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Roll No.

EIGHTH SEMESTER

B.E. (PE)

MID SEM EXAMINATION

March 2007

**PE-413 NON CONVENTIONAL METHODS OF
MANUFACTURING**

Time: 1 Hour 30 Minutes

Max. Marks : 20

Note : Answer **ALL** questions.

Assume suitable missing data, if any.

- 1[a] Classify various non conventional methods of manufacturing. How the following processes differ from one another in relation to type of energy used, mechanics of material removal, source of energy, applications etc.
- (i) Abrasive jet machining
 - (ii) Ultrasonic machining
 - (iii) Electrochemical machining
 - (iv) Laser beam machining
- 6
- [b] Discuss in detail ultrasonic machining process with neat sketch. Also give its applications & limitations.
- 2[a] What is electrochemical machining? Discuss its electrochemistry and complete dynamics with neat sketches.
- [b] In an electrochemical machining with a pure iron workpiece, a removal rate of $8 \text{ cm}^3/\text{minute}$ is desired.
- Determine the current required.
- 5
- 3[a] With the help of a schematic diagram, describe the process of electro discharge machining. Enlist its major applications.
- [b] Discuss various EDM circuits and their operating principles.
- [c] How the surface finish is related to capacitance in EDM process?
- 6
- 4 Write short notes on following (any **three**):-
- (i) Slurry used in USM.
 - (ii) Electron beam machining (EBM).
 - (iii) Process suitability for various materials w.r.t. NCMM.
 - (iv) Safety requirements in AJM, PAM, LBM processes.
 - (v) Adaptive control in NCMM.
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EIGHTH SEMESTER

B.E. (PE)

MID SEM EXAMINATION

March **2007**

PE-411 PROJECT PLANNING & APPRAISAL

Time: 1 Hour 30 Minutes

Max. Marks : 20

Note : Answer **ALL** questions.

All questions carry equal marks.

Assume suitable missing data, if any.

- 1[a] Discuss five broad phases of capital budgeting.
- [b] What are the important questions raised in technical analysis?
- 2[a] What key issues would you examine in a preliminary screening exercise?
- [b] Explain porter model in detail.
- 3[a] What are the pros and cons of conglomerate diversification?
- [b] List and describe the various elementary investment strategies.
- 4[a] Discuss a procedure for determining the capital budget under conditions of increasing marginal cost of capital, when the NPV criterion is used.
- [b] What is internal rate of return? How, it is calculated?

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EIGHTH SEMESTER

B.E. (PE)

MID SEM EXAMINATION

March **2007**

PE-421 MATERIALS MANAGEMENT

Time: 1 Hour 30 Minutes

Max. Marks : 20

Note : Answer **ALL** questions.

Assume suitable missing data, if any.

1 Explain different types of inventory policy. 6

2 An organization is to decide about the number of expensive spares of a particular type to be ordered along with procurement of the main equipment. Each spare cost Rs. 12,000/= and the opportunity cost of non-availability is estimated to be 20 times this cost. A surplus spare can be salvaged at 60% of the purchase price. During planning period, the demand for the spare is estimated according to the following probability distribution:

Demand	0	1	2	3	4	5	6
Probability	0.60	0.20	0.10	0.05	0.04	0.01	0.00

What should be the optimal number of spares to be ordered? 4

3 Explain the importance of ABC and VED analysis in inventory control. 5

4 Explain aggregate inventory analysis with exchange curve concept. 5