

U.S.N.

B.M.S. College of Engineering, Bengaluru-560019

Autonomous Institute Affiliated to VTU

January 2024 Semester End Main Examinations

Programme: B.E.

Branch: Electronics and Telecommunication Engineering

Course Code: 19ET7PCSTN

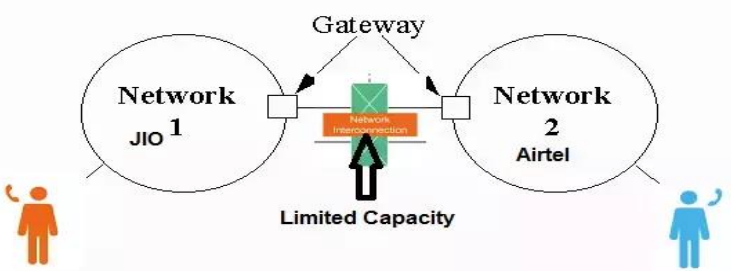
Course: Sustainable Telecommunication Networks

Semester: VII

Duration: 3 hrs.

Max Marks: 100

Instructions: 1. Answer any FIVE full questions, choosing one full question from each unit.
2. Missing data, if any, may be suitably assumed.

| Important Note: Completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. Revealing of identification, appeal to evaluator will be treated as malpractice. | | | UNIT - I | CO | PO | Marks |
|--|---|----|---|-----|-------|-------|
| | 1 | a) | Discuss the feasible solutions proposed for Telecommunications Sustainability. | CO1 | | 08 |
| | | b) | Analyze the strategies adopted by Airtel to sustain their operations | CO2 | PO1,7 | 06 |
| | | c) | Explain any three drivers of sustainability | CO1 | | 06 |
| | | | UNIT - II | | | |
| | 2 | a) | Evaluate various measures used to make wireless networks more energy efficient and briefly describe the effectiveness of two of these methods. | CO4 | PO7 | 08 |
| | | b) | Define the term 'GREEN' in telecommunication networks and discuss the various levels involved in achieving this environmental sustainability within these networks. | CO1 | | 06 |
| | | c) | Analyze energy efficiency in the context of Telecommunication networks and the ways to reduce energy consumption of telecommunication networks. | CO4 | PO7 | 06 |
| | | | UNIT - III | | | |
| | 3 | a) | Analyze the Fig 3a with proper justification for your analysis | CO3 | PO7 | 08 |
| | | |  <p>Fig 3a</p> | | | |
| | | b) | Analyze and outline the essential requirements for a Mobile Number Portability request. | CO3 | PO7 | 06 |
| | | c) | Evaluate and articulate the powers and responsibilities entrusted to the Department of Telecommunications (DoT). | CO1 | | 06 |

| | | | | | |
|---|----|---|-----|--------|----|
| | | OR | | | |
| 4 | a) | Analyze and categorize the various forms of Interconnection Usage Charges (IUC)? | CO3 | PO7,11 | 08 |
| | b) | Interpret the regulations governing Mobile Number Portability (MNP)? | CO2 | PO1 | 06 |
| | c) | Discuss the principles set by TRAI for Efficient Interconnection Price Structure. | CO3 | PO11 | 06 |
| | | UNIT - IV | | | |
| 5 | a) | Analyze the following cases and indicate which user would receive highest radiation. Cell phone A has SAR value that is higher than a single measurement for cell phone B. | CO4 | PO7 | 08 |
| | b) | Assess the safety consideration of living or working on the top floor of a building that has a mobile phone base station antenna and provide an explanation for potential health concerns | CO4 | PO7 | 06 |
| | c) | Analyze and elucidate the impact of radiation exposure on human body. | CO2 | PO7 | 06 |
| | | UNIT - V | | | |
| 6 | a) | Analyze and categorize the different pricing approaches in the Telecom Sector. | CO3 | PO11 | 08 |
| | b) | Differentiate the Business Model of mobile network operators from those of other industries. | CO1 | | 06 |
| | c) | Analyze the marketing and pricing strategies of JIO. | CO3 | PO11 | 06 |
| | | OR | | | |
| 7 | a) | Explain the price equation in detail with the proposed framework block diagram. | CO3 | PO11 | 08 |
| | b) | Discuss the three transformation goals of Vodafone | CO1 | | 06 |
| | c) | Compare and contrast the revenue model with that of a business model, highlighting their distinct characteristics and interrelationships. | CO3 | PO11 | 06 |
