

	Pimpri Chinchwad Education Trust's Pimpri Chinchwad University Sate Maval, Pune	Record No.: ACAD/R/20
		Revision: 00
		Date: 10-02-2025
Class Test I Examination		

First Year B. Tech. (ALL)
Integral Calculus and Numerical Techniques (UBTFY102)
EVEN Semester (2024-25)

Total No. of Questions-02

Total No. of Printed Pages-01

[Time: 0 Hr. 45 min.]

[Max. Marks: 20]

PRN									
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Instructions:

IMP: Verify that you have received a question paper with correct course, code, branch etc.

- i. All questions are compulsory.
- ii. Assume suitable data wherever necessary.
- iii. Neat labeled diagrams must be drawn wherever necessary.
- iv. Figure to right indicates full marks.
- v. Use of a non-programmable calculator is allowed.

		Marks	CLO No.
Q.1	Attempt two of the following.	10	
A	Solve: $y(x^2y + e^x)dx - e^x dy = 0$	5	CO1
B	A resistance of 200 ohms, an Capacitance of 5 Farad are connected in series with a battery of 50 volts. Find the charge and current in a circuit. If $q = 0$, at $t = 0$.	5	CO1
C	The temperature of air is $30^\circ c$.The substance kept in air cools from $100^\circ c$ to $70^\circ c$ in 15 minutes .Find the time required to reduce the temperature of the substance upto $40^\circ c$.	5	CO1
Q.2	Attempt two of the following.	10	
A	Evaluate: $\int_0^{2\pi} \cos^4 x (1 - \cos 2x)^2 dx$	5	CO2
B	Evaluate : $\int_2^5 (x - 2)^3 (5 - x)^2 dx$	5	CO2
C	By using rule of DUIS, Prove that $\int_0^\infty \frac{e^{-x}}{x} (1 - e^{-ax}) dx = \log(1 + a)$; $a > -1$	5	CO2

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Class Test Examination		

First Year B. Tech. (ALL)
Object Oriented Programming (UBTFY116)
EVEN Semester (2024-25)

Total No. of Questions-02

Total No. of Printed Pages-01

[Time: 0 Hr. 45 min.]

[Max. Marks: 20]

PRN									
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		Marks	CLO No.
Q.1	Attempt two of the following.	10	
A ✓	Compare Procedural Oriented Programming (POP) & Object Oriented Programming (OOP).	5	1
B	What is the significance of using namespace std ? Explain Stream Insertion and Extraction operator in OOP.	5	1
C ✓	Write a C++ program to Check if a number is even or odd, take user input.	5	1
Q.2	Attempt two of the following.	10	
A ✓	Discuss access specifiers in detail (Private, Public, Protected) in C++.	5	2
B	What is a friend function in C++? How does a friend function access private data of a class? Explain with an example.	5	2
C	Write a program to define a Student class with name and roll_no, python, and CPP as data members. Add a public member function to accept data, and display student's details along with total marks.	5	2

****** End of Question Paper******

	Pimpri Chinchwad Education Trust's Pimpri Chinchwad University Sate Maval, Pune	Record No.: ACAD/R/20
		Revision: 00
		Date: 02-02-2025
Class Test Examination		

**First Year B. Tech. (ALL)
Engineering Physics (UBTFY103)
EVEN Semester (2024-25)**

Total No. of Questions-02

Total No. of Printed Pages-02

[Time: 0 Hr. 45 min.]

[Max. Marks: 20]

PRN										
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Instructions:

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- iii. Neat labeled diagrams must be drawn wherever necessary.
- iv. Figure to right indicates full marks.
- v. Use of a non-programmable calculator is allowed.

		Marks	CLO No.
Q.1	Attempt two of the following.	10	
A	(i) Explain the types of wavefronts with diagram. (3 Marks). (ii) Distinguish between Interference and diffraction? (2 Marks)	5	1
B	Derive the condition of maxima and minima in thin film (parallel sided film).	5	1
C	(i) A light ray of wavelength ($\lambda=6328 \text{ \AA}$) incident on a diffraction grating and diffracted at an angle of 30° . Find the value of grating element (d) for which the first order maximum is observed. (3 Marks)	5	1