Code No: 2936/AICTE

FACULTY OF ENGINEERING

B.E. IV - Semester (AICTE) (ECE) (Main) Examination, December 2020

Subject: Computer Organization & Architecture

Time: 2 Hours **Max. Marks: 70**

Note: (Missing data if, any can be assumed suitable)

PART-A

Answer any five questions. **(5 X 2= 10 Marks)**

1. Define address space and memory space.
2. Draw the Basic Computer instruction formats.
3. Differentiate between single precision and double precision IEEE standard floating point representations.
4. List the Memory reference instructions?
5. Write the differences between RISC and CISC processors.
6. List the applications are of stack organized computer?
7. Compare memory mapped I/O and I/O mapped I/O.
8. Mention various modes of data transfer.
9. Draw the Hardware required for Addition and Subtraction.
10. Define Page in Memory management.

PART-B

Answer any four questions. **(4 X 15 = 60 Marks)**

11. (a) Explain Booth's algorithm with a suitable example.
    (b) Explain Floating point Division.

12. (a) Explain the operation of a address sequencer in a micro programmed control unit
    (b) Explain various phases of an instruction cyclein detail.

13. Draw and explain the space time diagram for a four –segment pipeline showing the time it takes to process five tasks.

14. (a) Explain the DMA transfer with block diagram.
    (b) Explain CPU-IOP Communication.

15. Describe the different addressing mapping techniques in the cache memory?

16. (a) Explain Common Bus for Memory unit of 4096 X 16.
    (b) Draw and Explain memory table mapping with virtual Address.

17. Write short notes on
    (a) Array Processors
    (b) Computer Generations

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Code No. 2941/AICTE

FACULTY OF ENGINEERING

B.E. IV Semester (AICTE) (M/P) (Main) Examination, December 2020

Subject: Manufacturing Processes

Time: 2 Hours **Max. Marks: 70**

Note: (Missing data if, any can be assumed suitable).

PART - A

Answer any five questions. **(5 X 2 = 10 Marks)**

1. Define the terms: Sprue, Parting line and gate.
2. State the functions of chills used in sand casting.
3. What do you understand by die casting? Explain briefly.
4. Write the advantages and applications of thermoforming process.
5. Give a brief classification of various welding processes.
6. How an arc-welding electrode is specified? Give an example.
7. Mention the advantages and limitations of Forge welding.
8. What is weldability? State the factors affecting weldability.
9. What is the significance of yield criteria in metal forming operations?
10. Sketch the schematic to distinguish blanking and piercing operations.

PART – B

Answer any four questions. **(4 X 15 = 60 Marks)**

11. a) Discuss the allowances given on patterns for machining, distortion, shaking and draft.
    b) Elucidate the phenomenon of directional solidification in sand casting.

12. a) Explain the centrifugal casting process with a neat sketch.
    b) Enlist various casting defects; mention their causes and remedies.

13. a) Describe the types of flames obtained in Oxy-acetylene welding. State their applications.
    b) Explain the principle of GMAW. How GMAW is different from GTAW?

14. a) Sketch and explain the principle of Friction Stir Welding Process.
    b) Discuss the Principle of Spot Welding. Mention its advantages, limitations and applications.

15. a) Discuss the advantages of Cold working over Hot working with suitable examples.
    b) Explain the Electro Hydraulic Forming process with a neat sketch.

16. a) Explain various stages involved in *powder metallurgy process*.
    b) Describe the Stretch forming operation. Mention its applications.

17. Write short notes on the following:
    a) Injection Moulding.
    b) Explosive Welding.

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Code No. 2944/AICTE

FACULTY OF ENGINEERING

B.E. (AE) IV – Semester (AICTE) (Main) Examination, December 2020

Subject: Metallurgy and Material Testing

Time: 2 hours **Max. Marks: 70**

Note: (Missing data if, any can be assumed suitable).

PART - A

Answer any five questions. **(5 X 2 = 10 Marks)**

1. Explain Bauchinger's Effect.
2. What are the different imperfections in crystals.
3. What is low cycle fatigue?
4. Differentiate between creep curve and stress rupture curve.
5. Write effect of nickel on steel.
6. Explain Gibb's phase rule.
7. What is full annealing?
8. What is induction Hardening?
9. Mention different test conducted on Universal testing machine?
10. List out different non-Destructive Tests.

PART – B

Answer any four questions. **(4 X 15 = 60 Marks)**

11. (a) Explain recovery, recrystallization and grain growth.
    (b) Explain with neat sketch the different types of crystal structure.
12. (a) Explain the experimental determination of fatigue strength with the help of the neat sketch.
    (b) Explain Fick's laws of diffusion.
13. (a) Draw and explain the cooling curves for pure metal and solid solution alloys.
    (b) Differentiate Eutectic, Eutectoid and Peritectic Reactions.
14. Explain the need of tempering hardened steel. Describe the process of tempering.
15. (a) Discuss the applications of non-metallic materials in automotives.
    (b) Mention different hardness tests. Describe Brinell hardness test with suitable sketch.
16. (a) Discuss Griffiths theory of brittle fracture.
    (b) Discuss the applications of diffusion in mechanical engineering field.
17. (a) What are the characteristics of plain carbon steels?
    (b) Write a short note on i) Marraging steel ii) Impact testing.

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Code No.2952/AICTE

FACULTY OF ENGINEERING

B.E. (IT) IV-Semester (AICTE) (Main) Examination, December 2020

Subject : Data Communications

Time : 2 hours **Max. Marks:70**

Note: (Missing data if, any can be assumed suitable).

PART - A

Answer any five questions. **(5 X 2 = 10 Marks)**

1 Explain the need for protocol architecture.
2 Define Amplitude Modulation with an example.
3 Write the difference between Synchronous and Asynchronous transmission.
4 Explain piggy backing.
5 What is wavelength division multiplexing?
6 Write notes on ADSL.
7 What is CSMA/CD? Why is it needed in different Ethernets?
8 What are the functions of MAC sub layer?
9 What geometric shape is used in cellular system design and why?
10 Explain about Bluetooth piconet.

PART – B

Answer any four questions. **(4 X 15 = 60 Marks)**

11 a) Explain OSI layers with neat diagram.
b) Explain the analog to digital encoding techniques.

12 a) Explain the frame structure and operation of HDLC.
b) Explain the difference between Go-back-N ARQ and selective Retransmit ARQ.

13 a) What is Multiplexing. Explain with examples.
b) Differentiate circuit switching and packet switching.

14 a) Explain about Bluetooth Architecture in detail.
b) Explain in detail about IEEE 802.3 frame format.

15 a) Discuss IEEE 802.11 architecture and services.
b) Write notes on various cellular network generations.

16 a) Explain the digital to analog encoding techniques.
b) Write short notes on Statistical Time Division Multiplexing.

17 a) Explain the parity check mechanism using an example.
b) Write about TCP/IP model.

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