

Instructions:

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

**MARKS**

- |            |  |           |
|------------|--|-----------|
| <b>Q.1</b> | (a) Why is DME integrated with glide slope transmitter?  | <b>03</b> |
|            | (b) Explain application of outer marker beacon NDB.  | <b>04</b> |
|            | (c) Draw and explain function of Instrument Landing System.                                    | <b>07</b> |
| <b>Q.2</b> | (a) What is the major difference between in VOR and DVOR?                                      | <b>03</b> |
|            | (b) What is the basic difference between ILS and MLS?  | <b>04</b> |
|            | (c) Classify NDB with respect to applications.   | <b>07</b> |
| <b>OR</b>  |  |           |
|            | (c) Explain Tactical Air Navigation system? How does it protect Airbase from enemy attack?     | <b>07</b> |
| <b>Q.3</b> | (a) Shortly explain application of GPS for air navigation.                                     | <b>03</b> |
|            | (b) Differentiate between TCAS-1 and TCAS-2.   | <b>04</b> |
|            | (c) Differentiate between primary ground radar and secondary surveillance radar.               | <b>07</b> |
| <b>OR</b>  |  |           |
| <b>Q.3</b> | (a) Explain principle of radio altimeter.  | <b>03</b> |
|            | (b) Discuss the application of Radar Altimeter for GPWS.                                       | <b>04</b> |
|            | (c) Draw and explain display screen of a SSR.  | <b>07</b> |
| <b>Q.4</b> | (a) Differentiate between Runway ILS and Warship Deck ILS.                                     | <b>03</b> |
|            | (b) Differentiate between precision and non precision approach.                                | <b>04</b> |
|            | (c) Draw and explain function of Fly By Wire system.   | <b>07</b> |
| <b>OR</b>  |  |           |
| <b>Q.4</b> | (a) What is the advantage of early warning system over ground installed secondary radars.      | <b>03</b> |
|            | (b) Differentiate between radar altimeter and pressure altimeter.                              | <b>04</b> |
|            | (c) Discuss issues related to operation of flight deck avionics instruments.                   | <b>07</b> |
| <b>Q.5</b> | (a) Shortly explain application of SATCOM as an avionics.                                      | <b>03</b> |
|            | (b) Explain principle of Speech Recognition.   | <b>04</b> |
|            | (c) Explain Flight Management System.  | <b>07</b> |
| <b>OR</b>  |  |           |
| <b>Q.5</b> | (a) Enlist components of Electronic Warfare.   | <b>03</b> |
|            | (b) Explain application and principle of a goggle which helps a fighter pilot to fly by night. | <b>04</b> |
|            | (c) Discuss Avionics Architecture by Joint Integrated Avionics.                                | <b>07</b> |

\*\*\*\*\*