Hall Ticket Number:

October, 2016   **Electronics & Communication Engineering**
Eighth Semester   **Radar And Navigational Aids**
Time: Three Hours   **Maximum :** 60 Marks

Answer Question No.1 compulsorily.   (1X12 = 12 Marks)

Answer ONE question from each unit.   (4X12=48 Marks)

1. Answer all questions   (1X12=12 Marks)
   a) If a signal is received after 20µs after its transmission, find the range of the target?
   b) Define radar cross section of a target?
   c) Write the applications of radar?
   d) What is a delay line canceller?
   e) Define clutter?
   f) What are the limitations of CW radar?
   g) What is conical scan?
   h) What is a squint angle?
   i) What is a radome?
   j) What are the advantages of VOR?
   k) What is GPS?
   l) What is ILS?

UNIT – I

2. a) What is the integration of radar pulses? How does it help to improve the performance?
                    (6M)
   b) What is Doppler Effect? Explain about the Doppler Effect and write its applications?
                    (6M)

(OR)

3. a) What is minimum detectable signal and explain false alarm detection and missed
      detection in detail?   (6M)
   b) What is receiver noise? Derive the expression for minimum detectable signal s_{min} in
       terms of signal to noise ratio.   (6M)

UNIT – II

4. a) Explain the concept of staggered PRF and discuss its importance.   (6M)
   b) What is sequential lobing and explain in detail.   (6M)

(OR)

5. a) Explain Doppler filter banks.   (6M)
   b) Explain the monopulse amplitude comparison in detail.   (6M)

UNIT – III

6. a) Explain i) receiver protectors.   ii) mixers.   (8M)
   b) Explain electronic counter measures in detail.   (4M)

(OR)

7. a) Explain different types of radar displays?   (6M)
   b) Write about stealth applications?   (6M)

UNIT – IV

8. a) Explain about TACAN.   (6M)
   b) Explain about OMEGA.   (6M)

(OR)

9. a) Explain about DECCA navigational system.   (6M)
   b) Explain about DME.   (6M)

Hall Ticket Number:

October, 2016   **Electronics & Communication Engineering**

Eighth Semester   **Optical Communications**

Time: Three Hours   **Maximum :** 60 Marks

Answer Question No.1 compulsorily.   (1X12 = 12 Marks)

Answer ONE question from each unit.   (4X12=48 Marks)

1. Answer all questions   (1X12=12 Marks)

 a   State snells law.

 b   Calculate the cutoff wave length of a single mode fiber with core radius of 4 µm and Δ=0.005.

 c   For a fiber with core refractive index of 1.54 and fractional refractive index difference of 0.01.calculate its numerical aperture.

 d   What are bending losses .Name any two types.

 e   What is V number of a fiber?

 f   Define wave front.

 g   Compare and contrast between Surface and Edge emitting LED's.

 h   Define Population inversion in the case of a LASER.

 i   List any two advantages of trans-impedance amplifiers

 j   What do you mean by APD?

 k   Define Quantum limit.

 l   How does dark current arise?

UNIT – I

2.a   Explain the ray propagation into and down an optical fiber cable.   6M

2.b   Derive an expression for the acceptance angle of a fiber.   6M

(OR)

3.a   Discuss briefly about fiber materials.   6M

3.b   With neat diagrams, Explain about single and multi mode fibers.   6M

UNIT – II

4.a   Describe the linear and non linear scattering losses in optical fibers.   6M

4.b   Explain about Waveguide Dispersion.   6M

(OR)

5.a   Discuss in detail about fiber splicing.   6M

5.b   What are the primary requirements of a good fiber connector design?   6M

UNIT – III

6.a   With neat sketches, Explain the working of a LED.   8M

6.b   Derive an expression for the quantum efficiency of a double hetro-structure LED.   4M

(OR)

7.a   Draw and explain the structure of a Fabry-perot resonator cavity for a laser diode.   8M

7.b   Derive laser diode rate equations.   4M

UNIT – IV

8.a   With the schematic diagram, Explain the working of an optical receiver.   6M

