- 1. What is the fundamental difference between subtractive and additive manufacturing processes?
- a) Subtractive manufacturing builds objects layer by layer, while additive manufacturing removes material from a solid block.
- b) Subtractive manufacturing adds material to create objects, while additive manufacturing subtracts material from a solid block.
- c) Subtractive manufacturing removes material from a solid block, while additive manufacturing builds objects layer by layer.
- d) Subtractive manufacturing involves melting material to form objects, while additive manufacturing involves cutting material to shape.

Answer: c) Subtractive manufacturing removes material from a solid block, while additive manufacturing builds objects layer by layer.

Explanation: Subtractive manufacturing involves cutting away material from a solid block to form the desired shape, while additive manufacturing builds objects layer by layer using materials such as plastics, metals, or ceramics.

- 2. Which rapid prototyping method uses a vat of liquid resin and a UV light to solidify layers?
- a) Material Jetting
- b) Selective Laser Sintering
- c) VAT Photopolymerization
- d) Binder Jetting

Answer: c) VAT Photopolymerization

Explanation: VAT photopolymerization, also known as stereolithography (SLA), uses a vat of

liquid resin and a UV light source to solidify layers of the resin to create objects.

- 3. What is the primary material used in Direct Metal Laser Sintering (DMLS)?
- a) Plastic filament
- b) Metal powder
- c) Ceramic slurry
- d) Photopolymer resin

Answer: b) Metal powder

Explanation: Direct Metal Laser Sintering (DMLS) uses metal powder as the primary material, which is melted and fused together using a high-powered laser to create metal objects.

- 4. In which rapid prototyping method is a powder bed selectively fused together layer by layer using a laser or electron beam?
- a) Fused Deposition Modeling (FDM)
- b) Selective Laser Melting (SLM)
- c) Stereolithography (SLA)
- d) Inkjet 3D Printing

Answer: b) Selective Laser Melting (SLM)

Explanation: Selective Laser Melting (SLM) selectively fuses powdered material together layer by layer using a high-powered laser to create metal objects with high precision.

5. Which rapid prototyping method uses a print head to selectively deposit binder onto a powder bed to solidify layers?

- a) Material Jetting
- b) Selective Laser Sintering (SLS)
- c) Binder Jetting
- d) Continuous Liquid Interface Production (CLIP)

Answer: c) Binder Jetting

Explanation: Binder Jetting involves selectively depositing a liquid binder onto a powder bed to solidify layers, enabling the creation of objects with various materials such as metals, ceramics, and polymers.

- 6. What is the main advantage of continuous liquid interface production (CLIP) over traditional 3D printing methods?
- a) Faster printing speeds
- b) Higher resolution
- c) Lower cost of materials
- d) Reduced need for support structures

Answer: a) Faster printing speeds

Explanation: Continuous Liquid Interface Production (CLIP) allows for faster printing speeds compared to traditional 3D printing methods by using a continuous liquid interface to cure the resin, enabling rapid fabrication of objects.

- 7. Which rapid prototyping method involves extruding material through a heated nozzle to build layers?
- a) Stereolithography (SLA)
- b) Direct Metal Laser Sintering (DMLS)

- c) Fused Deposition Modeling (FDM)
- d) Selective Laser Melting (SLM)

Answer: c) Fused Deposition Modeling (FDM)

Explanation: Fused Deposition Modeling (FDM) uses a heated nozzle to extrude thermoplastic material layer by layer to create objects.

- 8. What is the primary advantage of material jetting in rapid prototyping?
- a) High printing speeds
- b) Wide range of materials
- c) Low cost of equipment
- d) Minimal post-processing required

Answer: b) Wide range of materials

Explanation: Material jetting allows for the use of a wide range of materials, including multiple colors and material properties, enabling the creation of complex prototypes with varied characteristics.

