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

Subject Code: 2170901   **Date: 23/09/2016**
Subject Name: IPS   **Sem:7ᵀᴴ 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 RLDC and SLDC   3

    B   Explain type of Bus with all quantity.   3

Q-2 A   A three system is shown in fig. each line has impedance of 0.05+j0.15 pu. Find Y_{BUS}. If a new BUS 4   4
is added with BUS no 3 through a transmission line of 0.1+j0.3 pu. Find new Y_{BUS}.
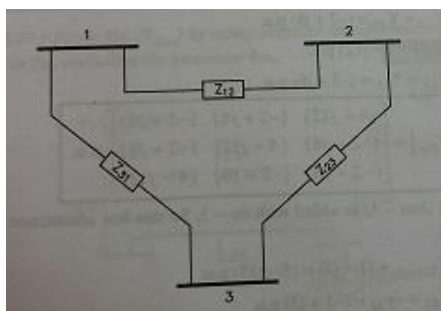
    B   Explain the Method of formation of Y_{BUS} using singular transformation method   3

OR

    B   Derive SLFE. from the first principle. Write it both in the rectangular and polar form   3

Q-3 A   For the two –bus system of fig. with the data as shown and with Y11=Y22=1.5 -80 pu and   4
Y21=Y12=1.9 100 pu, determine the per unit voltage at bus 2 by Gauss- Seidel method.
(Two Iteration)
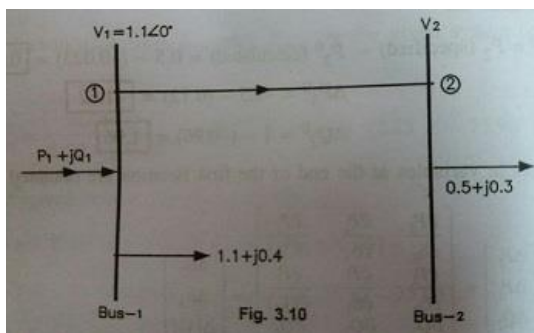
    B   Give the comparison of GS and NR method   3

OR

Q-3 A   Fig show a single line diagram of a power system where the generator is connected to the bus 1 and   4
the load is connected to the bus 2. The line impedance is 0.12+j0.23pu on a 100MVA a base. Per unit
real power and reactive power supplied to the load are 0.50 and 0.30 respectively. Bus 1 is slack bus.
Use GS method to determine (1) Voltage at bus 2(only two iteration) (2) slack bus real and reactive
power.
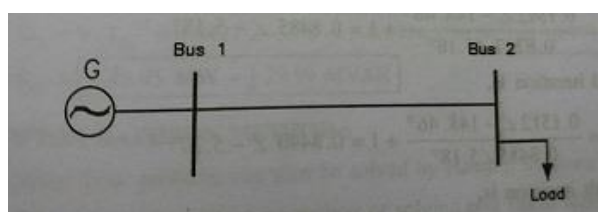
    B   Explain GS method.(only PV bus absent)   3