

BEE ELEC / SEM VIII / R-19 / SH-25 / 21-08-25

Duration 3hrs

Total Marks 80

- NB:** 1) Question No. 1 is Compulsory.
 2) Attempt any three Questions out of remaining five Questions.
 3) Assume suitable data if necessary and justify the same.

- Q1. Answer any four the following questions
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|----|---|----|
| A) | Explain different types of harmonics present in power system | 05 |
| B) | What are the different methods for power factor correction? | 05 |
| C) | Explain load compensation state its objective. | 05 |
| D) | What are the limitations of TCSC? | 05 |
| E) | List different disturbances present in the power system. | 05 |
| Q2 | A) Explain the working principle of FC-TCR along with VI characteristic. | 10 |
| Q2 | B) What is power factor when both voltage and current are sinusoidal? | 10 |
| Q3 | A) Explain the power flow in parallel system. | 10 |
| Q3 | B) Explain the mitigation of harmonics using active filter? | 10 |
| Q4 | A) Why FACTS are used in power system? | 10 |
| Q4 | B) Write the short note on PQ theory? | 10 |
| Q5 | A) What are the main causes and sources of voltage unbalance? | 10 |
| Q5 | B) Write the short note on TSSC. | 10 |
| Q6 | A) Find out the value of capacitor in KVAR to improve the power factor of a 120 kw Induction motor from 0.75 to 0.96. | 10 |
| Q6 | B) Why transmission interconnection is needed | 10 |
