rectifier.	U	3	
	e)	Define doping and enlist the types of impurities.	R	2	
	f)	Draw the VI characteristics of Zener diode in forward and Reverse bias mode.	U	2	
Q.2		Attempt any **FOUR:**			**16**
	a)	State the applications and specifications of (two points each) i) Inductor ii) Capacitor	U	1	
	b)	Enlist the applications of Zener diode (any four)	A	2	
	c)	Draw and explain the pin diagram of 7805 and 7905 regulator IC.	U	3	
	d)	State the applications of single stage amplifier.	R	4	
	e)	Draw and explain the VI characteristics of PN Junction diode in forward and reverse bias mode.	U	2	
	f)	Draw and explain working of single stage amplifier with neat lebelled diagram.	U	4	
Q.3		Attempt any **FOUR:**			**16**
	a)	Determine the value of resistance with the following colour codes: i) Red, Red, Orange, Gold ii) Brown, Black, Black, Silver	A	1	
	b)	Draw and explain Zener diode as a voltage regulator with neat circuit diagram.	A	2	
	c)	Draw circuit diagram and describe the operation of CLC filter using full wave bridge rectifier with input and output waveforms.	A	3	
	d)	Describe working of transistor as a switch with neat and lebelled circuit diagram.	A	4	
	e)	Compare Half Wave Rectifier (HWR) and center tap Full Wave Rectifier (FWR)	A	3	
	f)	Give the following parameter values corresponding to full wave Bridge rectifier. i) Average dc output voltage. ii) Transformer Utilisation Factor. iii) Rectifier Efficiency. iv) Peak Inverse voltage.	A	3	

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SUMMER- 2024

EXAM SEAT NO. | | | | | | |

LEVEL : - FIRST PROGRAM : Information Technology

COURSE CODE :- ITG102

COURSE NAME :- WEB PAGE DESIGNING

MAX. MARKS : **40** TIME : **02 Hrs** DATE :- 24/5/2024

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	SQN	Question Text	R/U/A	Co ITG102	Marks
Q.1		Attempt any **FOUR:**			**08**
	a)	List the different browsers.	R	1	
	b)	Define URL.	R	2	
	c)	Write term inline image.	R	3	
	d)	State use of an iframe tag.	R	4	
	e)	Write the properties of Style sheet.	R	5	
	f)	Write the concept of CSS Selector.	R	5	
Q.2		Attempt any **FOUR:**			**16**
	a)	Write the basic structure of the HTML web Page	R	1	
	b)	Explain Anchor tag with its attributes.	U	2	
	c)	Explain text animation with MARQUEE element.	U	3	
	d)	Explain FORM field in detail.	U	4	
	e)	Explain Checkbox control& Radio button control in HTML Form.	U	4	
	f)	How to link CSS to HTML? Explain with example.	A	5	
Q.3		Attempt any **FOUR:**			**16**
	a)	Explain how you can set an image as a background on web pages with example.	A	1	
	b)	Write Html code to generate following output. **Ordered List :** 1. HTML 2. CSS 3. Bootstrap 4. JavaScript	A	2	
	c)	Explain image tag with its attributes.	U	3	
	d)	Write HTML code to create basic TABLE.	A	4	
	e)	State the features of HTML5.	U	5	
	f)	Write CSS code that define five classes of paragraph with different background, color, margins, padding and border style.	A	5	

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GOVERNMENT POLYTECHNIC, KOLHAPUR – 416004.

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WINTER / SUMMER- 2024

EXAM SEAT NO. | | | | | | |

LEVEL: - FIRST PROGRAM : INFORMATION TECHNOLOGY

COURSE CODE :- ITH105

COURSE NAME :- PROGRAMMING IN C

MAX. MARKS : 70 TIME : **03 Hrs** DATE :- 04/05/2024

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	SQN	**SECTION -I**	R/U/A	Co	Marks
Q.1		Attempt any **THREE: (2 X 3)**			**06**
	a)	Define type casting. Enlist the types of type casting.	R	1	
	b)	State any two differences between while and do-while loop.	R	2	
	c)	Define String.	R	3	
	d)	Write the syntax of declaration and initialization of an array.	R	3	
	e)	Enlist the types of Operators.	R	2	
Q.2		Attempt any **FOUR: (4 X 4)**			**16**
	a)	Describe general structure of 'C' program.	U	1	
	b)	Write a C program to display table of given number (Accept number from user).	A	2	
	c)	Explain the if- else- ladder statement with example.	U	2	
	d)	Explain one dimensional and two dimensional array with example.	U	3	
	e)	Write a C program for multiplication of two 3 × 3 matrices.	A	3	
	f)	Write a C program to calculate area and circumference of circle.	A	1	
Q.3		Attempt any **TWO: (6 X 2)**			**12**
	a)	Write a program to add, subtract, multiply and divide two numbers, accepted from user using switch case.	A	2	
	b)	Write a program to sort the elements of an array in ascending order.	A	3	
	c)	Write a C Program with an algorithm to determine the given number is odd or even.	A	1	

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GOVERNMENT POLYTECHNIC, KOLHAPUR – 416004.

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WINTER / SUMMER- 2024

EXAM SEAT NO. | | | | | | |

LEVEL : - FIRST PROGRAM : INFORMATION TECHNOLOGY

COURSE CODE: - ITH105

COURSE NAME: - Programming in C

MAX. MARKS: 70 TIME: **03 Hrs** DATE :-04/05/2024

QN	SQN	Question Text	R/U/A	Co ITH 105	Marks
Q.4		Attempt any **FOUR: (2 X 4)**			**08**
	a)	Clarify the situation: when a function returns a value that does not match with the return type of function?	A	4	
	b)	Write the use of indirection operator (*).	R	6	
	c)	Write syntax to define function in C program.	R	4	
	d)	Explain the use of ampersand (&) operator in pointers.	R	6	
	e)	What do you mean by recursion?	R	4	
	f)	Define Pointer	R	6	
Q.5		Attempt any **FOUR: (4 X 4)**			**16**
	a)	Explain strlen() and strcmp() string functions	U	4	
	b)	What is array of structure? Explain with example	U	5	
	c)	With suitable example, describe any two operations on pointer	U	6	
	d)	Write a program to display Fibonacci series up to given number using function.	A	4	
	e)	Write a program to declare a structure book having data members, title, author and price. Accept data and display information for one book.	A	5	
	f)	Explain declaration and initialization of pointer variable	A	6	
Q.6		Attempt any **TWO: (6 X 2)**			**12**
	a)	Write a program to calculate factorial of a number using recursion.	A	4	
	b)	Describe how to access and initialize structure members with example.	A	5	
	c)	Write a program to swap the values of two integer numbers using pointer	U	6	

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EVEN TERM END EXAM SUMMER -2024

EXAM SEAT NO. | | | | | | |

LEVEL : - **THIRD** PROGRAM : **INFORMATION TECHNOLOGY**

COURSE CODE :- **ITG305/ITF305**

COURSE NAME **DATABASE MANAGEMENT SYSTEM**

MAX. MARKS : **80** TIME : **03Hrs.** DATE :- **21/ 05 / 2024**

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 305	Marks
Q.1		Attempt any **FOUR:**			**08**
	a)	Define Relational Model.	R	1	
	b)	Write use of rename operation.	U	2	
	c)	Define instances and schemas.	R	1	
	d)	State the use of SELECT operation in Relational algebra.	R	2	
	e)	List any four mathematical functions.	U	3	
	f)	Define attribute. With example.	R	3	
Q.2		Attempt any **FOUR:**			**16**
	a)	Explain any four disadvantages of file processing system.	U	1	
	b)	Who is DBA? Explain functions of DBA.	R	1	
	c)	Explain Relational algebra with example.	R	2	
	d)	Write difference between DDL and DML statement with example.	U	2	
	e)	List and explain aggregate functions with suitable example.	U	3	
	f)	Illustrate Group by and Having clause with example.	A	3	
Q.3		Attempt any **TWO:**			**16**
	a)	Explain E-R diagram. Construct an E-R diagram for banking system.	A	1	
	b)	Explain Codd's Laws. Define RDBMS. List its feature. Explain any four.	U	2	
	c)	Consider following relational schema. Employee (empno, name, office, age) Books (isbn, title, autbors, publisher) Loan (empno, isbn, date) i) Find the names of employees who have borrowed a book published by MC-Graw-Hill? ii) Find the names of employees who have borrowed all books published by Mc-Graw-Hill? iii) Find the names of employees who have borrowed more than five different books published by Mc-Graw-Hill? iv) For each publisher, find the names of employees who have borrowed?	A	3	

