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Question Paper Code: 59051

B.E./B.Tech. DEGREE EXAMINATION, APRIL 2019

Interdisciplinary Elective Course

Mechanical Engineering

15UGM951 – SMART MANUFACTURING

(Common to Information Technology)

(Regulation 2015)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. Which country coined the term 'Industry 4.0' CO1- R
(a) India (b) China
(c) Canada (d) Germany
2. Cloud computing related with _____ CO1- R
(a) Industry 1.0 (b) Industry 2.0 (c) Industry 3.0 (d) Industry 4.0
3. _____ is not an example of additive manufacturing. CO2- R
(a) CNC (b) SLA (c) SLS (d) DMLS
4. _____ is known as the processes of extracting knowledge or design information from anything man-made and reproducing it based on the extracted information. CO2- R
(a) Re- Engineering (b) Reverse Engineering
(c) Both (a) and (b) (d) none of the above
5. Which of the following work is done by General purpose robot? CO3- R
(a) Part picking (b) Welding (c) Spray painting (d) All of the above
6. The main objective(s) of Industrial robot is to CO3- R
(a) To minimize the labour requirement (b) To increase productivity
(c) To enhance the life of production machines (d) All of the above

7. What is the size of the IPv6 addressed? CO4- R
 (a) 32 bits (b) 64 bits (c) 128 bits (d) 256 bits
8. Which is the input in IoT value chain? CO4- R
 (a) Devices/Sensors (b) Open Data (c) Corporate Databases (d) All the above
9. Example for private cloud vendor _____ CO5- R
 (a) Eucalyptus (b) Open nebula (c) Both a & b (d) None of the above
10. Cloud bursting used in _____ CO5- R
 (a) Private cloud (b) Public cloud (c) Hybrid cloud (d) All the above

PART – B (5 x 2= 10Marks)

11. List the elements of smart factory CO1- R
12. Write the advantages SLS method? CO2- U
13. List the various types of Robot coordination systems. CO3- U
14. Which technology do you think will make IoT a game changer in the future? CO4- R
15. How is hybrid cloud different from public cloud?. CO5- R

PART – C (5 x 16= 80Marks)

16. (a) Explain about CPS and IoT.. CO1-U (16)
 Or
 (b) Explain about the digital integration in smart factory CO1-U (16)
17. (a) What is meant by additive manufacturing? Explain about CO2-U (16)
 Selective Laser Sintering method with neat sketch and mention
 the advantages and disadvantages of this method.
 Or
 (b) With neat sketch explain about Material Jetting method and CO2-U (16)
 mention its advantages and disadvantages.
18. (a) Explain about robot applications in material transfer and machine CO3-Ana (16)
 loading.
 Or
 (b) Identify and discuss about social and labor issues related to CO3-Ana (16)
 robotic applications in modern manufacturing industry.

19. (a) Examine the applicability of future ICT-empowered interaction in rich Smart Grid. CO4- App (16)
- Or
- (b) In Smart Manufacturing, we talk a lot of intelligent information that moves out of the different levels more for analytics and decision-making. What about control from the top down based on information without human interference? CO4- App (16)
20. (a) Compare any four IaaS providers with respect to hypervisor technology, billing, scaling, and processor and API access. CO5- Ana (16)
- Or
- (b) Give a brief note on the three types of services rendered by cloud CO5- Ana (16)

