Reg.No. \_\_\_\_\_\_\_\_\_\_\_\_



**UNIVERSITY**

(Karunya Institute of Technology & Sciences)

(Declared as Deemed-to-be University under Sec.3 of the UGC Act, 1956)

**End Semester Examination – April/May– 2017**

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| **Code :** | **14ME2045** | **Duration :** | **3hrs** |
| **Sub. Name :** | **RAPID PROTOTYPING AND TOOLING** | **Max. marks :** | **100** |

**ANSWER ALL QUESTIONS (5 x 20 = 100 Marks)**

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| Q.No. | Sub Div. | Questions | Course  Outcome | Marks |
| 1. | a. | Distinguish between traditional prototyping and rapid prototyping. | CO1 | 10 |
| b. | Describe the industrial applications of RPT processes. | CO1 | 10 |
| (OR) | | | | |
| 2. | a. | Why is new product development needed? | CO1 | 5 |
| b. | Explain the phases of product development cycle. | CO1 | 15 |
| 3. | a. | Give the principle of liquid based rapid prototyping. | CO1 | 5 |
|  | b. | Describe the process flow of Polyjet system with a neat sketch. | CO2 | 15 |
| (OR) | | | | |
| 4. | a. | Explain the Principle, Process parameters and applications of Solid Groung Curing (SGC) with a neat sketch. | CO1 | 15 |
|  | b. | How are the supports of the ice part removed from the actual part? | CO1 | 5 |
| 5. | a. | What are the various LOM materials and their typical applications? | CO1 | 5 |
|  | b. | How is FDM used in RPT? What are the applications of FDM models? | CO1 | 15 |
| (OR) | | | | |
| 6. | a. | Compare MJM system with Benchtop system and write the advantages and disadvantages of each system | CO1 | 15 |
|  | b. | What are the advantages and disadvantages of solid based systems compared with liquid based systems? | CO1 | 5 |
| 7. | a. | Analyze the importance of powder structure in Selective Laser Sintering. | CO2 | 10 |
|  | b. | Compare LOM with SLS with suitable reasons. | CO1 | 10 |
| (OR) | | | | |
| 8. | a. | Describe Laser CUSING process. | CO2 | 12 |
|  | b. | List the Applications, advantages and disadvantages of Laser CUSING Process. | CO1 | 8 |
|  | | **Compulsory:** |  |  |
| 9. | a. | Distinguish between direct and indirect rapid tooling. | CO2 | 10 |
|  | b. | Elaborate on Rapid tooling applications in Automobile industry. | CO1 | 10 |

ALL THE BEST