23065-A/23124

M. Tech. 3rd Semester (Elective)
Examination – January, 2012

MECHANICAL DESIGN-II

Paper : 951

Time : Three hours]   *[Maximum Marks : 100*

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Attempt any *five* questions.

1. A person considers purchase of a machine among the following :   20

Items	Present Investment	Total Annual Cost	Life	Salvage Value
Machine A	10000	2000	10 years	500
Machine B	12000	1500	10 years	1000
Machine C	15000	1200	10 years	1200

As an advisor to a buyer, you have been asked to select best machine considering 10 years : single

payment present worth. Single payment present worth factor for 10 years at 12% normal rate of return is 0.327. For annual series present worth at the rate of 12% for 10 years 5.6507.

2. (a) What is system concept ? How to reduce the total cost of production using system concept ?   10

   (b) How activity based costing is done in any organisation with suitable example ?   10

3. Calculate the tolerances, fundamental deviations and limits of size for hole and shaft of following :   20

$$(i)\, 25H8\,/\,d9$$

4. What are the functions of a well designed electronics package ? Identify the level of packaging hierarchy in electronic system of production.   20

5. What is the common approach used in all of the material addition technology to prepare the control instructions for Rapid prototyping system ?   20

6. Discuss the various steps of design of experiments for doing a research in detail.   20

7. Explain unsystematic risk and also its components in detail.   20

8. Write short notes on the following :   20

   (i)   Failure modes and effect analysis,

   (ii) Tooling Amortizing.

———————