

Assignment-01(11)

The due date for submitting this assignment has passed.

Due on 2023-08-09, 23:59 IST.

Assignment submitted on 2023-07-24, 14:32 IST

1 point

Which of the following is/are **NOT** the popular term of reference for Additive Manufacturing?

- 3D Printing
- Digital Manufacturing
- Object Manufacturing
- Layered Manufacturing
- Coating Technology
- Rapid Prototyping

Yes, the answer is correct.

Score: 1

Accepted Answers:

Object Manufacturing

Coating Technology

1 point

The tools & fixtures used in an Additive Manufacturing process are _____ the object geometry.

- Independent to
- Opposite to
- Dependent to
- Similar to

Yes, the answer is correct.

Score: 1

Accepted Answers:

Independent to

1 point

The support is required to realize the _____ features of the objects. Identification of the region required support is carried out at the _____ stage.

- Overhanging, Preprocessing
- Non-overhanging, Preprocessing
- Overhanging, Post-processing
- Non-overhanging, Post-processing

Yes, the answer is correct.

Score: 1

Accepted Answers:

Overhanging, Preprocessing

1 point

As per the occurrence in an AM process put following operations in right order

1. Generation of support structure, 2. Preparation of STL file, 3. STL File manipulation, 4. Slicing of the STL file

- 3→2→4→1
- 2→3→1→4
- 4→3→1→2
- 2→3→4→1

No, the answer is incorrect.

Score: 0

Accepted Answers:

2→3→1→4

1 point

A digital image is composed of pixels. Similarly, an STL file is composed of _____ surfaces

- Spherical
- Rectangular
- Triangular
- Curved

Yes, the answer is correct.

Score: 1

Accepted Answers:

Triangular

1 point

Based on *Level*, *Form*, and *Accuracy*, a detailed CAD model of a cricket bat is a _____ type prototype.

- Complete, Virtual and Accurate
- Component, Virtual and Rough
- Complete, Virtual and Rough
- Component, Physical and Rough

Yes, the answer is correct.

Score: 1

Accepted Answers:

Complete, Virtual and Accurate

1 point

Invention of computer affected the _____.

- Virtual Prototyping
- Physical Prototyping
- Virtual Prototyping and Physical Prototyping both
- None of the above

Yes, the answer is correct.

Score: 1

Accepted Answers:

Virtual Prototyping and Physical Prototyping both

1 point

AM processes are inefficient for _____.

- Mass production
- Mass customization
- Fabricating Conformal Cooling Channels
- Fabricating Lattice Structures

Yes, the answer is correct.

Score: 1

Accepted Answers:

Mass production

1 point

The objects with tailored material properties known as:

- Functionally Gradual Motion
- Functional Group Technologies
- Functionally Grouped Objects
- Functionally Graded Materials

No, the answer is incorrect.

Score: 0

Accepted Answers:

Functionally Graded Materials

1 point

As per ASTM the AM processes are classified into _____ groups

- 7
- 9
- 5
- 11

Yes, the answer is correct.

Score: 1

Accepted Answers:

7

1 point

Select the correct statement/s

- The laser power used in Powder – bed Fusion process is lesser than the laser power used in vat photopolymerization
- The laser power used in Powder – bed Fusion process is more than the laser power used in vat photopolymerization
- The laser power used in Powder – bed Fusion process is more than the laser power used in Directed Energy Deposition

The laser power used in Powder – bed Fusion process is lesser than the laser power used in Directed Energy Deposition

No, the answer is incorrect.

