

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE- SEMESTER-VI (NEW) EXAMINATION – WINTER 2020****Subject Code:2161103****Date:27/01/2021****Subject Name:Telecommunication Switching systems and Networks****Time:02:00 PM TO 04:00 PM****Total Marks: 56****Instructions:**

1. Attempt any FOUR questions out of EIGHT questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1**
- (a) Explain Birth-Death process. **03**
  - (b) Describe the terms of GOS (Grade of Service) and blocking probability. **04**
  - (c) Define the following terms. (i) Trunks (ii) Side tone (iii) ISDN (iv) Grade of service (v) DHCA (vi) Erlang (vii) centum call second. **07**
- Q.2**
- (a) Compare Strawger switching system and crossbar switching system. **03**
  - (b) Compare Ring and Star Topology. **04**
  - (c) Explain different signaling techniques in telecommunication network. **07**
- Q.3**
- (a) Compare circuit switching and Packet switching. **03**
  - (b) Explain Concept of Cellular Mobile Telephony. **04**
  - (c) Explain Enhanced service of stored program control. **07**
- Q.4**
- (a) Discuss Markov Process in brief. **03**
  - (b) Compare: Micro-programmed control vs. Hard-wired control. **04**
  - (c) Explain basic Time division time switching in detail with necessary diagram. **07**
- Q.5**
- (a) Compare Analog and Digital Telecommunication. **03**
  - (b) Explain the steps involved in conference calling among 3 users with block diagram. **04**
  - (c) Describe Distributed Store Programmed Control switching with Level-1, Level-2 and Level-3 processing. **07**
- Q.6**
- (a) Explain Rotary Switch in Brief. **03**
  - (b) Draw and explain simplex and half-duplex telephone circuits with necessary equations **04**
  - (c) Explain Time-Space(TS) and Space Time (TS) combinational switching system. **07**
- Q.7**
- (a) Briefly describe Common Channel Signaling. **03**
  - (b) Explain the load sharing mode of centralized SPC. **04**
  - (c) Explain (1)Space Diversity (2) Frequency Diversity (3)Polarization Diversity. **07**
- Q.8**
- (a) Discuss SS7 architecture in brief. **03**
  - (b) Derive the blocking probability for Lost Call Cleared [LCC] system for infinite sources. **04**
  - (c) Explain ISDN. **07**

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