Print

Roll No.								

B.E. (Full Time) DEGREE END SEMESTER EXAMINATIONS, Apr/May 2014

PRINTING TECHNOLOGY BRANCH

VII SEMESTER - (REGULATIONS 2004/ 2008)

PT 481/ 9027 Printing Machinery Maintenance

Answer All Questions

Part A 10x2=20 Marks

1. What is the need for a test form while commissioning a printing machine?
2. What is the need for maintenance in a printing industry?
3. Define preventive maintenance.
4. What is the need for categorizing the machines?
5. Name a few solid type lubricants and their applications.
6. How eccentrics are used in a printing machine?
7. Enumerate the factors to be considered while purchasing new equipment?
8. What is the reorder point for a ball bearing used in ink rollers, that requires 4 weeks time to procure with an annual demand of 26 numbers.
9. Enumerate six big equipment losses.
10. What are the advantages of DC motors over AC motors?

Part B **5x16=80** Marks

11.I.A company has invested Rs.100,000,000 in equipment and Rs.100,000,000 in facilities. Find out the cost of maintenance per annum and also the cost of maintenance labour with the number of people required. ---10

II.Illustrate equipment record form & machine inspection form with relevant data and discuss their importance.---6.

12.a.What are the objectives of maintenance? Explain as to how you will attain those objectives.

Or

b.What are the functions of maintenance? Explain.

13.a.I.Explain how proper functioning of maintenance department can influence the various elements of cost. ---8.

II. Illustrate with an example as to how you will make an economic analysis for decision regarding spares and stand-bys? ---8.

Or

b.I. A gravure cylinder making plant uses a catalyst pad made of platinum costing Rs.15,000. This pad requires to be reactivated every 4 weeks. For this, plant remains stopped for a total of 3Hrs. The loss of profit during this period works out to be Rs.200/hr. There is a proposal to buy a spare set of pad which would be reactivated while the plant is in operation thereby reducing the down time of the plant by 45 mins. The spare pad would tie up the investment of Rs.15,000 @ 25% as return on investment annually if invested in some other venture. Will you accept the following replacement proposals? Justify. ---8.

II. For a high velocity hot air drying system of a web fed machine, a reciprocating compressor is used to increase the air pressure. Air required for the process carries with it oil from the compressor into the pipe, where gases are mixed and carbon deposits settling in the pipes constitute an explosion hazard. Hence the pipe has to be cleaned once in 2 weeks. Time required for cleaning is 4hrs.& 45mins. The plant produces at the rate of

20,000copies/hr.fetching a profit of Rs.1000/hr. The cost of labour overheads works out to Rs.50/hr. Whereas a new compressor would cost Rs.50,000 and it will reduce the frequency of cleaning to once in 4 weeks. The old compressor can be sold for Rs.10,000. The cost of return on investment on fresh purchase is @25% per annum. For the existing compressor annual cost is calculated to be Rs.2,500. ---8.

14.a.Discuss the factors that could affect the categorization of machines and their weightages? Illustrate a sample plan for categorization of equipment with example.

Or

b.Explain different types of foundation and their relative importance.

15.a.Explain the three types of probability distributions for the times-to-failure in maintenance.

Or

b.Present mathematical models for replacing 10 blankets in a tower type press to justify the best policy form the given data.

Time in Months	1	2	3	4	5	6	7	8	9
Failure Probability	Nil	Nil	Nil	0.05	0.15	0.30	0.25	0.15	0.10

The cost of replacing blankets individually, when they fail, is Rs.10,000/blanket. The cost of replacing all the 10 together is Rs.50, 000. The cost of independent preventive replacement of a blanket is 7,000.