Score: 0

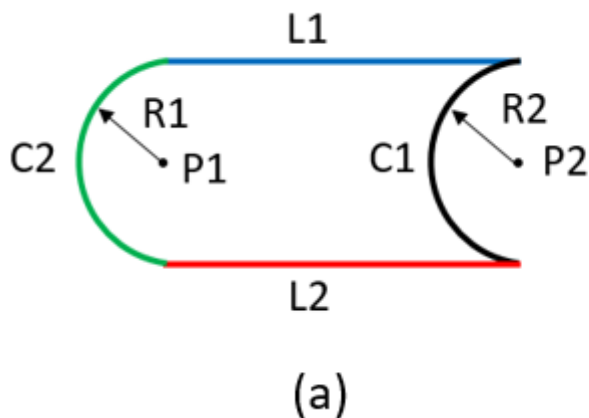
Accepted Answers:

The laser power used in Powder – bed Fusion process is more than the laser power used in vat photopolymerization

The laser power used in Powder – bed Fusion process is lesser than the laser power used in Directed Energy Deposition

1 point

The wireframes shown in Figure 'a' and 'b' have _____.



- different Geometry & same topology
- same Geometry & same topology
- different Geometry & different topology
- same Geometry & different topology

No, the answer is incorrect.

Score: 0

Accepted Answers:

same Geometry & different topology

1 point

The STL format is a _____ method of representing the solid.

- Constructive Solid Geometry (CSG)
- Boundary Representation (B-Rep)
- Feature Based Modeling (FBM)
- Space Decomposition (SD)

Yes, the answer is correct.

Score: 1

Accepted Answers:

Boundary Representation (B-Rep)

1 point

STL is **NOT** known by:

- Stereolithography
- Standard Triangle Language
- Standard Tessellation Language
- Shape Triangle Lithography

Yes, the answer is correct.

Score: 1

Accepted Answers:

Shape Triangle Lithography

1 point

Find the equation of the plane in the Vector form that can passes through the following points: (2, 2, 0), (2, 4, 2) and (-4, 4, -2).

- $2x+3y-3z=10$
- The three points are collinear hence multiple points can pass
- $4x-y-6z=10$
- $2x-3y+3z=-2$

No, the answer is incorrect.

Score: 0

Accepted Answers:

$2x+3y-3z=10$

Few lines of a triangle from the code of the ASCII format of an STL file are:

```
outer loop
  vertex 2.0 2.0 0.0
  vertex 2.0 4.0 2.0
  vertex -4.0 4.0 -2.0
end loop
```

Find out the unit vector in the direction of the facet normal of this triangle.

No, the answer is incorrect.

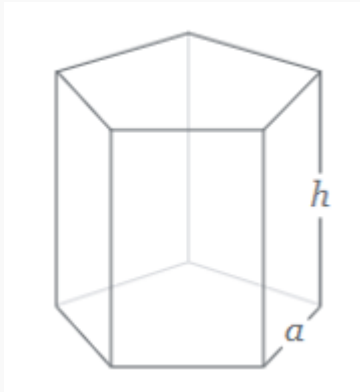
Score: 0

Accepted Answers:

(Type: String) $-4/\sqrt{352} (2i^{\wedge}+3j^{\wedge}-3k^{\wedge})$

1 point

1 point



How many triangles will be required to **EXACTLY** represent a pentagon prism in an STL format:

- 7
- 20
- 15
- None of the above

No, the answer is incorrect.

Score: 0

Accepted Answers:

20

1 point

How many triangles will be required for **deviation tolerance** to be 0.005 mm to represent a circle of 10 mm radius by STL format?

- ≈ 100
- ≈ 10
- ≈ 200
- ≈ 300

Yes, the answer is correct.

Score: 1

Accepted Answers:

≈ 100

1 point

How many triangles will be required for angle tolerance to be 0.5° to represent a cylinder of 1000 mm radius by STL format?

- ≈ 288
- ≈ 1440
- ≈ 2880
- ≈ 144

No, the answer is incorrect.

Score: 0

Accepted Answers:
≈2880

1 point

A vertex in the STL file can be shared by _____ number of triangles and an edge can be shared by _____ triangles.

- at most two, at most three
- at most two, any
- any, at most three
- any, at most two

No, the answer is incorrect.

Score: 0

Accepted Answers:
any, at most two