

AQ-2737

Faculty of Engineering & Technology

M.E. Electrical (Electrical Power System) [F.T.] Semester—II (C.G.S.) Examination

FACTS AND POWER QUALITY

Paper—2 SEPS 5

Sections—A & B

Time—Three Hours]

[Maximum Marks—80

INSTRUCTIONS TO CANDIDATES

- (1) All questions carry marks as indicated.
- (2) Answer **TWO** questions from Section A and **TWO** questions from Section B.
- (3) Due credit will be given to neatness and adequate dimensions.
- (4) Assume suitable data wherever necessary.
- (5) Illustrate your answers wherever necessary with the help of neat sketches.
- (6) Use pen of Blue/Black ink/refill only for writing the answer book.

SECTION—A

1. (a) Explain necessity, advantages and types of FACT devices. 10
(b) Describe transient stability enhancement using series compensation with phasor diagram and power angle curve. 10
2. Explain the following :
 - (i) Static VAR compensator
 - (ii) Thyristor controlled series Capacitor
 - (iii) Thyristor controlled phase shifting transformer. 20

3. Write notes on :

(i) Static synchronous series compensator

(ii) Unified power flow controller.

20

SECTION—B

4. (a) Define power quality and explain the need of power quality.

10

(b) Write a short note on harmonics.

10

5. Define and explain the following terms :

(i) Voltage flicker

(ii) Voltage unbalance.

20

6 (a) Explain voltage sag with neat diagram. Explain the causes and effect of the same.

10

(b) Describe various factors to be taken into account during wiring to avoid power quality problem.

10