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Printed Page:-3 **Subject Code:- AME0614**

Roll. No:

NOIDA INSTITUTE OF ENGINEERING AND TECHNOLOGY, GREATER NOIDA
(An Autonomous Institute Affiliated to AKTU, Lucknow)
B.Tech
SEM: VI - THEORY EXAMINATION (2025 - 2026)
Subject: Product Lifecycle Management

Time: 3 Hours **Max. Marks: 100**

General Instructions:

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

1. *This Question paper comprises of* ***three Sections -A, B, & C.*** *It consists of Multiple Choice Questions (MCQ's) & Subjective type questions.*

2. *Maximum marks for each question are indicated on right -hand side of each question.*

3. *Illustrate your answers with neat sketches wherever necessary.*

4. *Assume suitable data if necessary.*

5. *Preferably, write the answers in sequential order.*

6. *No sheet should be left blank. Any written material after a blank sheet will not be evaluated/checked.*

SECTION-A 20

1. Attempt all parts:-

(1.1) Conceptually, whole life product costs end when ..... (CO1, K1) 1

(a) the producer stops producing the product.
(b) the producer stops providing service & parts for the product.
(c) the consumer disposes of the product.
(d) the externality costs to society & the environment end.

(1.2) The process of checking whether the product meets requirements is called. (CO1, K1) 1

(a) Production
(b) Validation
(c) Support
(d) Conceptualization

(1.3) What is the full form of CAD? (CO2, K1) 1

(a) Computer aided Design
(b) Computer arts Design
(c) Computer arts Designing
(d) Computer assisted Design

(1.4) What happens to labour workforce when FMS (Flexible manufacturing system) concept is used? (CO2, K1) 1

(a) Increases
(b) Decreases
(c) Remains same
(d) Gradually increases with time

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(1.5) Which of the following is a major challenge in PLM implementation? (CO3, K1) 1

(a) System integration
(b) Data migration
(c) Employee training
(d) All of the above

(1.6) Which of the following is true for Inventory control? (CO3, K1) 1

(a) Economic order quantity has minimum total cost per order
(b) Inventory carrying costs increases with quantity per order
(c) Ordering cost decreases with lo size
(d) All the above

(1.7) Which of the following is not a challenge to internal benchmarking? (CO4, K1) 1

(a) Low performance improvement
(b) Internal bias
(c) It may not provide best-in-class comparison
(d) High performance improvement

(1.8) Who devised the term 'affinity diagram'? (CO4, K1) 1

(a) Deming
(b) Taguchi
(c) Crosby
(d) Jiro Kawakita

(1.9) Which document contains results of various risk management processes; it is often displayed in a table or spreadsheet format? (CO5, K1) 1

(a) risk register
(b) influence diagram
(c) process flow chart
(d) work breakdown structure

(1.10) Resource control manages:. (CO5, K1) 1

(a) Labor and materials
(b) Marketing
(c) Finance only
(d) Design only

2. Attempt all parts:-

(2.1) Explain stages of PLM.(CO1, K1) 2

(2.2) What is a geometric model? Mention its types.(CO2, K1) 2

(2.3) What is MVC? (CO3, K2) 2

(2.4) 2

Define cost management and explain its importance in construction projects. (CO4, K2)

(2.5) Define Risk analysis. (CO5, K1) 2

SECTION-B 30

Answer any one of the following:-

(3.1) What are the challenges of defining company PLM and implementing PLM software? (CO1, K2) 6

(3.2) What is the difference between CAD and PLM?(CO1, K2) 6

Answer any one of the following:-

(3.3) What is the check in and Check out activity? (CO2, K2) 6

(3.4) What is the impact of digital manufacturing? (CO2, K2) 6

Answer any one of the following:-

(3.5) Write a short note on Notification robot. (CO3, K2) 6

(3.6) Write a short note on synchronize robot. (CO3, K2) 6

Answer any one of the following:-

(3.7) Write the short note on Scatter diagram. (CO4, K2) 6

(3.8) Write a short note on Prioritization Matrices. (CO4, K2) 6

Answer any one of the following:-

(3.9) What is the significance of a risk organisation? (CO5, K2) 6

(3.10) "Insurance is risk transfer and risk sharing." Do you agree with this statement? Explain. (CO5, K2) 6

SECTION-C 50

4. Answer any one of the following:-

(4.1) Explain the major elements and drivers of PLM with suitable examples. (CO1,K2) 10

(4.2) Explain how PLM supports product conceptualization, validation, and production using an industrial example. (CO1, K3) 10

5. Answer any one of the following:-

(5.1) Discuss the Advantages and limitations of Production Planning? (CO2, K2) 10

(5.2) Explain how virtual testing can replace physical testing in product development with suitable examples. (CO2, K3) 10

6. Answer any one of the following:-

(6.1) What is Lifecycle Template Administration? Write down the steps to customize a lifecycle template. (CO3, K2) 10

(6.2) Explain how assessment of current systems and applications helps in identifying gaps before PLM implementation. (CO3, K3) 10

7. Answer any one of the following:-

(7.1) Discuss the relationship between cost estimation, budgeting, and cost control. (CO4, K2) 10

(7.2) Explain how environmental management practices reduce pollution at construction sites.(CO4, K3) 10

8. Answer any one of the following:-

(8.1) Explain the role of project manager in risk management. (CO5, K2) 10

(8.2) Define reinsurance. Briefly explain the role of reinsures and capital requirements. Illustrate the various types of reinsurance arrangements. (CO5, K3) 10