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SUMMER- 2024

EXAM SEAT NO. | | | | | | |

LEVEL : - III PROGRAM : IT

COURSE CODE :- ITG305/ ITF305

COURSE NAME :- DATABASE MANAGEMENT SYSTEM

MAX. MARKS : **80** TIME : **03 Hrs** DATE :-21/5/2024

QN	SQN	Question Text	R/U/A	Co	Marks
Q.4		Attempt any **FOUR:**			**08**
	a)	Define Normalization in DBMS	R	4	
	b)	State the features PL/SQL	R	5	
	c)	Differentiate between PL/SQL Function & Procedure	U	5	
	d)	Give block-structure of PL/SQL and explain main components.	R	5	
	e)	List different Types of database Users	R	6	
	f)	Enlist Types of Failures in DBMS	U	6	
Q.5		Attempt any **FOUR:**			**16**
	a)	Explain the use of Grant and Revoke commands in Database Security.	A	6	
	b)	Explain 1NF and 2 NF Normalization forms.	A	4	
	c)	Explain Transitive dependency with suitable Example.	U	4	
	d)	Differentiate between SQL & PLSQL	U	5	
	e)	Explain ACID properties of Transaction.	U	6	
	f)	Write and explain syntax for creating Triggers.	A	5	
Q.6		Attempt any **FOUR:**			**16**
	a)	Draw and explain State diagram of Transaction.	U	6	
	b)	Write PL/SQL program to display Greatest number among three given numbers.	A	5	
	c)	Explain Functional Dependencies.	U	4	
	d)	Find Candidate key from given set of Functional Dependency's R(A,B,C,D,E,F) Functional Dependency's are {A→C,C→D,D→B,E→F}	A	4	
	e)	Explain CURSOR in PL/SQL & its types.	U	5	
	f)	Explain the use of Lock based protocols for Concurrency control	A	6	

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EVEN TERM END EXAM SUMMER -2024

EXAM SEAT NO. | | | | | | |

LEVEL : - **THIRD** PROGRAM : **INFORMATION TECHNOLOGY**

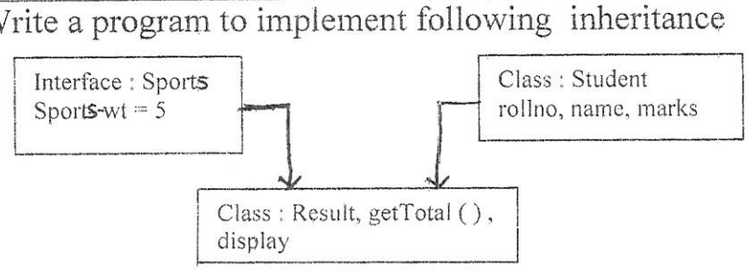
COURSE CODE :- **ITG311/ITF406**

COURSE NAME **JAVA PROGRAMMING**

MAX. MARKS : **80** TIME : **03Hrs.** DATE :- **20/ 05 / 2024**

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 311	Marks
Q.1		Attempt any **FOUR:**			**08**
	a)	Define method overloading and method overriding.	R	2	
	b)	State the features of interface.	R	3	
	c)	Enlist any two relational and logical operators.	R	1	
	d)	State the methods of Float Wrapper class	R	2	
	e)	Differentiate between class and interface. (any two points)	U	3	
	f)	Differentiate between Java and C++.	U	1	
Q.2		Attempt any **FOUR:**			**16**
	a)	Define class and object write syntax to create class and object with an example.	A	2	
	b)	Describe the process of using interface with example.	U	3	
	c)	Describe following features of Java : i) Robust and Secure ii) Complied and Interpreted	U	1	
	d)	Write naming conventions used for package.	R	3	
	e)	Design a package containing a class which defines a method to find area of Triangle. Import it in another application and display area.	A	3	
	f)	Explain following methods of string class. i) substring ( ) ii) replace ( )	U	2	
Q.3		Attempt any **FOUR:**			**16**
	a)	Differentiate between Array and Vector.	U	2	
	b)	Illustrate with example the use of switch statement.	U	1	
	c)	Write a program to implement following inheritance 	A	3	

P.T.O

	d)	Write a program to find sum of even and odd numbers from 1 to10.	A	1	
	e)	Write a program to implement single level inheritance.	A	2	
	f)	Define class Person with data members as name, Aadhar-no. Accept this data for 5 objects and print it using array of objects.	A	2	
Q.4		Attempt any **FOUR:**			**08**
	a)	List common compile time errors.	R	4	
	b)	Which are two ways to create threads?	R	4	
	c)	How does applet differ from application?	R	5	
	d)	Write a java code to display a frame.	U	5	
	e)	List any four methods of file Inputstream class.	R	4	
	f)	Define stream.	R	6	
Q.5		Attempt any **FOUR:**			**16**
	a)	Explain running and runnable states of thread.	U	4	
	b)	How do we start new thread by extending thread class? Give example.	A	4	
	c)	Develop java program creating thread using thread class.	A	4	
	d)	Explain applet life cycle.	U	5	
	e)	Explain different ways to draw polygon.	U	5	
	f)	Differentiate between Input stream class and Reader class.	U	6	
Q.6		Attempt any **FOUR:**			**16**
	a)	How will you create your own exception? Explain with example.	U	4	
	b)	Develop a java program to create two thread will print ascending number where second thread will pint descending number between 1 to 15.	A	4	
	c)	Explain steps in building and executing an applet. Give example.	U	5	
	d)	Explain drawRoundRect ( ), Fill RoundRect ( ) with example.	U	5	
	e)	Explain any for methods of file class with their use.	U	6	
	f)	Explain byte stream class in details.	U	6	

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GOVERNMENT POLYTECHNIC, KOLHAPUR – 416004.

(An Autonomous Institute of Govt. Of Maharashtra)

EVEN TERM END EXAM SUMMER -2024

EXAM SEAT NO. | | | | | | |

LEVEL : - **THIRD** PROGRAM : **INFORMATION TECHNOLOGY**

COURSE CODE :- **ITG302**

COURSE NAME **DIGITAL ELECTRONICS AND MICROPROCESSOR**

MAX. MARKS : **80** TIME : **03Hrs.** DATE :- **17/ 05 / 2024**

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 302	Marks
Q.1		Attempt any **FOUR:**			**08**
	a)	State the base and digits used in Binary, Octal, hexadecimal and decimal number system.	R	1	
	b)	State the meaning of SOP & POS forms.	R	2	
	c)	State the difference between combinational and sequential circuits.	R	3	
	d)	State the rules of binary addition.	R	1	
	e)	State the necessity of multiplexers.	R	2	
	f)	Draw the symbol of EX-OR and EX-NOR gates. Write their truth tables.	R	1	
Q.2		Attempt any **FOUR:**			**16**
	a)	State and prove De-Morgan's theorem.	U	1	
	b)	Draw the circuit of 1:4 multiplexer using gates and write truth table.	U	2	
	c)	Draw the circuit of SR flip-flop using transistors and explain it with truth-table.	U	3	
	d)	Do the following conversions i) Binary to Gray. (state the procedure) $(1011)_2$ = ------ $(1100)_2$ = ----- ii) Gray to Binary (state the procedure) $(1010)_2$ = ----- $(0111)_2$ = -----	A + R	1 2	
	e)	Realize all basic gates using NAND gate.	A	1	
	f)	Design half adder circuit using gates.	A	2	
Q.3		Attempt any **FOUR:**			**16**
	a)	Do the following conversions i) $(1010.101)_2 = (\text{-----})_{10} = (\text{-----})_{16}$. ii) $(56.45)_{10} = (\text{-----})_8 = (\text{-----})_2$. iii) $(ABCD)_{16} = (\text{-----})_8 = (\text{-----})_2$. iv) $(150.25)_{10} = (\text{-----})_{16} = (\text{-----})_8$.	A	1	

P.T.O.

	b)	$Y = \Sigma\, m\,(0,1,2,3,10,11,14,15)$ Simplify using K-map and realize using gates.	A	2	
	c)	Design 3 bit SISO Register.	A	3	
	d)	i) Do the following Conversions 1) $(A1.B2)_{16} = (\text{-----})_8 = (\text{-----})_2$. 2) $(45)_8 = (\text{-----})_{16} = (\text{-----})_2$. ii) $f = \Sigma\, m\,(0,1,2,3)$ Realize using gates.	A	1 2	
	e)	Draw the circuit of 3 bit synchronous up counter with waveforms. Write the count sequence.	A	3	
	f)	Design MOD 6 Asynchronous up counter. Write the count sequence.	A	3	

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GOVERNMENT POLYTECHNIC, KOLHAPUR – 416004.

