

II SEMESTER, M. TECH (DEFENCE TECHNOLOGY) END SEMESTER MAKE-UP EXAMINATION JUNE 2024 COURSE: TACTICAL BATTLEFIELD COMMUNICATION AND ELECTRONIC WARFARE (AAE 5283)

Duration: 3 Hrs Date: 14/06/2024 MAX. MARKS: 50

Note:

- > All questions are compulsory
- Stepwise answers carry marks
- Draw a neat diagram wherever necessary
- Q1A. 80 MW EIRP Range of the target : 300Kms RCS of the target is .5 Sq Metre Gain of the radar is 40 db Antenna Aperture 0.5 SqM Assumption is Jammer Power should be double the Reflected power at the Radar Receiver. Work out the effective radiate power of the self protection jammer.
 Q1B For the above problem 1A Standoff jammer is located 350Kms away
- Q1B. For the above problem 1A, Standoff jammer is located 350Kms away and it is transmitting towards the sidelobe which is 50db down from the main lobe. Work out the effective radiate power of the self-protection jammer.
- **Q2A.** What are the Five Functional elements of a Battle Netwrok. Elucidate **[5]** essential Characteristics of these elements.
- **Q2B.** What are the major principles of Communication to support the **[5]** Tactical Battle operations.
- **Q3A.** Elucidate the different elements of Electronic Warfare. [5]
- **Q3B.** What are the mechanisms that affect Radio Propagation. [5]
- **Q4A.** List out various Direction Finding Techniques. [5]
- **Q4B.** Explain the difference between Self Protection Jamming and Support **[5]** Jamming Attack.

[5]

- Q5A. Draw the Block Diagram of an ESM System and explain each of the [5] Q5B. Explain various Location Positioning techniques.
- [5]