Registration No: | | | | | | | | | | |

Total Number of Pages: 02 **M.TECH**

P2ECCC01

2nd Semester Regular Examination 2016-17
Telecommunication Network & Optical Switching
BRANCH: COMMUNICATION ENGG, COMMUNICATION SYSTEMS, ELECTRONIC COMM. ENGG, ELECTRONIC AND TELECOMMUNICATION ENGG

Time: 3 Hours
Max Marks: 100
Q.CODE: Z385

Answer Question No.1 which is compulsory and any FOUR from the rest.
The figures in the right hand margin indicate marks.

Q1 Answer the following questions: ***Short answer type*** **(2 x 10)**

- **a)** What do you mean by fully connected Network? What is the number of links required for five entities in such network?
- **b)** Differentiate between centralized and distributed Stored Program Control?
- **c)** Differentiate between phased mode and slotted mode of time division time switching.
- **d)** State the Birth-Death process in telecommunication network using state transition diagram?
- **e)** What do mean by circuit switching and packet switching?
- **f)** What do you mean by Traffic in Traffic Engineering? Also write the unit of Traffic.
- **g)** What is Grade of Service?
- **h)** Write down the seven layers of OSI reference model?
- **i)** What is wave division multiplexing?
- **j)** What is burst switching?

Q2 **a)** What is a switching system? Write its Importance. How the switching system is classified? **(10)**

b) What is Stored Program Control? Explain the mode of operation of centralized SPC. **(10)**

Q3 **a)** What are the enhanced services in Telecommunication network? Explain all the categories of enhanced services. **(10)**

b) Write down the difference between single stage and multistage network. **(10)**

Q4 **a)** Find out the blocking probability in three stage network and also find out the minimum number of switching element required in this network? **(10)**

b) Explain the operation of time multiplexed time switch? **(10)**

Q5 **a)** (i)A group of 20 servers carry a traffic of 10 erlangs. If the average duration of a call is 3min. Calculate the number of calls put through by single server and the group as a whole in a one hour period. **(10)**

(ii) A subscriber makes three phone calls of 3min, 4min and 2min duration in a one hour period. Calculate the subscriber traffic in erlangs, CCS and CM.

b) What do mean by B-D process? Find out the dynamics of a B-D process. **(10)**

Q6 **a)** Write short notes on optical network layer? **(10)**

b) Explain the Photonic switch architecture based on TDM? **(10)**

Q7 **a)** Explain different buffering strategies in optical switching? **(10)**

b) Compare optical circuit switching and optical packet switching? **(10)**