

Total No. of Pages 1

Roll No.

EIGHTH SEMESTER

B.E. (PE)

MID SEM EXAMINATION

March 2006

PE-411 PROJECT PLANNING AND APPRAISAL

Time: 1 Hour 30 Minutes

Max. Marks : 20

Note : Answer **ALL** questions.
Assume suitable missing data, if any.

- 1[a] Define the levels of decision making. 2
- [b] Discuss the five broad phases of capital budgeting. 2
2. List and describe the various elementary investment strategies. 4
3. Explain the nature of the following portfolio planning tools:
(a) BCG product portfolio matrix and
(b) General Electric stoplight matrix 4
4. What key issues would you examine in a preliminary screening exercise. 4
- 5[a] Discuss how a project rating index may be developed.
- [b] What qualities and traits are required to be a successful entrepreneur? 4

Total No. of Pages 2

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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] Differentiate between non conventional methods of manufacturing and conventional methods of manufacturing.
- [b] Discuss the factors which force the production department to consider non conventional methods of manufacturing for their products. 3
- 2[a] Discuss abrasive jet machining process in detail alongwith neat sketches giving emphasis on the following :
- i. Mechanics involved
 - ii. Composition of gas
 - iii. Types of nozzle used
 - iv. Types of abrasives
 - v. Application and limitations.
- [b] How does nozzle tip diameter affect the material removal rate (MRR) in abrasive jet machining? Discuss with the help of diagrams. 5
- 3[a] What is the principle of ultrasonic machining process? Discuss the USM process with schematic diagram.
- [b] Elaborate the important process parameters of ultrasonic machining process showing the relationships between following
- (i) Frequency and material removal rate
 - (ii) Amplitude and material removal rate.

[c] What is the relationship between feed force and material removal rate in USM? 6

4[a] Find out approximate value of time required to machine a square hole 5 mm x 5 mm in a tungsten carbide plate of thickness 4 mm. The abrasive grains are of 0.01 mm diameter. The feeding is done with constant force of 3.5 N. The amplitude of tool oscillation is about 25 μm , the frequency being 25 KHZ. The fracture hardness of WC can be approximately taken as 6900 N/mm². The slurry contains 1 part of abrasive to about 1 part of water.

[b] Elaborate electrochemistry of ECM process.

[c] Discuss principles of following processes (any *TWO*)

- i. Laser beam machining
- ii. Electrobeam machining.
- iii. Electric discharge machining.