HASMUKH GOSWAMI COLLEGE OF ENGINEERING, VAHELAL
MID SEMESTER EXAMINATION, SEPTEMBER-2016

Subject Code: 2150908 **Date: 27/09/2016**
Subject Name: EPS-1 **Sem:5TH Elect.**
Time: 10:00 TO 10:50 **Total Marks: 20**

Instructions:
1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q-1	A	Explain Kelvin's law.	3
	B	Define the sag in overhead line. Derive the equation of sag in case of When supports are at equal level.	3
Q-2	A	Explain connection schemes of Distribution System.	4
	B	Each line of a 3-phase system is suspended by a string of 3 similar insulators. If the voltage across the line unit is 17·5 kV, calculate the line to neutral Voltage. Assume that the shunt capacitance between each insulator and earth is 1/8th of the capacitance of the insulator itself. Also find the string efficiency.	3
		OR	
	B	In 33KV, overhead lines there are three units in the string of insulators. If the capacitance between each insulator pin and earth is 11 % of self-capacitance of each insulator, find (i) The distribution of voltage over three insulators and (ii) String efficiency.	3
Q-3	A	Explain method of improving string efficiency.	4
	B	Compare the merits and Demerits of underground versus overhead system.(six Point)	3
		OR	
Q-3	A	A 2-wire dc street mains AB, 600 m long is fed from both ends at 220 V. Loads of 20A, 40A, 50A and 30A are tapped at distances of 100m, 250m,400m and 500m from the end A respectively. If the area of X-section of distributor conductor is 1 cm^2, find the minimum consumer voltage. Take $\rho = 1.7 \times 10^{-6} \Omega$ cm.	4
	B	Explain complex power flow.	3