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**Department of Electrical and Electronic Engineering**
**Class test-03, Summer-2026, Sec- B**
**Course Code: 0542-221, Course Title: Probability &Statistics**
**Time: 30 Mints.** **Marks: 15**

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|---|---|---|
| 1. | In a factory, two machines (Machine A and Machine B) produce capacitors.<br>The probability that either Machine A or Machine B produces a defective capacitor is 0.12. The probability that Machine A produces a defective capacitor is 0.08, and the probability that Machine B produces a defective capacitor is 0.06.<br>What is the probability that both Machine A and Machine B produce a defective capacitor at the same time? | 5 |
| 2. | An Electrical and Electronic Engineering student is analyzing the defect rate of circuit boards in a manufacturing process. Every hour, 25 circuit boards are inspected, and the probability that a board is defective is 10%. Using an appropriate probability distribution, find:<br>**i)** The probability that 1 effective board is found in an hour.<br>**ii)** The probability at most 2 effective boards are found in an hour.<br>**iii)** The probability that more than 4 effective boards are found in an hour. | 10 |

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