(An Autonomous Institute of Govt. of Maharashtra)

SUMMER-2024

EXAM SEAT NO. | | | | | | |

LEVEL: - 03 PROGRAM: Information Technology

COURSE CODE: - ITG302

COURSE NAME: - Digital Electronics and Microprocessor

MAX. MARKS: **80** TIME: **03 Hrs** DATE: - 17/5/2024

QN	SQN	Question Text	R/U/A	Co	Marks
Q.4		Attempt any **FOUR:**		ITG302-	**08**
	a)	State features of microprocessor 8086 (any 4),	R	4	
	b)	Calculate the physical address generated by given logical address CS:IP = 4370H : 561EH	U	4	
	c)	Identify addressing modes of 1) MOV AL, [8000H] 2) MOV AX , [BX]	U	5	
	d)	Explain instruction DAA.	R	5	
	e)	Select instruction for each 1) Copy 1000H to register BX. 2) Multiply AL by 08H	A	5	
	f)	State difference between MUL and IMUL instructions.	R	5	
Q.5		Attempt any **FOUR:**			**16**
	a)	State functions of following pins – 1) $\overline{ALE}$ 2) $\overline{TEST}$ 3) DT/$\overline{R}$ 4) M / $\overline{IO}$	R	4	
	b)	Differentiate between minimum mode and maximum mode operation of 8086.	U	4	
	c)	Describe memory segmentation in 8086.	U	4	

	d)	What will be the contents of AX register after execution of following code:
		MOV AL, 10H
		MOV CL,04H
		ROR AL, CL
			A	5	

	e)	Write ALP to add two 8 bit numbers.	A	5	
	f)	Explain string instruction CMPSW with example.	U	5	
Q.6		Attempt any **FOUR:**			**16**
	a)	Explain the concept of pipelining in 8086 microprocessor.	U	4	
	b)	Compare CISC and RISC architecture.	U	4	
	c)	Draw architecture of 8086 and label it.	A	4	
	d)	Explain any two logical instructions with example.	U	5	
	e)	Write ALP to find smallest number from array of 5 numbers.	A	5	

	f)	Identify how many times loop will be executed in the following program? Write the contents of AL register after the execution of following program.
		MOV CL,05H
		MOV AL,00H
		Loop1: ADD AL,01H
		DEC CL
		JNZ Loop1
			A	5	

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GOVERNMENT POLYTECHNIC, KOLHAPUR – 416004.

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SUMMER-2024

EXAM SEAT NO. | | | | | | |

LEVEL : - FOURTH PROGRAM : INFORMATION TECHNOLOGY

COURSE CODE :- ITG402

COURSE NAME :- SOFTWARE TESTING

MAX. MARKS : **80** TIME : **03 Hrs** DATE :- 17/5/2024

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	SQN	**SECTION -I**	R/U/A	Co ITG 402	Marks
Q.1		Attempt any **FOUR:**			**08**
	a)	Define Software Quality.	R	1	
	b)	State purpose of testing.	U	1	
	c)	Draw classification of white box testing.	U	2	
	d)	List advantages of static testing.	R	2	
	e)	List levels of testing.	R	3	
	f)	Write advantages and disadvantages of Bi-directional testing.	U	3	
Q.2		Attempt any **FOUR:**			**16**
	a)	Explain principles of software testing.	U	1	
	b)	Explain code coverage testing.	R	2	
	c)	Describe working of boundary value analysis.	U	2	
	d)	Describe usability testing.	U	3	
	e)	Explain classification of performance testing.	R	3	
	f)	Explain subtests of security testing.	U	3	
Q.3		Attempt any **FOUR:**			**16**
	a)	Explain test case parameters with example.	R	1	
	b)	Compare quality assurance & quality control.	U	1	
	c)	Explain graph based testing.	U	2	
	d)	Compare white box testing & black box testing.	U	2	
	e)	Explain layers in client server testing.	R	3	
	f)	Compare alpha and beta testing.	U	3	

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SUMMER- 2024

EXAM SEAT NO. | | | | | | |

LEVEL : - FOURTH PROGRAM : Information Technology

COURSE CODE :- ITG402

COURSE NAME :- SOFTWARE TESTING

MAX. MARKS : **80** TIME : **03 Hrs** DATE :- 17/5/2024

QN	SQN	SECTION –II	R/U/A	Co ITG402	Marks
Q.4		Attempt any **FOUR:**			**08**
	a)	Define term test plan.	R	4	
	b)	Explain in short any 2 test management tools.	U	4	
	c)	State the advantages and disadvantages of defect management. (Any 2)	R	5	
	d)	Explain in short the any 2 stages of defect management process.	U	5	
	e)	State use of defect report.	R	5	
	f)	Define automation testing.	R	5	
Q.5		Attempt any **FOUR:**			**16**
	a)	Define the Test Management and explain concept of Test People Management.	R	4	
	b)	Describe defect life cycle with neat diagram.	U	5	
	c)	State various advantages and disadvantages of using manual testing ~~tools~~	U	5	
	d)	Describe different types of attributes of a Test Plan.	U	4	
	e)	Explain needs of automation testing	U	5	
	f)	Explain how summary report is prepared in test planning.	U	4	
Q.6		Attempt any **TWO:**			**16**
	a)	Prepare a Test Plan along with the Test Cases for the MS Word option 'Save As'. Test Cases should be at least six.	A	4	
	b)	Design any three test cases for railway reservation form and prepare defect report of it.	A	5	
	c)	Elaborate the concept of Software Metrics. Describe Product and Process metrics with suitable example	U	5	

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EVEN TERM END EXAM SUMMER-2024

EXAM SEAT NO. | | | | | | |

LEVEL : - **THIRD** PROGRAM : **INFORMATION TECHNOLOGY**

COURSE CODE :- **ITG310** / ITF310

COURSE NAME **DATA STRUCTURE**

MAX. MARKS : **80** TIME : **03Hrs.** DATE :- 16/5/2024

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 310	Marks
Q.1		Attempt any **FOUR:**			**08**
	a)	Define sorting.	R	2	
	b)	Define Time complexity and space complexity.	R	1	
	c)	Define stack.	R	3	
	d)	State the difference between linear and non linear data structure.	R	1	
	e)	State the purpose of quick sort and state its advantage.	R	2	
	f)	Convert the following infix expression into prefix form using stack. ~~A - B - C * D/E = F~~ (A-B)* (D/E)	A	3	
Q.2		Attempt any **FOUR:**			**16**
	a)	Write a C program to search a particular element from the given array using linear search.	A	2	
	b)	Describe Recursion and its data types.	U	1	
	c)	Write a C program to sort an integer array using bubble sort.	A	2	
	d)	Describe abstract data types.	U	1	
	e)	Describe the conversion of infix to postfix with example.	U	3	
	f)	Explain binary search technique with example.	U	2	
Q.3		Attempt any **FOUR:**			**16**
	a)	Describe linear search with example.	U	2	
	b)	List and explain operations on Data structure.	U	1	
	c)	State the applications of stack and explain any one.	A	3	
	d)	Explain the algorithm of Quick sort.	U	2	
	e)	Write an algorithm for performing push and pop operations on stack.	A	3	
	f)	Explain stack overflow and stack underflow conditions using example.	U	2	

