3rd Sem / Automation & Robotics

Subject : Auto CAD and 3 D Printing

Time : 3 Hrs.   M.M. : 60

SECTION-A

Note: Multiple choice questions. All questions are compulsory   (6x1=6)

Q.1   What is the main advantage of 3 D printing over traditional manufacturing methods?   (CO3)

    a)   Lower cost

    b)   Faster production speed

    c)   Ability to create complex geometries

    d)   More durable materials

Q.2   What is the term for the process of smoothing the surface of a 3D-printed object?   (CO4)

    a)   Finishing   b)   Polishing

    c)   Sanding   d)   Post-processing

Q.3   Origin of the AutoCAD drawing space is   (CO1)

    a)   0,0   b)   1,0

    c)   0,1   d)   1,1

SECTION-D

Note: Long answer type questions. Attempt any two questions out of three questions.   (2x8=16)

Q.23   Differentiate between UCS and WCS coordinates.   (CO1)

Q.24   Explain the concept of Vat Photo-polymerization including its principle, parameters, and advantages and limitations.   (CO4)

Q.25   Write short notes on   (CO5)

    i)   Wire -cut EDM

    ii)   In process testing

Q.4 A Polyline can be broken into individual lines and arcs using which of the following command?(CO2)

a) BREAK   b) TRIM

c) EXPLODE   d) OVERKILL

Q.5 Current 3D printing technology_____ (CO5)

a) Is unable to create objects with much strength

b) Is limited to plastic materials

c) Can print in an array of materials

d) Is unlikely to affect existing industries significantly

Q.6 Which file type is most commonly exported from CAD software? (CO2)

a) SLDRT   b) JPG

c) STL   d) X3G

SECTION-B

Note: Objective/ Completion type questions. All questions are compulsory. (6x1=6)

Q.7 Write the shortcut command for making splines. (CO2)

Q.8 Full form of WCS is _____. (CO1)

Q.9 3D printing technology is expanding and is now able to print metal parts. (T/F) (CO3)

Q.10 STL stands for_____. (CO3)

Q.11 Write any two applications of Additive Manufacturing. (CO4)

Q.12 Write names of open source 3D printing software. (CO4)

SECTION-C

Note: Short answer type questions. Attempt any eight questions out of ten questions. (8x4=32)

Q.13 Explain the procedure for saving a file in AutoCAD. (CO1)

Q.14 Name the applications where CAD software is commonly used. (CO2)

Q.15 What are the limitations of additive manufacturing over conventional manufacturing? (CO2)

Q.16 Why we use simulations in 3D printing? (CO3)

Q.17 Classify 3D printing based on the process used during printing. (CO3)

Q.18 Explain key parameters involved in Powder Bed Fusion technique. (CO4)

Q.19 What are the advantages of Direct Energy Deposition technique in 3D printing? (CO4)

Q.20 Describe the principle of Material Jetting in additive manufacturing. (CO4)

Q.21 Discuss Non-destructive testing used in 3D printing. (CO5)

Q.22 Explain ultrasonic tank. (CO5)