

Bachelor of Printing Engineering Supplementary Examination, 2023
(4th Year- 2nd Semester)

Print Production Maintenance (Hons.)

Time:3 hrs

Full Marks: 100

Group - I

Answer the following questions. (30)

- (1)(a) What are the goals and benefits of Total Productive Maintenance? Explain how TPM can be implemented to avoid six big losses. 5 + 6
- (b) Why is reliability important in TPM? 4
- (2)(a) 'The TPM system first addresses six operational and mechanical losses typically occur in graphic communications equipments'- Mention the six big losses. Explain any two operational losses. 6
- (b) Explain predictive maintenance with its advantages and disadvantages. 6
- (c) How is mean time to repair different from mean time between failures? 3

Group - II

Answer the following questions. (40)

- (3)(a) Write down the application of spur gear in printing machines. 4
- (b) Where the chain drives are found in Printing Presses? Write down the advantage and disadvantages of chain drives. 5
- (c) 'For installation and maintenance work variety of instruments are used'- Mention and briefly describe all of them. 5
- (d) Explain in detail about the role of sensors and detectors in printing machine. 6
- (4)(a) How belt drive can be maintained? How flexography printing can be improved with Direct Drive Technology. 10
- (b) What is overlay relay switches? Classify and explain any one type. 5
- (c) What is Mechatronics? Write down its key elements. Write down its application in print production. 5

Group - III

Answer any one question. (10)

- (5)(a) Differentiate between restoration and preventive maintenance. 5
- (b) What are the main purposes of lubrication? Which factors are necessary to keep in mind while choosing lubricant? 5
- (6) Explain the steps of good housekeeping. What are the factors responsible for poor housekeeping? Explain briefly. 10

[Turn over

Group - IV
Answer the following questions. (20)

(7) For a particular equipment the following information have been provided:

I	Working hour per day	8 hrs
ii	Planned down time per day	30 mins
iii	Stoppage losses per day : Breakdown	20 mins
	Setup	20 mins
	Adjustment	20 mins
iv	Output per day	400 items
V	Rate of quality products	98%
vi	Ideal cycle time	0.5 mins/item
vii	Actual cycle time	0.8 mins/item

Calculate loading time per day, Operating time per day, Actual processing time, Availability, Operating speed rate, Net operating rate, Performance efficiency and OEE. 10

- (8)(a) Is the OEE calculation different for bottleneck versus non-bottleneck equipments? How? 4
 (b) Write down the importance for test run. Explain in detail about the types of test run used in the printing industry? 6