P.T.O

QN	SQN	Question Text	R/U/A	Co ITG 310	Marks
Q.4		Attempt any **FOUR:**			**08**
	a)	Define Queue as abstract data type.	R	4	
	b)	State the meaning of Queue Full and Queue Empty with example.	U	4	
	c)	Define LinkedList. Give one example.	R	5	
	d)	Define priority Queue.	R	4	
	e)	Define length and cycle terms of Graph.	R	6	
	f)	What is Ancestor nodes and descendant nodes?	R	6	
Q.5		Attempt any **FOUR:**			**16**
	a)	Write a 'C' program to perform DELETE operation on Linear Queue.	A	4	
	b)	Explain the In-order traversal of the Binary tree traversal.	U	6	
	c)	Write 'C' program to perform Insert & Delete operations on singly Linked List.	A	5	
	d)	Explain Double Linked List with example.	U	5	
	e)	Write a 'C' program to implement Post order traverse operation Binary Search Tree (BST)	U	6	
	f)	Explain the sequential representation of Graph.	U	6	
Q.6		Attempt any **FOUR:**			**16**
	a)	With an example explain Double Ended Queue concept.	U	4	
	b)	Write 'C' program to perform Traverse and delete operation on circular singly linked list.	A	5	
	c)	Explain the Expression tree with example.	U	6	
	d)	Explain the working of Insert and Delete operation on circular Queue.	U	4	
	e)	Explain some terminologies of linked list. i) Node ii) Pointer iii) Data iv) Next.	U	5	
	f)	Explain terminologies of Graph i) Complete Graph ii) Strongly connected Graph.	U	6	

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GOVERNMENT POLYTECHNIC, KOLHAPUR – 416004

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SUMMER 2024

EXAM SEAT NO. | | | | | | |

LEVEL : - **First** PROGRAM : **Information Technology**

COURSE CODE : **ITG101/ITF102**

COURSE NAME : **C Programming**

MAX. MARKS : **80** TIME : **3 HRS.** DATE :- **15 May 2024**

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	Marks
Q.1		Attempt any **FOUR:**			**08**
	a)	List any four data types available in C.	R	1	
	b)	Differentiate between the variable and constant.	U	1	

	c)	Write output of following c code
		void main()
		{
		int x=4, y, z;
		y=+ +x ;
		printf("x = % d y = % d," x,y);
		}
			U	1	

	d)	List any four input and output library functions.	R	1	
	e)	Write syntax of if-else ladder.	R	2	
	f)	List categories of function.	U	3	
Q.2		Attempt any **FOUR:**			**16**
	a)	Write C program for displaying the message "Welcome to C"	A	1	
	b)	Write a C program to calculate factorial of given number using recursive function.	A	3	
	c)	Write the name and symbol of any two unary operators and explain it with examples.	U	1	
	d)	List the advantages of using user defined function.	R	3	
	e)	Write syntax of switch –case statement and state the use of switch-case.	R	2	
	f)	Differentiate between while and do-while loop.	U	2	

P.T.O.

Q.3		Attempt any **FOUR:**			**16**
	a)	Write a program for taking percentage marks as an input and displaying the grades using if-else ladder.	A	2	
	b)	State the use of break and continue statement with example.	U	2	
	c)	List and explain any two logical operators along with their symbols and use.	R	1	
	d)	Differentiate between call by value and call by reference parameter passing techniques.	U	3	
	e)	Write a program to calculate the simple interest.	A	1	
	f)	Write a program to find if given number is even or odd using user defined function.	A	3	
Q.4		Attempt any **FOUR:**			**08**
	a)	Define and declare two dimensional Array.	R	4	
	b)	State the use of structure.	R	6	
	c)	Identify errors, in the following array declaration statement i) int score (100) ; ii) float values [10,15] ;	A	4	
	d)	Explain the need of Array.	U	4	
	e)	Write syntax for declaration of char array.	R	5	
	f)	Define pointer.	R	6	
Q.5		Attempt any **FOUR** :			**16**
	a)	Write a 'C' program using following simple structure which assigns values for structure members and display it.[Use structure members: int id, float marks ,char grade, int rank]	A	6	
	b)	Explain following string handling function. i)strcpy( ) ii) strcmp( )	U	5	
	c)	Write a syntax for declaration of pointer and initializion of pointer variable.	R	4	
	d)	Write a program to compute sum of all elements stored in an array.	A	4	
	e)	Write a program for defining a structure that consists of information of a student –roll no, name, marks. Implement code to get and display information of a student.	A	6	
	f)	Explain how to pass an array to a function.	U	4	
Q.6		Attempt any **FOUR:**			**16**
	a)	Write a program to search an element in array of 10 integers.	A	4	
	b)	State the use of gets() and puts() functions.	R	5	
	c)	Illustrate with example accessing a variable through its pointer.	U	6	
	d)	Write a program to reverse characters of an input string.	A	5	
	e)	Explain with example strcat() function.	U	5	
	f)	Write a program to calculate addition of 3x3 matrix.	A	4	

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GOVERNMENT POLYTECHNIC, KOLHAPUR – 416004

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/SUMMER 2024

EXAM SEAT NO. | | | | | | |

LEVEL: - **THIRD** PROGRAM: **INFORMATION TECHNOLOGY**

COURSE CODE: **ITG304** / IT304

COURSE NAME: **OOP USING C++**

MAX. MARKS: **80** TIME: **3 HRS.** DATE:- 14/5/2024

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	SQN	Question Text	R/U/A	CO ITG 304	Marks
Q.1		Attempt any **FOUR:**			**08**
	a)	Compare POP and OOP (Any 4 Points).	A	1	
	b)	Define Function.	R	1	
	c)	List down characteristics of Static member and method (Any Two)	R	2	
	d)	Define object and how do we create an object in java?	U	2	
	e)	Define Constructor.	R	3	
	f)	Enlist types of Constructors.	R	3	
Q.2		Attempt any **FOUR:**			**16**
	a)	Explain the structure of C++ Program with an example.	U	1	
	b)	Develop a C++ program to demonstrate use of call by reference.	A	1	
	c)	How to make outside function inline? Explain with Example.	U	2	
	d)	Write a C++ program to display names, rollno and grades of 3 students who have appeared in the examination. Declare the class of name, rollno and grade. Create an array of class objects. Read and display the contents of the array.	A	2	
	e)	Describe the term Copy constructor with suitable Example.	U	3	
	f)	Compare Constructor and Destructor.	A	3	
Q.3		Attempt any **FOUR:**			**16**
	a)	Develop a C++ program to demonstrate use of Switch case.	A	1	
	b)	Explain Function Overloading with suitable example.	U	1	
	c)	Explain Friend Function with suitable Example.	U	2	
	d)	Explain access specifiers are used in C++, explain with examples.	U	2	
	e)	Develop a C++ program to demonstrate use Parameterized Constructor.	A	3	
	f)	Explain Destructor with Example.			

P.T.O.

