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**UNIVERSITY**

(Karunya Institute of Technology & Sciences)

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

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

**End Semester Examination – Nov/Dec - 2016**

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|  |  | **Semester :** | **2016-17 ODD** |
| **Code :** | **09ME222** | **Duration :** | **3 hrs** |
| **Sub. Name :** | **RAPID PROTOTYPING** | **Max. marks :** | **100** |

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| **Q. No** | **Questions** | **Marks** |
| **PART-A(10X1=10 MARKS)** | | |
| 1. | Give some applications of rapid prototyping. | (1) |
| 2. | When was the first rapid prototyping machine introduced in the market? | (1) |
| 3. | What is meant by STL file? | (1) |
| 4. | Write any two strengths in SLA Process? | (1) |
| 5. | What are the three main steps in solid ground curing process? | (1) |
| 6. | List out the process parameters in Laminated Object Manufacturing process. | (1) |
| 7. | State the application of 3D printing. | (1) |
| 8. | Define Indirect tooling. | (1) |
| 9. | What is the use of epoxy tools? | (1) |
| 10. | Classification of RT methods. | (1) |

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| **PART B(5 X 3= 15 MARKS)** | | |
| 11 | Discuss about the classifications of RP systems, | (3) |
| 12 | List out the several roles involved in product development process. | (3) |
| 13 | Discuss about the applications of Fusion Deposition Modeling. | (3) |
| 14 | Write short notes on 3D printing. | (3) |
| 15 | What is meant by sand cast tooling? | (3) |

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| **PART C(5 X 15= 75 MARKS)** | | | |
| 16. |  | Explain the history of RP systems. | 15 |
| (OR) | | | |
| 17. |  | Discuss briefly about the fundamentals of rapid Prototyping. | 15 |
| 18. |  | Explain the principle and process details in stereo lithography systems with neat sketch. | 15 |
| (OR) | | | |
| 19. |  | With diagram explain the operation principle of and its application of Solid Ground Curing. | 15 |
| 20. |  | Describe in detail about the development of prototypes by laminated object manufacturing process with a neat sketch. | 15 |
| (OR) | | | |
| 21. |  | Explain the FDM process with a neat sketch, list the strength, weakness and applications. | 15 |
| 22. |  | With a neat sketch and explain the principle and process details in selective laser sintering (SLS). | 15 |
| (OR) | | |
| 23. |  | Sketch Laser Engineered Net Shaping (LENS) and explain the principle and applications. | 15 |
| 24. |  | Briefly explain about the Direct Metal Laser sintering. | 15 |
|  |  | (OR) |  |
| 25 |  | Explain the following |  |
|  | a | Silicone rubber tooling | 8 |
|  | b | Spray metal tooling | 7 |

ALL THE BEST