

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

WINTER / SUMMER 2024

EXAM SEAT NO.

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PROGRAM : INFORMATION TECHNOLOGY

LEVEL :- THIRD

COURSE CODE :- ITH303

COURSE NAME :- Object Oriented Programming using C++

MAX. MARKS : 70

TIME : 03 Hrs

DATE :- 3 /12 /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	S Q N	Question Text	R/ U/ A	Co ITH 303	Ma rks
Q.1		Attempt any THREE: (2 X 3)			06
	a)	State any two applications of OOP.	R	1	
	b)	Define Class and write the syntax for declaration of a class.	R	2	
	c)	Define Constructor. List types of Constructor.	R	3	
	d)	Define Destructors.	R	3	
	e)	State the use of scope resolution operator.	R	1	
Q.2		Attempt any FOUR: (4 X 4)			16
	a)	Differentiate between OOP and POP.	A	1	
	b)	Write a C++ program to create a class student having data members as name, rollno, age. Accept and display data for one student.	A	2	
	c)	Explain Parameterized Constructor with example.	U	3	
	d)	Describe the Structure of C++ program.	U	1	
	e)	Explain Static data members with example.	U	2	
	f)	Explain the characteristics of Friend function.	U	2	
Q.3		Attempt any TWO: (6 X 2)			12
	a)	Write a C++ program to find out whether the given number is Prime or not.	A	1	
	b)	Write a program to declare a class 'employee' containing data members 'emp-id' and 'salary'. Accept and display this data for 10 employees.	A	2	
	c)	Write to declare a class bank having the data members as name , acc_no and balance . Write constructor to initialize these data members. Use copy Constructor. Accept and display data for one object.	A	3	

P.T.O.

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QN	S Q N	Question Text	R/ U/ A	Co ITH 303	Ma rks
Q.4		Attempt any FOUR: (2 X 4)			08
	a)	Define Inheritance and Enlist the types of Inheritance.	R	4	
	b)	Define polymorphism with it's types.	R	5	
	c)	Give syntax and use of fclose () function.	R	6	
	d)	Define Function overloading and Operator overloading.	R	5	
	e)	Write syntax to define a derived class..	R	4	
	f)	Define file with it's operations.	R	6	
Q.5		Attempt any FOUR: (4 X 4)			16
	a)	Explain multilevel inheritance with an example.	U	4	
	b)	Differentiate between Run time and Compile time polymorphism.	A	5	
	c)	Write a C++ program to declare a class train with members as train_no and name. Accept and display data for one object of train. Use pointer to object to call functions of class.	A	5	
	d)	Write a C++ program to define a class "Student" having data members roll_no, name. Derive a class "Marks" from "student" having data members m1,m2, m3 ,total and percentage .Accept and display data for one student.	A	4	
	e)	Explain the rules for Virtual function.	U	5	
	f)	Describe the file modes used to perform file operations.	U	6	
Q.6		Attempt any TWO: (6 X 2)			12
	a)	Write a C++ program that copies the contents of one file into another file.	A	6	
	b)	Write a program in C++ to overload binary '+' operator to add 2 complex number using friend function of class.	A	5	
	c)	Write a program to implement multiple inheritance as shown in following Figure No. 1 <div style="text-align: center; margin: 10px 0;"> <div style="display: inline-block; border: 1px solid black; padding: 5px; margin: 5px;">Class : Subject 1 data mem : m1</div> <div style="display: inline-block; border: 1px solid black; padding: 5px; margin: 5px; margin-left: 20px;">Class : Subject 2 data mem : m2</div> <div style="display: inline-block; border: 1px solid black; padding: 5px; margin: 10px 0; margin-top: 10px;">Class : Result data mem : Total</div> </div> Accept and display data for one object of class result.	A	4	