QN	SQN	Question Text	R/U/A	Co ITG 304	Marks
Q.4		Attempt any **FOUR:**			**08**
	a)	Define the term virtual base class.	R	4	
	b)	Define run time polymorphism.	R	5	
	c)	Enlist visibility modes available for inheritance.	R	4	
	d)	State the use of put( ) & get ( ) methods.	R	6	
	e)	Enlist the types of inheritance.	R	4	
	f)	State any two file opening modes with their meaning/use.	R	6	
Q.5		Attempt any **FOUR:**			**16**
	a)	Explain hybrid inheritance with example.	U	4	
	b)	Explain unary operator overloading using member function with example.	U	5	
	c)	Explain exception handling mechanism.	U	6	
	d)	Write a program to implement multiple inheritances.	A	4	
	e)	Write a program to implement following arithmetic operations on pointer. I) Increment pointer ii) Add any integer to pointer.	A	5	
	f)	Write a program to copy content of one file into another file.	A	6	
Q.6		Attempt any **FOUR:**			**16**
	a)	Explain binary operator overloading with example.	U	5	
	b)	Explain multilevel inheritance with example.	U	4	
	c)	Write a program to overload '+' operator to concatenate two strings.	A	5	
	d)	Enlist and explain any two classes for file stream operations.	U	6	
	e)	Differentiate between static polymorphism and dynamic polymorphism.	U	5	
	f)	Write a program to count number of lines in file.	A	6	

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SUMMER- 2024

EXAM SEAT NO. | | | | | | |

LEVEL : - FOURTH PROGRAM : INFORMATION TECHNOLOGY

COURSE CODE :- ITG406

COURSE NAME :- MOBILE APPLICATION DEVELOPMENT

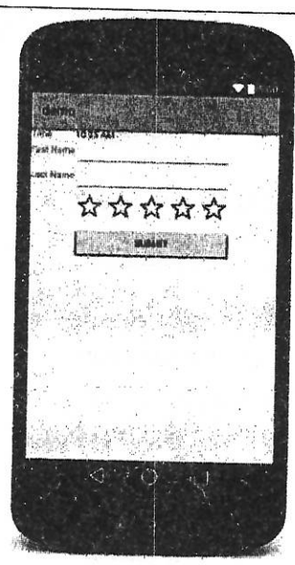
MAX. MARKS : **80** TIME : **03 Hrs** DATE :- 14/5/2024

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	SQN	SECTION -I	R/U/A	Co ITG406	Marks
Q.1		Attempt any **FOUR:**			**08**
	a)	List any four android versions.	R	1	
	b)	State difference between JAM & DVM. SYM typing mistake	U	2	
	c)	State use of JDK.	U	2	
	d)	Draw directory structure of android application.	A	3	
	e)	List additional components of android application.	R	3	
	f)	State use of strings.xml file.	U	3	
Q.2		Attempt any **FOUR:**			**16**
	a)	Describe android eco system.	U	1	
	b)	Draw and explain android architecture.	U	1	
	c)	Explain various installation steps of android studio.	A	2	
	d)	Describe role of emulators in android application development with example.	U	2	
	e)	Explain components of android application.	U	3	
	f)	Describe activity_main.xml file.	R	3	
Q.3		Attempt any **FOUR:**			**16**
	a)	Explain any four features of android.	R	1	
	b)	Describe tools used for developing android application.	U	1	
	c)	Explain Dalvik Virtual Machine.	U	2	
	d)	Explain types of operating system.	R	2	
	e)	Explain Frame Layout with its attribute.	U	3	
	f)	Create following UI with appropriate layout.	A	3	

PTO

9.3	f)				

QS32,31,38

GOVERNMENT POLYTECHNIC, KOLHAPUR – 416004.

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SUMMER- 2024

EXAM SEAT NO. | | | | | | |

LEVEL : - FOURTH PROGRAM : INFROMATION TECHNOLOGY

COURSE CODE :- ITG406

COURSE NAME :- MOBILE APPLICATION DEVELOPMENT

MAX. MARKS : **80** TIME : **03 Hrs** DATE :-14/5/2024

QN	SQN	SECTION –II	R/U/A	Co ITG 406	Marks
Q.4		Attempt any **FOUR:**			**08**
	a)	Write the methods of DatePicker.	U	4	
	b)	List all UI components.	R	4	
	c)	Draw the diagram of android activity life cycle.	A	5	
	d)	Define Service. Write its types with example.	U	5	
	e)	What is Sandboxing? * ~~Define SMS telephony in android~~	U	6	
	f)	Write code to give permission to receive SMS.	A	6	
Q.5		Attempt any **FOUR:**			**16**
	a)	Write the attributes of - a. Checkbox b. RadioButton	U	4	
	b)	Write a program for simple Calculator. (xml and java file)	A	4	
	c)	Explain architecture of multimedia framework.	U	5	
	d)	Write steps to get google API key for maps.	A	6	
✓	e)	Define Broadcast receiver. ~~Write a program to display battery low broadcast.~~ * with example.	U	5	
	f)	Elaborate steps to deploy an app on google play store.	A	6	
Q.6		Attempt any **FOUR:**			**16**
	a)	Write a program for display two textview , button and ratingbar.	A	4	
	b)	Write a program to navigate www.google.com using Button and EditText.	A	5	
✓	c)	Develop an application to send and ~~receive email~~. sms	A	6	
✓	d)	Write a program to display ~~toast when Bluetooth connectivity is on or off.~~ custom toast.	A	5	
	e)	Explain geocoding and reverse geocoding.	U	6	
	f)	Create a database having table player containing columns (jersey no, name, no. of matches played). Design a method to insert data and display information of player having jersey no. 10	A	5	

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GOVERNMENT POLYTECHNIC, KOLHAPUR – 416004.

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EVEN TERM END EXAM SUMMER -2024

EXAM SEAT NO. | | | | | | |

LEVEL : - **THIRD** PROGRAM : **INFORMATION TECHNOLOGY**

COURSE CODE :- **ITG308/ITF402**

COURSE NAME **SOFTWARE ENGINEERING**

MAX. MARKS : **80** TIME : **03Hrs.** DATE :- **13/ 05 / 2024**

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 305	Marks
Q.1		Attempt any **FOUR:**			**08**
	a)	Define term software engineering.	R	1	
	b)	Draw failure curve for software.	A	1	
	c)	List any four types of software.	R	1	
	d)	Define –SRS.	R	2	
	e)	Name two cost estimation approaches.	R	3	
	f)	Enlist activities during software project planning.	R	3	
Q.2		Attempt any **FOUR:**			**16**
	a)	With an example, explain line of code (LOC) based estimation.	A	3	
	b)	State and explain characteristics of software.	U	1	
	c)	Distinguish between RAD model and incremental model.	U	1	
	d)	Explain component based development.	U	1	
	e)	Draw proper labeled "LEVEL1 Data flow diagram" (DFD) for student attendance system.	A	2	
	f)	Explain facilitated Application Specification Technique (FAST) in requirement elicitation.	U	2	
Q.3		Attempt any **FOUR:**			**16**
	a)	Explain role of management in software development.	U	1	
	b)	Enlist Requirement Gathering and Analysis for web based project for registering candidates for contest (any four points)	A	2	
	c)	Describe COCOMO II Model for evaluating size of software project.	A	3	
	d)	Explain function and non-functional requirements.	U	2	
	e)	List and explain different types of software risks.	U	3	
	f)	Describe RMMM strategy.	U	3	

P.T.O

QN	SQN	Question Text	R/U/A	Co ITG 308	Marks
Q.4		Attempt any **FOUR:**			**08**
	a)	Define the term Bug with example.	R	5	
	b)	State the ISO 9001 standard.	R	5	
	c)	Define testing process.	R	5	
	d)	Enlist types of Design.	R	4	
	R	What is ripple effects?	R	5	
	f)	Write the objectives of design.	U	4	
Q.5		Attempt any **FOUR:**			**16**
	a)	Explain Module Coupling with its types.	U	4	
	b)	Explain Problems during maintenance.	U	5	
	c)	Explain Hybrid design strategy of software design.	U	4	
	d)	Explain Acceptance testing.	U	5	
	e)	Explain categories of maintenance.	U	5	
	f)	Describe six sigma strategy for Software Engineering.	U	5	
Q.6		Attempt any **FOUR:**			**16**
	a)	State and explain different levels of cohesion.	U	4	
	b)	Explain Functional Procedure layers in function Oriented Design.	U	4	
	c)	Define following terminologies i) Error ii) Mistake iii) Fault iv) Failure.	U	5	
	d)	Describe the term Reverse Engineering with its levels.	U	5	
	e)	Explain source code translation in software Re-engineering.	U	5	
	f)	Describe the term Maintainability in Software.	U	5	

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GOVERNMENT POLYTECHNIC, KOLHAPUR – 416004.

