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**Question Paper Code : 90465**

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2019  
Fifth Semester

Aeronautical Engineering

OMF551 – PRODUCT DESIGN AND DEVELOPMENT

(Common to Agriculture Engineering/Automobile Engineering/Electrical and  
Electronics Engineering/Industrial Engineering/Industrial Engineering and  
Management/Materials Science and Engineering/Mechanical Engineering/  
Medical Electronics/Robotics and Automation Engineering/Fashion Technology/  
Food Technology/Handloom and Textile Technology/Information Technology/  
Pharmaceutical Technology/Plastic Technology/Polymer Technology/  
Textile Chemistry/Textile Technology/Biomedical Engineering/Computer Science  
and Engineering/Computer and Communication Engineering/Electronics and  
Communication Engineering/Electronics and Instrumentation Engineering/  
Electronics and Telecommunication Engineering/Instrumentation and Control  
Engineering/Manufacturing Engineering/Marine Engineering/  
Mechatronics Engineering/Production Engineering/Bio Technology)  
(Regulations 2017)

Time : Three Hours

Maximum : 100 Marks

Answer ALL questions

PART – A

(10×2=20 Marks)

1. What are the needs for IPPD ?
2. What is process management ?
3. What is concept generation ?
4. What do you mean by concept selection ?
5. What is Product Development Management ?
6. Define Product Architecture.
7. What is industrial design ?
8. What is robust design ?
9. What is project baseline ?
10. What is economic analysis ?



## PART – B

(5×13=65 Marks)

11. a) Who are members of Integrated Product Teams ? State their roles in IPPD approach.

(OR)

b) What is Integrated Product and Process Development ? State the advantages and key factors involved in success of IPPD.

12. a) Explain the stages of concept selection process.

(OR)

b) Discuss the structured approaches towards concept generation and selection.

13. a) i) Discuss geometric layout development. (7)

ii) Discuss product performance. (6)

(OR)

b) Explain the process of the product architecture. Also, discuss about its advantages.

14. a) Discuss about the design criteria in Industrial Design.

(OR)

b) i) Discuss about typical customer needs for a product or service. (7)

ii) Explain management of industrial design process. (6)

15. a) What is Prototyping ? Enumerate the steps involved in prototyping. Also, discuss about benefits of prototyping.

(OR)

b) Explain estimation of manufacturing cost.

## PART – C

(1×15=15 Marks)

16. a) Discuss integrating CAE, CAD, CAM tools for industrial design.

(OR)

b) Explain creating detailed interface specifications for product architecture.