- 9. Which additive manufacturing method is particularly suitable for creating intricate geometries with high precision?
- a) Binder Jetting
- b) Selective Laser Sintering (SLS)
- c) Fused Deposition Modeling (FDM)
- d) Material Jetting

Answer: b) Selective Laser Sintering (SLS)

Explanation: Selective Laser Sintering (SLS) is particularly suitable for creating intricate geometries with high precision due to its ability to fuse powdered materials together layer by layer using a laser.

- 10. What distinguishes direct metal laser sintering (DMLS) from other metal additive manufacturing methods?
- a) Use of a liquid resin
- b) Use of a powder bed
- c) Melting of metal powder with a laser
- d) Injection of metal binder onto a powder bed

Answer: c) Melting of metal powder with a laser

Explanation: Direct Metal Laser Sintering (DMLS) distinguishes itself by melting metal powder with a high-powered laser to build objects, offering high precision and complex geometries in metal fabrication.

Related posts:

- Steam generators and boilers MCQs
- 2. Vapour Cycles MCQs
- 3. Gas Dynamics MCQs
- 4. Air Compressors MCQs
- 5. Nozzles and Condensers MCQs
- 6. Introduction to stress in machine component MCQs
- 7. Shafts MCQS
- 8. Springs MCQs
- 9. Brakes & Clutches MCQs

- 10. Journal Bearing MCQs
- 11. Energy transfer in turbo machines MCQs
- 12. Steam turbines MCQs
- 13. Water turbines MCQs
- 14. Rotary Fans, Blowers and Compressors MCQs
- 15. Power transmitting turbo machines MCQs
- 16. Energy transfer in turbo machines MCQs
- 17. Steam turbines MCQs
- 18. Water turbines MCQS
- 19. Rotary Fans, Blowers and Compressors MCQs
- 20. Power transmitting turbo machines MCQs
- 21. Introduction to Computer Engineering MCQs
- 22. Types of Analysis MCQS
- 23. Heat Transfer and Conduction MCQs
- 24. Extended Surfaces (fins) MCQs
- 25. Convection MCQs
- 26. Thermal and Mass Transfer MCQs
- 27. Thermal Radiation & Boiling/Condensation MCQs
- 28. Mechanical processes MCQs
- 29. Electrochemical and chemical metal removal processes MCQs
- 30. Thermal metal removal processes MCQs
- 31. Technologies of micro fabrication MCQs
- 32. Power Plant Engineering MCQs
- 33. Fossil fuel steam stations MCQs
- 34. Nuclear Power Station MCOs
- 35. Hydro-Power Station MCOs
- 36. Power Station Economics MCQs

- 37. Design of Belt, Rope and Chain Drives MCQS
- 38. Spur and Helical Gears MCQs
- 39. Bevel Gears MCQs
- 40. Design of I.C. Engine Components MCQs
- 41. Linear system and distribution models MCQs
- 42. Supply chain (SCM) MCQs
- 43. Inventory models MCQs
- 44. Queueing Theory & Game Theory MCQs
- 45. Project Management & Meta-heuristics MCQs
- 46. Overview of Systems Engineering MCQS
- 47. Structure of Complex Systems MCQs
- 48. Concept Development and Exploration MCQs
- 49. Engineering Development MCQs
- 50. Basic Concepts & Laws of Thermodynamics MCQs
- 51. Properties of Steam MCQs
- 52. Air standard cycles MCQS
- 53. Fuels & combustion MCOs
- 54. Materials Science MCQs
- 55. Alloys and Materials MCQs
- 56. Metal Heat Treatment MCQs
- 57. Material Testing and Properties MCQs
- 58. Chemical Analysis of Metal Alloys MCQs
- 59. Stress and strain MCQs
- 60. Bending MCQs
- 61. Torsion in shafts MCQs
- 62. Theories of failures MCQs
- 63. Columns & struts MCQs

Rapid protot	vpina	fabrication	methods	MCOs
Trapia proces	, ,,,,,,	Idolication	111001000	

64. Manufacturing Process MCQs