CT Inst. of Engg., M

Roll No.	Total No. of Pages: 04
Total No. of Questions: 09	Δ.

B.Tech. (EE/EEE) (Sem.-7th/8th)

COMPUTER AIDED POWER SYSTEM ANALYSIS

Subject Code: EE-402 Paper ID: [A0429]

Time: 3 Hrs.

Max. Marks: 60

INSTRUCTION TO CANDIDATES :

- 1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each
- SECTION-B contains FIVE questions carrying FIVE marks each and students has to attempt any FOUR questions.
- SECTION-C contains THREE questions carrying TEN marks each and students has to attempt any TWO questions.

SECTION-A

1. Answer briefly:

- a. What do you understand by 'Load Flow Studies'?
- b. What are the various methods to construct Z-bus of the given power system network?
- c. What is a single line diagram of electrical networks?
- d. What are the various representations of an electrical load?
- e. A 60Hz generator connected directly to an infinite bus operating at a voltage of (1+j0)p.u., has a synchronous reactance of 1.35p.u. The generator no-load voltage is 1.1p.u. and its inertia constant is 4MJ/MVA. The generator is suddenly loaded to 60% of its maximum power limit. Determine the frequency of the resulting oscillation of the generator rotor.
- f. What are the various types of buses that exist in a power system network?
- g. A 50Hz, 4 pole turbo generator rated at 20MVA, 13.2kV has an inertia constant H = 9kW-sec/kVA. Find the kinetic energy stored at synchronous speed. Find the accelerating torque if the shaft input less the rotational losses is 26,800 H.P. and the electrical power developed is 1600kW.

- h. A single-phase, 66/llkV, 17.5MVA transformed and 2.85% leakage reactance drop. Find the of the transformer referred to LT side.
- What is synchronizing power coefficient? Stat criterion for a simple system.
- j. What is the significance of symmetrical comp

SECTION - B

- 2. A small generating station has two alternators, eac of 9%, connected to a bus bar. The circuit bre rated 165MVA. A new supply is added rated 81 7%. Can the same breakers be used? If not, reactance to be connected in series with the bubar voltage is 3.3kV?
- 3. Distinguish between symmetrical and unsymmetrical fault calculations. How can into account in fault calculations?
- 4. Discuss the modelling of loads in a power system
- 5. What do you understand by the term 'Stability' are the various types of stability? Discuss these factors that affect transient stability?
- 6. Adelta connected balanced resistive load is confined phase supply as shown in fig.l. With a specified, find the symmetrical components of lisymmetrical components of the delta currents. The currents in phase A and phase B are 5-j2 respectively.

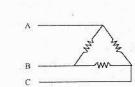


Fig. 1

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