



B.E DEGREE EXAMINATIONS: MAY 2015

(Regulation 2009)

Sixth Semester

AERONATICAL ENGINEERING

AER121:Aircraft Production Techniques

Time: Three Hours

Maximum Marks: 100

Answer all the Questions:-

PART A (10 x 1 = 10 Marks)

1. In shell mould casting, the shell is made of
 - a) Plastics
 - b) Silica-sand
 - c) Wax
 - d) Metal
2. Bronze is best cast by
 - a) Shell-mould casting
 - b) Plaster-mould casting
 - c) Die casting
 - d) Centrifugal casting
3. Which of the following welding process uses non-consumable electrodes?
 - a) MIG welding
 - b) Manual arc welding
 - c) Submerged arc welding
 - d) TIG welding
4. Which of the following process results in the best accuracy of the hole made?
 - a) Drilling
 - b) Reaming
 - c) Broaching
 - d) Boring
5. Feed drives in CNC machines are provided by
 - a) Synchronous motors
 - b) Induction motors
 - c) Stepper motors
 - d) Servo motors
6. Which of the following process is called micro machining operation?
 - a) Electric discharge machining
 - b) Electro chemical machining
 - c) Electron beam machining
 - d) Water jet machining
7. Which one is not a characteristic of thermoplastic
 - a) No cross links between chains
 - b) Resistance to heat won't melt
 - c) Can be molded
 - d) Commonly used as plastic bottle

8. Bottles are made by the process
- | | |
|------------------|-----------------------|
| a) Film moulding | b) Thermoforming |
| c) Blow moulding | d) Injection moulding |
9. Blanking and piercing operations can be performed simultaneously in a
- | | |
|-----------------|--------------------|
| a) compound die | b) combination die |
| c) simple die | d) progressive die |
10. Consider the following processes:
 (i) Blending (ii) Atomization (iii) Sintering (iv) Comminution
- Which of the above process is used for producing metal Powder?
- | | |
|------------------|------------------|
| a) (i) and (iii) | b) (ii) and (iv) |
| c) (iii) | d) (iii) and (i) |

PART B (10 x 2 = 20 Marks)

11. What is a core print and its function?
12. Distinguish between fusion welding and solid state welding.
13. List the advantages and disadvantages of D.C and A.C welding.
14. What are the main functions of electrolysis in the ECM?
15. What are the metals that can't be machined by plasma arc machining?
16. Why Abrasive jet machining will be effective on ductile or brittle material?
17. Compare thermosetting plastics and thermoplastics.
18. What do you mean by glass transition temperature?
19. Distinguish between mixing and blending of powders.
20. What is super plastic forming operation?

PART C (5 x 14 = 70 Marks)

21. a) (i) Explain the carbon dioxide moulding process briefly. (10)
 (ii) What are all the properties of good molding sand? (4)
- (OR)**
- b) (i) Discuss the procedure of making casting by the pressure die casting process. (10)
 (ii) List out the various internal defects in casting. (4)
22. a) (i) Explain the various types of flames used in oxy acetylene gas welding process. (7)
 (ii) Enumerate the principle of operation, advantages and limitations of Electron beam welding. (7)

(OR)

- b) (i) Summarize some of the common welding defects and methods to overcome it. (7)
(ii) What is friction welding process? How the metals are welded in this process? (7)
List the major advantages.

23. a) (i) Enumerate with neat sketches any four operations that can be performed on lathe. (6)
(ii) Explain the principle and operation of cylindrical grinding machine with a neat sketch. (8)

(OR)

- b) (i) Explain with a neat sketch the principle of EDM. State its applications. (8)
(ii) Explain the principle and operation of Abrasive Jet Machining. (6)

24. a) (i) State advantages and limitations of thermoplastics and thermosetting materials. (7)
(ii) Explain in detail Compression moulding process used for moulding of plastics. (7)

(OR)

- b) (i) Describe with neat sketch the principle of reciprocating screw type injection Moulding. (7)
(ii) Explain how bonding of thermoplastics is carried out. (7)

25. a) (i) Compare the forged components with cast components. (7)
(ii) Discuss the principle and applications of following processes (7)
(i)Wire drawing (ii)Spinning

(OR)

- b) Explain the different steps involved in manufacturing the component by powder metallurgy.
