0542

Code : 9EC-54

Register Number | 9 | E | C | 0 | 9 | 0 | 2 | 6 |

V Semester Diploma Examination, May 2012

E & C BOARD

ADVANCED COMMUNICATION

Time : 3 Hours] **[Max. Marks : 100**

Instructions : (1) Section – **I** is *compulsory*.

(2) Answer any **two** full questions each from of the remaining Sections – **II, III** and **IV**.

SECTION – I

1. (a) Fill in the blanks : **5**

   (i) Signal propagation in a wave guide is by _____ fields.

   (ii) Duplexer isolates the _____ during transmission in Radar.

   (iii) The centre of gravity of the earth is called _____.

   (iv) VSAT systems operate in _____ band.

   (v) Transferring calls between the cells is known as _____.

   (b) List the features of CDMA 2000 system. **5**

SECTION – II

2. (a) Define cavity resonator. Mention the types. **8**

   (b) Explain how the signal grows in a TWT. **3**

   (c) Mention the applications of Reflex Klystron and Magnetron. **4**

3. (a) Define :

   (i) Peak Power **3**

   (ii) PRF

   (b) Explain the working of branch type Duplexer. **6**

   (c) Explain radar A-Scope display. **6**

4. (a) Explain the importance of varactor diode in microwave application. **4**

   (b) Explain CW Doppler radar with block diagram. **6**

   (c) What is radar Beacon ? Mention is applications. **5**

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SECTION – III

5. (a) Mention the different satellite orbits. 3

(b) Explain Satellite Repeater. 4

(c) Write a note on Spatial Isolation. 3

(d) Explain the working of Double conversion Transponder. 5

6. (a) Explain the working of GPS Receiver with block diagram. 7

(b) Compare LEO, MEO and GEO satellites. 5

(c) Write the block diagram of an Earth Station. 3

7. (a) Explain DBS TV system with diagram. 8

(b) Mention any four applications of satellite for Earth observation. 2

(c) Explain Interactive data communication using satellite. 5

SECTION – IV

8. (a) Explain the call processing in an Electronic Exchange. 6

(b) Explain briefly national subscriber dialling. 4

(c) Explain : 5

(i) Cell Splitting

(ii) Cell Sectoring

in cellular system.

9. (a) Explain CDMA. 5

(b) Explain the need for channel allocation in cellular system and mention the types. 5

(c) Explain call establishment sequence in mobile originated call. 5

10. (a) Mention the GSM features. 5

(b) Name the network nodes of CDMA 2000 system. 5

(c) List the features of IS-95 CDMA. 5

0551 **Code : 9EC-54**

Register Number	1	1	9	EC	090	5	7

V Semester Diploma Examination, November 2011

E & C BOARD

ADVANCED COMMUNICATION

Time : 3 Hours] **[Max. Marks : 100**

Instructions : (1) Section 1 is *compulsory.*

(2) Answer any **two** from each of the remaining Sections.

SECTION – 1

1. (a) Fill in the blanks : 5 × 1

(i) The _____ mode of wave propagation is not possible in a waveguide.

(ii) Gunn diode is a type of _____ electron device.

(iii) Duplexer provides _____ isolation between Radar transmitter and receiver.

(iv) Exchange of house keeping information is done by _____ subsystem of a satellite.

(v) In IS-95 system, number of time slots is one CDMA channel is _____.

(b) Classify Radar frequencies along with frequency range and maximum output power available per tube. 5

SECTION – 2

2. (a) Explain the high frequency limitations of conventional tube devices. 6

(b) What are cavity resonators ? Mention the types and their applications. 5

(c) Sketch the Applegate diagram to show bunching of electrons in a Reflex Klystron. 4

3. (a) Explain the construction and working of a TWT. 8

(b) What is Gunn effect ? Why it is seen only in gallium arsenide ? Explain with neat sketch. 7

4. (a) Discuss the three different methods of antenna tracking in radar systems. 6

(b) Explain Branch type duplexer with a neat sketch. 5

(c) Explain briefly Radar Beacons. 4

[Turn over

SECTION – 3

5. (a) Distinguish between a Geostationary satellite and Geosynchronous satellite. 2
   (b) Write the advantages and disadvantages of Geostationary orbit satellite. 7
   (c) What is attitude control ? Explain the three local co-ordinate system. 6

6. (a) Sketch and explain the block diagram of a typical satellite earth station. 7
   (b) Discuss frequency allocation for satellite services. 4
   (c) Explain subsystem of a satellite. 4

7. (a) Explain direct home reception. 5
   (b) Write a brief note on space segment of a GPS system. 5
   (c) Write a brief note on satellite applications. 5

SECTION – 4

8. (a) Compare : In channel signalling and common channel signalling. 8
   (b) Explain the call processing in an electronic exchange. 5
   (c) What is Toll office ? 2

9. (a) List the characteristic features of the initial GSM standard. 6
   (b) Explain frequency reuse in mobile communication. 5
   (c) Explain channel allocation with examples. 4

10. (a) Explain with neat figures the TDMA and FDMA Techniques. 6
    (b) List out the service aspects of IS-95 CDMA standard and explain them briefly. 7
    (c) What is the function of AUC in a GSM system ? 2