Reg. No. : | | | | | | | | | | |

Question Paper Code: 49073

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2017

Elective

Mechanical Engineering

14UME908 - UNCONVENTIONAL MACHINING PROCESSES

(Regulation 2014)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. Which one is not belongs to Electrochemical processes

   (a) Electrochemical Machining (b) Electrochemical Grinding

   (c) Electro Jet Drilling (d) Electron Beam Machining

2. The x.25 standard specifies a

   (a) Technique for start-stop data (b) Technique for dial access

   (c) DTE/DCE interface (d) Data bit rate

3. A network queues is analytical using

   (a) Bayes theorem (b) Jacksons theorem

   (c) Nyquist theorem (d) Queuing theorem

4. In which of the following gases is not used in Abrasive jet machining?

   (a) Air (b) Nitrogen (c) Carbon di-oxide (d) Argon

5. In EDM, better surface finish is obtained at

(a) low frequency and low discharge current

(b) low frequency and high discharge current

(c) high frequency and low discharge current

(d) high frequency and high discharge current

6. In Congestion, traffic descriptors are qualitative values that represent a

(a) Data Protocol (b) Data Flow

(c) Data Congestion (d) Data Traffic

7. In which of the following, an electrochemical oxidation on the work surface takes place

(a) Electrochemical grinding (b) Electrical discharge Machining

(c) Electrochemical Machining (d) Ultrasonic Machining

8. In Differentiated Services, each packet contains a field called the

(a) DS Field (b) DA Field

(c) DC Field (d) DE Field

9. The parameters of QoS are

(a) Jitter, bandwidth (b) Delay

(c) Both (a) and (b) (d) None of the above

10. The metal is removed in Plasma arc machining due to

(a) Erosion (b) Chemical reaction

(c) Melting of metal (d) Grinding

PART - B (5 x 2 = 10 Marks)

11. List the characteristics of unconventional machining processes.

12. What are the single server queues.

13. Name the dielectric fluids commonly used in EDM process.

14. List the design goals of RED algorithm.

15. Identify the essential constituents of the electron gun.

PART - C (5 x 16 = 80 Marks)

16. (a) (i) Compare and contrast the various aspects of conventional and unconventional machining processes. (8)

(ii) Discuss about the economics of various unconventional machining processes. (8)

Or

(b) Discuss in detail about 802.11 architecture. (16)

17. (a) Describe the effects of the following parameters on working accuracy and rate of metal removal in AJM: Grain size; Jet velocity; Standoff distance. (16)

Or

(b) (i) Describe the principle and working of a USM with a neat sketch. (10)

(ii) List the advantages, limitations and applications of USM. (6)

18. (a) Explain the process of wire cut EDM and list any two of its advantages, limitations and applications. (16)

Or

(b) (i) Explain ABR Traffic management in detail. (8)

(ii) Describe GFR Traffic management in detail. (8)

19. (a) Explain differentiated services in detail. (16)

Or

(b) Explain the principle and working of CHM. Mention any four advantages, limitations and applications of CHM. (16)

20. (a) Briefly discuss about the constructional features of electron gun used for generating an electron beam in EBM. (16)

Or

(b) Give a detailed account of MPLS and its operations. (16)

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