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EVEN TERM END EXAM SUMMER -2024

EXAM SEAT NO. | | | | | | |

LEVEL : - **THIRD** PROGRAM : **INFORMATION TECHNOLOGY**

COURSE CODE :- **ITG303/ITF303**

COURSE NAME **DATA COMMUNICATION**

MAX. MARKS : **80** TIME : **03Hrs.** DATE :- **11/ 05 / 2024**

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 303	Marks
Q.1		Attempt any **FOUR:**			**08**
	a)	Define Data communication.	R	1	
	b)	Enlist components of data communication.	R	1	
	c)	What is Attenuation?	R	2	
	d)	An analog signal carries 8 bits per signal element. If 1000 signal elements are per second, find bit rate.	A	2	
	e)	What is carrier signal?	R	3	
	f)	Draw a neat diagram of digital to analog conversion.	R	3	
Q.2		Attempt any **FOUR:**			**16**
	a)	With each layer's functionality illustrate OSI Model.	U	1	
	b)	Explain characteristics of data communication.	U	1	
	c)	Explain wavelength & bandwidth of analog signal.	U	2	
	d)	Describe transmission of digital signal.	U	2	
	e)	Describe phase shift keying.	U	3	
	f)	Describe frequency division multiplexing.	U	3	
Q.3		Attempt any **FOUR:**			**16**
	a)	Explain communication system components.	U	1	
	b)	Explain different data representation.	U	1	
	c)	Solve the following i) a periodic signal has a bandwidth of 20Hz. The highest frequency is 60Hz. What is lowest frequency? ii) A page is an average of 24 lines. We need to download a text document of 100 pages per minute. What is required bit rate of channel?	A	2	
	d)	Describe applications of analog signals.	U	2	
	e)	Explain phase modulation in detail.	U	3	
	f)	Describe wavelength division multiplexing.	U	3	

P.T.O

QN	SQN	Question Text	R/U/A	Co ITG 303	Marks
Q.4		Attempt any **FOUR:**			**08**
	a)	Enlist line coding schemes.	R	4	
	b)	Define data element and signal element.	R	4	
	c)	State unguided media. Enlist its types.	R	4	
	d)	Assuming odd parity, find the parity bit for the data units mentioned below : i) 1011010 ii) 0010110	R	5	
	e)	Define framing.	R	6	
	f)	Enlist protocols for noiseless and noisy channel.	R	6	
Q.5		Attempt any **FOUR:**			**16**
	a)	Explain the pulse code modulation.	U	4	
	b)	Define Hamming distance and state minimum hamming distance.	R	5	
	c)	Explain the process of error detection using block coding.	U	5	
	d)	Explain the concept of checksum.	U	5	
	e)	Explain the concept of bit stuffing and unstuffing.	U	6	
	f)	Explain Go-back-N ARQ protocol	.U	6	
Q.6		Attempt any **FOUR:**			**16**
	a)	Compare coaxial cable and fiber optic cable.	A	4	
	b)	Explain NRZ-L scheme.	U	4	
	c)	Explain the process of CRC with suitable example.	A	5	
	d)	Find the minimum hamming distance for following coding scheme	A	5	
	e)	Explain stop and wait protocol for noiseless channel.	A	5	
	f)	Compare stop-and-wait ARQ and Go-Back-N ARQ.	A	6	

Data Word	Code Word
00	00000
01	01011
10	10101
11	11110

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SUMMER- 2024

EXAM SEAT NO. | | | | | | |

LEVEL : - 5 PROGRAM : INFORMATION TECHNOGY

COURSE CODE :- ITG510

COURSE NAME :- LINUX ADMINISTRATION

MAX. MARKS : **80** TIME : **03 Hrs** DATE :- 10/5/2024

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	SQN	**SECTION –I**	R/U/A	Co	Marks
Q.1		Attempt any **FOUR:**			**08**
	a)	State the role of kernel.	R	ITG510-1	
	b)	State cd command syntax, two options with example.	R	ITG510-2	
	c)	State the command used to copy the file content to another file. Write syntax with example.	U	ITG510-2	
	d)	Write syntax of if command in shell script.	U	ITG510-3	
	e)	Define shell. Enlist different types of shell.	U	ITG510-3	
	f)	Write syntax of for looping in shell script.	R	ITG510-3	
Q.2		Attempt any **FOUR:**			**16**
	a)	Explain the common linux features.	U	ITG510-1	
	b)	Write the steps involved in the installation of linux OS.	R	ITG510-1	
	c)	Explain following file processing commands with syntax and example, i)paste ii) sort	U	ITG510-2	
	d)	Define vi Editor and explain its modes.	R	ITG510-2	
	e)	Write shell script program using while statement. Explain the steps to execute the shell script.	A	ITG510-3	
	f)	Write any two built in commands in shell with syntax and example.	U	ITG510-3	
Q.3		Attempt any **FOUR:**			**16**
	a)	Explain the relationship of shell, kernel and hardware with diagram.	U	ITG510-1	
	b)	Explain types of partitioning in Linux OS.	U	ITG510-1	
	c)	How can we create and delete directory in linux? Write commands with syntax, options and examples.	A	ITG510-2	
	d)	Explain head and tail command with syntax, example.	U	ITG510-2	
	e)	Explain types of shell variable with example.	R	ITG510-3	
	f)	Write a shell script using expr to perform arithmetic expression.	A	ITG510-3	

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SUMMER- 2024

EXAM SEAT NO. | | | | | | |

LEVEL : - FIFTH PROGRAM : INFORMATION TECHNOLOGY

COURSE CODE :- ITG510

COURSE NAME :- LINUX ADMINISTRATION

MAX. MARKS : **80** TIME : **03 Hrs** DATE :- 10/5/2024

QN	SQN	SECTION –II	R/U/A	Co ITG510	Marks
Q.4		Attempt any **FOUR:**			**08**
	a)	State role of system administrator.	R	4	
	b)	How to get super user status in Linux.	A	4	
	c)	Define init daemon.	R	5	
	d)	State uses of DNS server.	U	5	
	e)	State how to test apache installation.	U	5	
	f)	List DNS record types.	R	5	
Q.5		Attempt any **FOUR:**			**16**
	a)	Explain managing user accounts in Linux.	U	4	
	b)	Explain how to set and change permissions of file.	A	4	
	c)	Compare df and du command with example.	U	4	
	d)	Explain how samba server works in Linux.	R	5	
	e)	Describe how to configure apache web server.	U	5	
	f)	Explain working with ftp server.	U	5	
Q.6		Attempt any **FOUR:**			**16**
	a)	Describe how to change group ownership of folder with example.	A	4	
	b)	Explain disk management with RAID.	U	4	
	c)	Explain tar command with options.	R	4	
	d)	Explain DNS toolbox with its uses.	U	5	
	e)	Explain configuring DHCP client and server.	A	5	
	f)	State and explain uses of NFS server.	R	5	

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EVEN TERM END EXAM SUMMER -2024

EXAM SEAT NO. | | | | | | |

LEVEL : - **THIRD** PROGRAM : **INFORMATION TECHNOLOGY**

COURSE CODE :- **ITG307/ITF307**

COURSE NAME **OPERATING SYSTEM**

MAX. MARKS : **80** TIME : **03Hrs.** DATE :- **09/ 05 / 2024**

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	7	Marks
Q.1		Attempt any **FOUR:**			**08**
	a)	Define operating system and list open source operating system.	R	1	
	b)	State advantages of multitasking.	U	1	
	c)	Define system call.	R	2	
	d)	Draw layered approach of operating system.	U	2	
	e)	List advantages of threading.	R	3	
	f)	Define process.	R	3	
Q.2		Attempt any **FOUR:**			**16**
	a)	Explain distributed system.	U	1	
	b)	List and explain process management system calls.	U	2	
	c)	Describe working of command interpreter system.	R	2	
	d)	Explain file management system calls.	U	2	
	e)	Describe context switching.	R	3	
	f)	Draw and explain PCB data structure.	A	3	
Q.3		Attempt any **FOUR:**			**16**
	a)	Explain types and attributes of clustered systems.	U	1	
	b)	Describe peer to peer and client server distributed system.	R	1	
	c)	Explain I/O management.	U	2	
	d)	Describe system booting in detail.	U	2	
	e)	List and explain differences between long term scheduler and short term scheduler.	U	3	
	f)	Explain concept of mutual exclusion.	U	3	

