Bachelor of Printing Engineering Examination, 2024
(4ᵗʰ Year- 2ⁿᵈ Semester)
Print Production Maintenance (Hons.)

Time:3 hrs   Full Marks: 100

Group - I
Answer the following questions. (30)

(1)(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

(2)(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

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.   5

(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

(d) 'Electrical problems in the printing industry have frequent occurrences' – Discuss each problem briefly.   5

Group - III
Answer any one question. (10)

(5)(a) Differentiate between restoration and preventive maintenance.   3

(b) Explain the steps of good housekeeping. What are the factors responsible for poor housekeeping? Explain briefly.   7

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(6)(a) What is lubrication? Classify lubricants? Write down the purpose of using lubricants.   5

   (b) What is 5S? Write down its uses and advantages?   5

Group - IV
Answer question no. 7 and any one from the rest. (20)

(7) For a particular equipment, the following informations 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) How the OEE calculation is different for bottleneck versus non-bottleneck equipments? 4

   (b) Write down the importance for test run. Explain in detail about the types of test run used in the printing industry?   6

(9)(a) How can FMEA be used to identify equipment failures?   6

   (b) How is the total downtime for repair determined in calculating mean time to repair?   4