M.Sc. S.Y. (Electronics) (CBCS Pattern) Sem-IV

PSELT404.2 / Paper-IV (PSELT404-SEC 4) - Mobile and Satellite Communication

P. Pages : 2 **GUG/W/22/11374**

Time : Three Hours * 2 0 7 4 * Max. Marks : 80

Notes : 1. All questions are compulsory and carry equal marks.
2. Draw neat and well labelled diagram wherever necessary.

Either :-

1. a) What are limitations of conventional mobile telephone system? Explain a basic cellular system. **8**

b) Explain the following elements of cellular mobile radio system design: **8**
i) Maximum number of calls per hour per cell, and
ii) Maximum number of frequency channels per cell.

OR

c) Explain the concept of 'frequency reuse channel's **8**

d) Explain the concept and types of cell splitting. **8**

Either :-

2. a) Explain interfacing of mobile with computer. **8**

b) Explain the working of following subsystems of GSM architecture: **8**

i) Base station subsystem, and

ii) Network and switching subsystem.

OR

c) Explain mobility management of cellular system. **8**

d) Explain following features of GSM handset: **8**

i) SMS, and

ii) Security.

Either :-

3. a) Describe satellite orbit control system. **8**

b) How does satellite stabilized in a orbit? Explain. **8**

OR

c) Describe the telemetry trapping system. **8**

d) Explain the functions of a controlling earth station to satellite. **8**

Either :-

4. a) Explain TDMA system. **8**
State advantages of TDMA system over FDMA system.

b) What is CDMA system? **8**
Explain power control mechanism in CDMA system.

OR

c) Explain earth's path propagation effects in satellite communications. **8**

d) Explain the following satellite services: **8**
i) Weather forecasting, and
ii) Remote sensing.

5. a) What is space polarization? Explain. **4**

b) Explain application of mobile handset as modern. **4**

c) What is nose temperature? Explain. **4**

d) Describe direct to home (DTH) TV in brief. **4**

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