P.T.O

QN	SQN	Question Text	R/U/A	Co ITG 307	Marks
Q.4		Attempt any **FOUR:**			**08**
	a)	Enlist the types of scheduling algorithms.	R	4	
	b)	Define ~~Demand~~ paging.	R	5	
	c)	Write down any two advantages of priority based scheduling.	R	4	
	d)	Define Deadlock.	R	5	
	e)	List the attributes of files.	R	5	
	f)	State i) Logical address space. ii) Physical address space.	R	5	
Q.5		Attempt any **FOUR:**			**16**
	a)	Describe Demand paging.	A	5	
	b)	Explain segmentation in detail.	U	5	
	c)	Explain the FCFS process algorithm in detail with the help of example.	U	4	
	d)	Describe the Deadlock prevention Methods.	U	4	
	e)	Explain contiguous memory allocation.	U	5	
	f)	Differentiate between preemptive and non-preemptive scheduling.	A	4	
Q.6		Attempt any **FOUR:**			**16**
	a)	Explain the necessary conditions for deadlocking.	U/A	4	
	b)	Compare Polling Vs Interrupts.	A	5	
	c)	Explain DMA in detail.	U	5	
	d)	Illustrate swapping in detail.	U/A	5	
	e)	How the structured directory system used for the file?	A	5	
	f)	Solve the following problem by using FCFS and Round Robin (RR) scheduling algorithm. Find the average waiting time for each algorithm .	A	4	

Process	Burst Time
P_1	10
P_2	3
P_3	7
P_4	5

Use time quantum = 4ms for Round Robin algorithm.

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EVEN TERM END EXAM SUMMER -2024

EXAM SEAT NO. | | | | | | |

LEVEL : - **FOURTH** PROGRAM : **INFORMATION TECHNOLOGY**

COURSE CODE :- **ITF404**

COURSE NAME **WEB TECHNOLOGY**

MAX. MARKS : **80** TIME : **03 Hrs.** DATE :- **04/ 05 / 2024**

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	SQN	SECTION -I	R/U/A	Co ITF 404	Marks
Q.1		Attempt any **FOUR:**			**08**
	a)	Define Web application.	R	1	
	b)	Write steps to create web forms.	R	1	
	c)	Define session.	R	2	
	d)	How can we initialize application variable?	R	2	
	e)	Write a connection string for OLEDB for Access.	R	3	
	f)	Differentiate between ADO & RDO.	R	3	
Q.2		Attempt any **FOUR:**			**16**
	a)	Develop ASP.NET using listbox checkbox label and button web control.	A	1	
	b)	Explain cookies with advantages and examples.	U	1	
	c)	Write down steps for adding web config file. Explain its content.	A	2	
	d)	Explain following method i) Map path Method ii) Transfer Method.	U	2	
	e)	Explain try --- catch block with example of ASP.NET	U	3	
	f)	Develop a program show, insert, update, delete using data adapter.	A	3	
Q.3		Attempt any **FOUR:**			**16**
	a)	Explain properties of text box web control with example.	U	1	
	b)	Define IIS. State its purpose. Explain its architecture.	U	1	
	c)	Develop a ASP.NET program to modify and delete cookies.	A	1	
	d)	Develop a program to transfer data from and page to another using session.	A	2	
	e)	Write down steps for creating global. asax file. Explain file content.	A	2	
	f)	Explain OLEDB & ODBC data access methods.	U	3	

P.T.O.

QN	SQN	SECTION –II	R/U/A	Co ITF 404	Marks
Q.4		Attempt any **FOUR:**			**08**
	a)	List the characteristics of repeater control.	A	3	
	b)	Define transaction.	R	4	
	c)	Explain CDONTS objects.	U	4	
	d)	Enlist applications of web services.	R	4	
	e)	Define term SGML, HTML.	U	5	
	f)	Write features of XML.	U	5	
Q.5		Attempt any **FOUR:**			**16**
	a)	Explain the term "XML as meta language".	U	5	
	b)	Describe XML document type definition in details.	R	5	
	c)	DeMonstrate structure of web services.	A	4	
	d)	State how you will create web service.	A	4	
	e)	Explain navigation in recordset.	R	3	
	f)	Write a web application that will display data in data grid in sorted order.	A	3	
Q.6		Attempt any **FOUR:**			**16**
	a)	Explain data table and data row with example in ASP.Net.	U	3	
	b)	Write the steps for binding data grid to control step by step.	A	3	
	c)	State how to Design a data base for any transaction.	A	4	
	d)	Describe creation of XML file using suitable data.	A	5	
	e)	Explain the term processing Directives of web services.	U	4	
	f)	State how will you classify web method of web services. Give suitable example.	A	4	

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/SUMMER- 2024

EXAM SEAT NO. | | | | | | |

LEVEL: - **FIFTH** PROGRAM: **INFORMATION TECHNOLOGY**

COURSE CODE: - **ITG506**

COURSE NAME: - **EMERGING TRENDS IN IT**

MAX. MARKS : **80** TIME : **03 Hrs** DATE :- 3/5/2024

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	SQN	SECTION -I	R/U/A	Co	Marks
Q.1		Attempt any **FOUR:**			**08**
	a)	State the concepts on which AI is built.	R	ITG506-1	
	b)	Define Intelligence.	R	ITG506-1	
	c)	Draw Architecture of Embedded Systems	U	ITG506-2	
	d)	Enlist advantages of ASIC	R	ITG506-2	
	e)	List the features of private block chain.	R	ITG506-3	
	f)	State the use of block chain in Medical Information System.	U	ITG506-3	
Q.2		Attempt any **FOUR:**			**16**
	a)	Write a note on scope of AI.	A	ITG506-1	
	b)	Write a note on Deep Learning.	A	ITG506-1	
	c)	Explain PCI with its applications.	U	ITG506-2	
	d)	Explain components of embedded system.	U	ITG506-2	
	e)	Compare public and private blockchain.	A	ITG506-3	
	f)	Describe the uses of block chain in various fields.	U	ITG506-3	
Q.3		Attempt any **FOUR:**			**16**
	a)	Describe approach of AI.	U	ITG506-1	
	b)	State advantages of AI.	U	ITG506-1	
	c)	Illustrate purpose of embedded system.	A	ITG506-2	
	d)	Explain AVR with its applications.	U	ITG506-2	
	e)	Write a note on bitcoin.	A	ITG506-3	
	f)	Explain the public key cryptosystem with a diagram.	A	ITG506-3	

P.T.O.

GOVERNMENT POLYTECHNIC, KOLHAPUR – 416004.

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SUMMER- 2024

EXAM SEAT NO. | | | | | | |

LEVEL : - Five PROGRAM : Information Technology

COURSE CODE :- ITG506

COURSE NAME :- EMERGING TRENDS IN IT

MAX. MARKS : **80** TIME : **03 Hrs** DATE :- 3/5/2024

QN	SQN	**SECTION –II**	R/U/A	Co	Marks
Q.4		Attempt any **FOUR:**			**08**
	a)	Define E-Business.	R	ITG506-4	
	b)	State the use of Aural Display.	R	ITG506-5	
	c)	Define Auditability.	R	ITG506-4	
	d)	State the use of debit card in E-commerce.	R	ITG506-4	
	e)	Define haptic display.	R	ITG506-5	
	f)	Define Augmented Reality.	R	ITG506-5	
Q.5		Attempt any **FOUR:**			**16**
	a)	Explain the features of E-commerce.	U	ITG506-4	
	b)	Describe E-commerce security system in detail.	U	ITG506-4	
	c)	Explain physiology and perception concept in Virtual Reality.	U	ITG506-5	
	d)	Explain Ecommerce payment systems – smart card and e-money.	A	ITG506-4	
	e)	How are the virtual reality system works? Explain with example.	A	ITG506-5	
	f)	Explain visualization techniques for augmented reality.	U	ITG506-5	
Q.6		Attempt any **FOUR:**			**16**
	a)	Explain E-business concept in detail.	U	ITG506-4	
	b)	Explain AR system and its functionality.	U	ITG506-5	
	c)	Write Applications of Virtual Reality.	A	ITG506-5	
	d)	Compare E-commerce with Traditional Commerce.(Any Four)	U	ITG506-4	
	e)	How the Paytm UPI system money transfers? Explain its working.	A	ITG506-4	
	f)	Explain the working of Mixed reality.	U	ITG506-5	

