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Question Paper Code:U9206

B.E./B.Tech. DEGREE EXAMINATION, NOV 2024

Professional Elective

Mechanical Engineering

21MEV206 - NEW PRODUCT DEVELOPMENT

(Regulations 2021)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. If performance meets consumer expectations, the consumer is, CO1-U
(a) Satisfied (b) Dissatisfied
(c) Delighted (d) Happy
2. Finding new ways to create more satisfying products for customers is called CO1- U
(a) customer centered product development
(b) team based product development
(c) systematic product development
(d) concentration based development
3. Heat transfer problem depends on CO1- U
(a) Thermal conductivity (b) heat coefficient
(c) ambient temperature (d) All the above
4. The washer for the mechanical joint is an example of which of the following CO1- U
process.
(a) Progressive forming (b) Piercing
(c) Punching (d) Blanking
5. In Engineer's scales, designation M5 indicates CO1- U
(a) 1:200 (b) 1:20 (c) 1:100 (d) 1:50

6. What precise movement does CMM have? CO1- U
- (a) Precise progress in x coordinate
 (b) Precise progress in x and y coordinates
 (c) Precise progress in y and z coordinates
 (d) Precise progress in x, y and z coordinates
7. The commonly used frequency range for ultrasonic testing is CO1- U
- (a) 5Hz-10Hz (b) 10Hz-20Hz
 (c) 20kHz-10MHz (d) 50MHz -100MHz
8. Marketers have traditionally classified products on the basis of CO1- U
- (a) Durability, tangibility, and use. (b) affordability, tangibility, and use
 (c) availability, tangibility, and use (d) aesthetics, tangibility, and use
9. The importance of standard operating procedures is CO1- U
- (a) To ensure consistent execution of key processes.
 (b) Processes can only be improved if they are written down.
 (c) The Department Labour requires that all key processes be written down.
 (d) None of these
10. Concurrent engineering deals with carrying out the following activities, CO1- U
- (a) design and marketing (b) manufacturing and sales
 (c) design and re-engineering (d) design and manufacturing

PART – B (5 x 2= 10Marks)

11. Interpret Engineering Change Note (ECN). CO1-U
12. Differentiate DFMEA vs. PFMEA. CO1 -U
13. Explain a request for quotation (RFQ) CO1 -U
14. Describe purchase frequency. CO1 -U
15. List the importance of SOP. CO1 -U

PART – C (5 x 16= 80Marks)

16. (a) Outline about an Engineering Bill of Materials (EBOM) CO1 - U (16)
- Or
- (b) Illustrate the QFD and their application in industries. CO1 - U (16)
17. (a) Prioritize failure modes based on severity, frequency, and how easily you can detect the failure modes. CO1 - U (16)
- Or
- (b) Discuss about the fundamentals of FEA and Bend Analysis on a specified material. CO1 - U (16)
18. (a) Identify the Process of Request For Quotation (RFQ) CAD/CAM systems and optimizing production workflows. CO3 -App (16)
- Or
- (b) Apply drafting and design that are used in product development. CO4 -App (16)
19. (a) Select the Magnetic Particle Testing (MPT) on product design and development of a new product. CO4 - App (16)
- Or
- (b) Apply Horizontal Deployment as Problem Solving Technique in industry. CO4 U (16)
20. (a) Apply Reverse Engineering approach in a new product development. CO5 - App (16)
- Or
- (b) Develop Cloud points and convert the cloud data into a 3D model CO5- App (16)

