Gandhi Institute of Engineering and Technology University, Odisha, Gunupur
(GIET University)

B. Tech (Fifth Semester - Regular) Examinations, November 2025

23BCMPC35003 – Ethical Software Engineering

(CSE(AIML))

Time: 3 hrs Maximum: 60 Marks

Answer ALL questions

(The figures in the right hand margin indicate marks)

PART – A **(2 x 5 = 10 Marks)**

Q.1. Answer ***ALL*** questions	CO #	Blooms Level
a. Distinguish between morality and law.	CO1	K1
b. Name any four types of intellectual property protections used in software engineering.	CO2	K2
c. What do you understand by the term 'Security-by-Design'?	CO3	K1
d. What does the term "Green Computing" primarily refer to?	CO4	K1
e. Give one example of a major ethical failure in a corporation.	CO5	K2

PART – B **(10 x 5 = 50 Marks)**

Answer ***ALL*** the questions	Marks	CO #	Blooms Level
2. a. Explain the responsibilities of software engineers toward stakeholders with suitable examples.	5	CO1	K1
b. What is Confidentiality in software ethics? Why is it important for software engineers?	5	CO1	K2
(OR)			
c. Discuss the V-Model with its verification and validation phases.	5	CO1	K1
d. Differentiate between the three variants of the COCOMO model used for software cost estimation.	5	CO1	K2
3.a. Discuss briefly about Whistleblowing, its ethical importance and Intellectual property rights.	5	CO1	K1
b. Explain the need for ethics in testing and debugging. State the responsibilities of software engineers.	5	CO2	K1
(OR)			
c. Discuss the major provisions of HIPAA and its importance in ensuring data privacy and security.	5	CO1	K1
d. Elaborate on the ethical issues associated with open-source software development and licensing.	5	CO2	K1
4.a. Explain the concepts of Reverse Engineering and Re-engineering. How do they contribute to software maintenance? Give examples.	5	CO2	K2
b. Explain the concept of a Data Flow Diagram (DFD) in software design. Draw and describe various levels of DFD using a suitable example.	5	CO2	K1
(OR)			
c. Explain the role of UML diagrams in software design. Discuss any two commonly used UML diagrams with examples.	5	CO2	K2
d. Define software reliability metrics and explain any two metrics in detail.	5	CO3	K1

5.a.	Explain the ethical concerns associated with automation and job displacement in emerging technologies.	5	CO3	K1
b.	What is the significance of explainable AI (XAI) in enhancing trust and ethical use of AI systems?	5	CO3	K2
	(OR)			
c.	Describe the role of organizations like NITI Aayog, IEEE, and the EU in governing ethical AI practices.	5	CO3	K2
d.	What are the challenges posed by intellectual property and data misuse in the context of technology ethics?	5	CO3	K2
6.a.	Discuss the core components of an organizational ethics framework.	5	CO4	K1
b.	Explain the role of ethical audits in strengthening corporate governance.	5	CO4	K2
	(OR)			
c.	Describe investigation and follow-up procedures for whistle-blower reports.	5	CO4	K2
d.	Differentiate between Ethics Audit and Compliance. Why is it important for organizations to balance both?	5	CO4	K2

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