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WINTER/SUMMER-2024

EXAM SEAT NO. | | | | | | |

LEVEL: - **THIRD** PROGRAM: **INFORMATION TECHNOLOGY**

COURSE CODE: - **ITG306 / ITF306**

COURSE NAME: - **COMPUTER NETWORK**

MAX. MARKS : **80** TIME : **03 Hrs** DATE :-02/05/2024

QN	SQN		R/U/A	Co	Marks
Q.4		Attempt any **FOUR:**			**08**
	a)	Enlist IEEE standards.	R	ITG306-4	
	b)	State the function of TELENET	R	ITG306-4	
	c)	What is CIDR?	R	ITG306-5	
	d)	Define Socket.	U	ITG306-5	
	e)	Enlist Services of User Agent.	R	ITG306-6	
	f)	Enlist function provided by IMAP4 protocol.	R	ITG306-6	
Q.5		Attempt any **FOUR:**			**16**
	a)	Draw & explain standard ethernet MAC-sublayer format.	U	ITG306-4	
	b)	Explain Bluetooth architecture in detail.	U	ITG306-4	
	c)	Write an algorithm UDP socket client server communication.	A	ITG306-5	
	d)	Write a note on IPv4 address in details.	U	ITG306-5	
	e)	Compare pop and IMAP.	A	ITG306-6	
	f)	Draw and explain MIME header.	U	ITG306-6	
Q.6		Attempt any **FOUR:**			**16**
	a)	Compare Fast ethernet and Gigabit ethernet.	A	ITG306-4	
	b)	Explain IEEE 802.11 architecture.	U	ITG306-4	
	c)	Draw & explain TCP packet format.	U	ITG306-5	
	d)	Describe UDP Socket programming	A	ITG306-5	
	e)	Explain File Transfer Protocol	U	ITG306-6	
	f)	Draw & explain 2 scenarios of email with user agent and MTA	U	ITG306-6	

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GOVERNMENT POLYTECHNIC, KOLHAPUR – 416004.

(An Autonomous Institute of Govt. Of Maharashtra)

EVEN TERM END EXAM SUMMER -2024

EXAM SEAT NO. | | | | | | |

LEVEL : - **THIRD** PROGRAM : **INFORMATION TECHNOLOGY**

COURSE CODE :- **ITG306/ITF306**

COURSE NAME **COMPUTER NETWORK**

MAX. MARKS : **80** TIME : **03Hrs.** DATE :- **02/ 05 / 2024**

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 306	Marks
Q.1		Attempt any **FOUR:**			**08**
	a)	Define Active and Passive Network.	R	1	
	b)	Draw Mesh Topology	R	1	
	c)	Enlist Network Criteria.	R	1	
	d)	Enlist types of Unguided Media.	R	1	
	e)	Define physical address.	R	2	
	f)	Define Random Access.	R	3	
Q.2		Attempt any **FOUR:**			**16**
	a)	Explain client, server Network with neat diagram.	U	1	
	b)	Compare OSI Model and TCP/IP Protocol suite.	A	2	
	c)	For an Internet café having 10 computers, suggest easy installation topology setup. Draw diagram for it and justify your answer.	A	1	
	d)	Explain Local Area Network with neat diagram.	U	1	
	e)	Describe working of carrier sense Multiple access with its drawback.	U	3	
	f)	Identify the device which can be used to connect 2 segments of same computer network installed in Game zone café. Justify your Answer and explain working of that device.	A	2	
Q.3		Attempt any **FOUR:**			**16**
	a)	If a communication Link has 6 devices and it needs multiple access for transmission and expect collision avoidance, then suggest Random access method. Justify your answer.	A	3	
	b)	Explain physical and Data Link layer working OSI model.	U	2	
	c)	With neat diagram explain co-axial cable.	U	1	
	d)	Describe different network services.	U	1	
	e)	Differentiate between Hubs and bridges.	A	2	
	f)	Explain Random Access ALOHA with pure ALOHA.	U	3	

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GOVERNMENT POLYTECHNIC, KOLHAPUR – 416004.

(An Autonomous Institute of Govt. Of Maharashtra)

SUMMER/WINTER- 2024

EXAM SEAT NO. | | | | | | |

LEVEL : - IV PROGRAM : Information Technology

COURSE CODE :- ITG401/ITF401

COURSE NAME :- Network Administration

MAX. MARKS : **80** TIME : **03 Hrs** DATE :- 02/05/2024

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	SQN	**SECTION -I**	R/U/A	Co **ITG401**	Marks
Q.1		Attempt any **FOUR:**			**08**
	a)	Define name space and enlist its types.	R	2	
	b)	State how to select Network Protocol.	U	1	
	c)	State the use of BOOTP & RARP.	R	2	
	d)	Describe how computers are selected while designing home or small office network.	A	1	
	e)	List DHCP message types.	R	2	
	f)	Define Primary Server.	R	2	
Q.2		Attempt any **FOUR:**			**16**
	a)	Explain Address space of IPv6 and enlist address types	U	2	
	b)	Explain IP address assignment with diagram.	U	2	
	c)	Explain how to select networking protocol while designing home or small office network.	A	1	
	d)	Describe country domain with its diagram.	U	2	
	e)	Explain DSL with Diagram.	U	1	
	f)	Explain following processes. a. Mapping names to address. b. Mapping addresses to names	U	2	
Q.3		Attempt any **FOUR:**			**16**
	a)	Explain ISDN with diagram.	U	1	
	b)	Describe TCP/IP client configuration.	U	2	
	c)	Explain DHCP Message Type option.	U	2	
	d)	Enlist and explain different sections of DNS in internet.	U	2	
	e)	Explain. a. Question record b. Resource Record.	U	2	
	f)	Explain Resolver & Resolving name to IP address	U	2	

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GOVERNMENT POLYTECHNIC, KOLHAPUR – 416004.

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SUMMER/~~WINTER~~- 2024

EXAM SEAT NO. | | | | | | |

LEVEL : - IV PROGRAM : INFORMATION TECHNOLOGY

COURSE CODE :- ITG401/ITF401

COURSE NAME :- NETWORK ADMINISTRATION

MAX. MARKS : **40** TIME : **03 Hrs** DATE :-02/05/2024

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	SQN	**SECTION –II**	R/U/A	Co	Marks
Q.4		Attempt any **FOUR:**			**08**
	a	Define IP Security.	U	ITG401-5	
	b	What is object naming?	R	ITG401-3	
	c	Draw ISAKMP header format.	U	ITG401-5	
	d	State the use of Ipconfig.	R	ITG401-4	
	e	State limitations of a firewall.	R	ITG401-5	
	f	Define Encapsulating Security payload (ESP) Protocol.	U	ITG401-4	
Q.5		Attempt any **FOUR:**			**16**
	a	Explain LDAP notation.	U	ITG401-3	
	b	Explain Active Directory Architecture in detail.	A	ITG401-3	
	c	Write a note on preventing virus infections.	R	ITG401-4	
	d	Explain any four backup hardware devices in brief.	R	ITG401-4	
	e	Explain Authentication Header protocol.	U	ITG401-5	
	f	Explain Virtual Private Networks (VPN).	U	ITG401-5	
Q.6		Attempt any **FOUR:**			**16**
	a	Write a brief note on Global Catalog Server.	R	ITG401-3	
	b	Write a note on Backup software and its functions.	U	ITG401-4	
	c	Differentiate between Driver Updates and Software Upgrades.	U	ITG401-4	
	d	Discuss canonical names & globally unique identifiers in brief.	R	ITG401-3	
	e	Describe firewall with a neat diagram.	U	ITG401-5	
	f	Explain IPsec key management.	R	ITG401-5	