TED (15) 6045
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N21 – 02673

Reg. No……
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DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/ MANAGEMENT/COMMERCIAL PRACTICE, NOVEMBER – 2021

RADAR AND NAVIGATION

[Maximum Marks: **75**] [Time: **2.15** Hours]

PART-A

(Answer ***any three*** questions in one or two sentences. Each question carries ***2*** marks)

I. 1. What is RADAR stands for?

2. Define maximum unambiguous range.

3. What is PPI?

4. List out methods of navigations.

5. What is GNSS? (3 x 2 = 6)

PART-B

(Answer any ***four*** of the following questions. Each question carries ***6*** marks)

II. 1. What are the applications of radar systems?

2. Describe basic operation of delay line canceller.

3. Write notes on MTI signal processor.

4. Briefly explain working of Goniometer with diagram.

5. Write notes on DECCA system.

6. What are the advantages of microwave landing system?

7. What are the limitations of instrument landing systems? (4 x 6 = 24)

PART-C

(Answer ***any of the three units*** from the following. Each full question carries ***15*** marks)

UNIT – I

III. (a) Derive Radar range equations with relevant explanations. (10)

(b) What is the significance of minimum detectable signal in radar system? (5)

OR

IV. (a) Explain the operations of radar system in detail with neat block diagram. (10)

(b) What is the significance of pulse repetition frequency? (5)

UNIT – II

V. (a) Explain block diagram of moving target indicator radar (MTI) system. (9)

(b) Write notes on CW radar system. (6)

OR

VI. (a) Explain tracking radar system and its types. (9)

(b) Explain Doppler Effect and its significance in the radar system. (6)

UNIT- III

VII. (a) Explain working principle of hyperbolic navigation system. (8)

(b) Explain working principle of LORAN navigation system. (7)

OR

VIII. (a) Explain the working principle of VOR system. (8)

(b) Write notes on DME. (7)

UNIT - IV

IX. (a) Explain elements of Instrument landing system (ILS). (10)

(b) Write notes on Inertial Navigation system (INS). (5)

OR

X. (a) Explain in detail about Microwave landing system (MLS). (10)

(b) Briefly explain Doppler navigation system (DNS). (5)

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