Register Number.....

B.E. DEGREE EXAMINATIONS: APRIL / MAY 2009

Fourth Semester

MECHATRONICS ENGINEERING

U07MH401 Manufacturing Technology

Time: Three Hours **Maximum Marks: 100**

Answer ALL the Questions:-

PART A (20 x 1 = 20 Marks)

1. Most patterns are made up of

   A. Wood B. Plaster C. Plastic compound D. Wax

2. Which mould is suitable for low temperature alloys

   A. Metal moulds
   B. Consumable sand moulds
   C. Ceramic mould
   D. All of the above.

3. The addition of Iron Oxide to the foundry sand improves the

   A. Bonding B. Green strength C. Hot strength D. Permeability

4. Core Baking means

   A. Ramming of core
   B. A process carried out in ovens
   C. Applying a compound to the surface
   D. Core shifting

5. In forged die casting, the molten metal is poured at a pressure

   A. 2 to 10kgf / cm^2
   B. 10 to 20kgf / cm^2
   C. 20 to 2000kgf / cm^2
   D. More than 2000kgf / cm^2

6. Which of the following is having recrystallization temperature near to room temperature

   A. Steel B. Cast Iron C. Lead D. All of the above.

7. Hot rolling is a process to get metal in

   A. Short lengths
   B. Long length of ununiform cross section
   C. Long length
   D. Long lengths of uniform cross section

8. Indicate the process employed for the production of seamless tubes

   A. Blanking B. Punching C. Piercing D. Bending

9. In Drawing operation the metal flows due to the

   A. Ductility B. Work hardening C. Plasticity D. Shearing

10. Blanking and Piercing operation can be performed simultaneously in

    A. Simple die B. Progressive die C. Compound die D. Combination die

11. A collet chuck in lathe is

A. an attachment B. A special accessory C. A standard accessory D. A part

12. Facing is an operation for making the piece in

A. Required length B. required diameter C. required taper D. All of the above

13. Reaming is an operation used to

A. Drill a hole
B. Tap a drill
C. Make an existing hole dimensionally accurate
D. roughing the drilled surface

14. Planar – type milling machine is similar to

A. Rotary table machine B. Vertical milling machine
C. bed – type machines D. Profile – milling machine.

15. The dimensional accuracy and surface finish produced by broaching is

A. Moderate B. Good C. Very good D. Worst

16. The grid size of the medium type abrasive grit is

A. 8 – 24 B. 30 – 60 C. 80 – 180 D. 220 – 600

17. Strongest brazing joint is

A. butt B. scarf (inclined) C. lap D. all are equally strong

18. In Ultrasonic welding, the thickness of metal is limited to

A. 2 mm B. 3 mm C. 6 mm D. 10 mm .

19. Thermit welding is suitable for

A. Large forging and casting B. Medium forging and casting
C. Thin steel structures D.Thin pipes

20. The ultrasonic welding process can be used for

A. Metallic materials B. Non – Metallic materials
C. Dissimilar metals D. All of the above

PART B (5 x 16 = 80 Marks)

21. (a) Explain at least four types of patterns with neat diagrams. (16)

(OR)

21. (b) Explain briefly the following special casting processes with neat diagram.

(i) Shell (8)

(ii) Investment (8)

22. (a) Explain the working principle of Hot and Cold Extrusion processes. (16)

(OR)

22. (b) (i) With neat sketches classify rolling mills. (8)

(ii) Explain the operation – blanking with clear diagram. (8)

23. (a) (i) With neat sketches explain briefly at least 4 methods of Taper Turning in Lathe. (16)

(OR)

23. (b) With clear diagrams explain Tap nomenclature. (16)

24. (a) With neat diagram explain the Horizontal and Vertical spindle column – and – knee type milling machine. (16)

(OR)

24. (b) Explain in details the Gear – Finishing processes. (16)

25. (a) Explain the following with diagram:-

(i) EBW – Electron Beam Welding (8)

(ii) LBW – Laser Beam Welding (8)

(OR)

25. (b) Explain the following with diagram:-

(i) Ultrasonic Welding (8)

(ii) Friction Welding (8)

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