

- Instructions:**
- 1) All questions are compulsory.
 - 2) Figures in rounded () brackets within the question, indicate the scheme of marking for respective part of the question, whereas, figures in the first right column indicate total marks for that whole question.
 - 3) CO is the index number of the Course Outcome statement.
 - 4) The Bloom's taxonomy level (BL) for 1,2,3,4,5 and 6 is remember, understand, apply, analyze, evaluate and create respectively.
 - 5) Assume suitable data if necessary.
 - 6) Use of non-programmable calculators is allowed

Attempt the Following

Marks	BT Level	COs
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| Q.1 A | Explain the Preemphasis and Deemphasis in FM.
(Preemphasis-4 Marks, Deemphasis-3 Marks) | 7 | 2 | CO3 |
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OR

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| | Explain the Armstrong Method (Indirect Method) for FM generation. (Block Diagram-2 Marks, Explanation-5 Marks) | 7 | 2 | CO3 |
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| B | Define the following four terms with reference to the equation $m(t) = V_c \cos[\omega_c t + \theta(t)]$
Instantaneous phase deviation
Instantaneous phase
Instantaneous Frequency deviation
Instantaneous Frequency
(Each Term-1.5 Marks) | 6 | 1 | CO3 |
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| Q.2 A | Compare the differences between a TRF receiver and a superheterodyne receiver using a block diagram. (Block Diagram-3 Marks, Explanation-3 Marks) | 6 | 4 | CO1 |
| B | Explain the Sensitivity, Selectivity, dynamic range, image frequency, and fidelity of the receiver. (Definition- 4 Marks, Explanation-2 Marks) | 6 | 2 | CO4 |