8.b   What is rise time budget analysis? Derive an expression for the total system rise time budget in terms of transmitter fiber and receiver rise time.   6M

(OR)

9.a   Write a short notes on(i)Fiber refractive index profile measurement.   6M

9.b   (ii)Fiber cutoff wave length profile measurement.   6M

Hall Ticket Number:

IV/IV B.Tech (Supplementary) DEGREE EXAMINATION

October, 2016 **Electronics & Communication Engineering**

Eighth Semester **VHDL Programming**

Time: Three Hours **Maximum :** 60 Marks

Answer Question No.1 compulsorily. (1X12 = 12 Marks)

Answer ONE question from each unit. (4X12=48 Marks)

1. Answer all questions (1X12=12 Marks)

- a What is VHDL?
- b Differentiate between signals and variables?
- c What is hardware abstraction?
- d What is sensitivity list?
- e What is the difference between sequential and concurrent statements?
- f What is component in VHDL?
- g How to write sequential statements in VHDL?
- h What is the use of null statement?
- i What is delta delay?
- j What is the use of operator overloading?
- k What are attributes?
- l Define synthesis?

UNIT – I

2.a What are various styles of modeling in VHDL? Discuss by taking an example of a module modeled in all the styles? 8M

2.b Explain the difference between configuration declaration and configuration specification? 4M

(OR)

3.a What are package declaration and package body? Give examples? 8M

3.b Briefly explain the VHDL operators? 4M

UNIT – II

4.a Using a single bit subtractor , write a VHDL code for 4-bit subtractor? 6M

4.b Differentiate between conditional assignment statement and selected signal assignment statement with respect to 4:1 MUX? 6M

(OR)

5.a What are signals,constants and variables? Explain with an example? 6M

5.b Explain component declaration and component instantiation? 6M

UNIT – III

6.a Write a behavioral description of JKFF with active low preset and clear inputs using Process statement? 6M

6.b Discuss various types of Wait statements with examples? 6M

(OR)

7.a Explain the structure of various loop statements in VHDL with examples? 6M

7.b Write short note on difference between if and case statement. 6M

UNIT – IV

8.a What are two types of subprograms. Write a function of XOR gate and use it in the main code for making half adder. 8M

8.b Compare functions and Procedures? 4M

(OR)

9.a Write short notes on generate statements? 6M

9.b What are guarded signals? Discuss with example? 6M

Hall Ticket Number:

IV/IV B.Tech (Supplementary) DEGREE EXAMINATION

October, 2016 **Electronics & Communication Engineering**

Eighth Semester **Mobile & Cellular Communication**

Time: Three Hours **Maximum :** 60 Marks

Answer Question No.1 compulsorily. (1X12 = 12 Marks)

Answer ONE question from each unit. (4X12=48 Marks)

1. Define the following (12X1=12 Marks)

        a) How the coverage can be improved in cellular systems.
        b) What is an interference?
        c) What is the advantages of frequency reuse?
        d) Give the names of different diversity techniques.
        e) What is Doppler spread?
        f) Give the expression of Rayleigh distribution.
        g) What is IS-95 standard?
        h) What is link budget design?
        i) Write the features of GSM systems.
        j) What is WAP Model?
        k) Mention different global mobile services.
        l) Write the difference between 2G and 3G cellular systems.

UNIT I

2. Discuss the operation of paging system and cellular telephone system

(OR)

3 Explain the cellular telephone systems and how a call is made through cellular telephone systems.

UNIT II

4. Explain in detail about the basic propagation mechanisms: reflection, diffraction, and scattering.

(OR)

5. Explain the concept of linear and nonlinear equalizers

UNIT III

6. Discuss clearly about Radio sub system, channel types and frame structure of GSM system.

(OR)

7. Explain the forwardCDMA channel and reverse CDMA channel.

UNIT IV

8. Explain the quality of services in 3G and its system.

(OR)

9.Write short note on the following
        i) CDMA   ii) GPRS   iii) WAP Gateway