Department of Electrical Engineering
Assignment
Date: 26/06/2020

Course Details

Course Title: Electric Power Distribution and Utilization   **Module:** 4th (B Tech)

Instructor: **Total Marks:** 50

Student Details

Name: **Student ID:**

Note: Draw neat diagram where necessary. Assume missing details if required.

Q1.	A DC distributor XY, which is 2 wired, 500m long, is fed from both ends at 230V. Various loads of 10 A, 40 A, 30 A and 40 A are tapped at distances of 100m, 250m, 350m and 450 m from the end X respectively. If the area of cross-section of distributor conductor is 2cm^2, find the minimum consumer voltage. Take the value of resistivity $1 \cdot 5 \times 10^{-5}\ \Omega$ cm	**Marks 10**
Q2.	A DC distributor AB, which is 2 wired, 3km long, supplies loads of 150A, 200A, 250A and 100A situated 500 m, 1300 m, 2300 m and 3000 m from the supply point A. The resistance of each conductor is $0 \cdot 02\Omega$ per 1000 m. Calculate the potential difference at each load point if a p.d. of 400 V is maintained at point A.	**Marks 10**
Q3.	A D.C. distribution system, which is 3-wired, is supplying a load of 7 Ω resistance across the positive outer and neutral and a load of 9 Ω resistance across negative outer and neutral at the far end of the distributor. The resistance of each conductor is $0 \cdot 2\ \Omega$. If the voltage between any outer and neutral at the load end is to be kept at 260 V, find the voltages at the feeding end.	**Marks 10**
Q4.	**(a)** What will happen if the insulating material used for underground cable is hygroscopic and has low dielectric strength?	**Marks 05**
	(b) Pure rubber cannot be used as an insulating material for underground cable. Justify this statement.	**Marks 05**
Q5.	**(a)** In Direct laying method of underground cable, the maintenance cost is high. Justify this statement.	**Marks 05**
	(b) The Solid system used for laying of underground cable is expensive as compared to direct laid system. Justify this statement.	**Marks 05**