# Power System Protection-Questions

## B.E. Sem-VIII-Electrical

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| 1. | Discuss the essential properties of a protective system? |
| 2. | What is meant by primary protection? Why is back-up required? Discuss different types of back-up protection. |
| 3. | Why is a power system divided into a number of protective zones? Why do adjacent zones overlap? |
| 4. | Explain construction and working of an over current relay? How is the plug setting and time setting done? |
| 5. | Discuss classification of over current relays? |
| 6. | Explain time grading and current grading of radial feeders using over current relays. |
| 7. | What are the dis-advantages of time and current grading because of which combination of the two is preferred? |
| 8. | Explain the construction and working of directional over-current relays? Derive its torque equation. |
| 9. | Explain why the 30°, 60° and 90° connections provided in a directional relay. |
| 10 | How are parallel feeders and ring main system protected using directional and non-directional relays? |
| 11 | Discuss construction and operating principle of induction type of electromagnetic relay. Derive its torque equation. |
| 12 | Discuss construction and operating principles of different types of electromagnetic relays. |
| 13 | Define PSM and TMS. Explain the significance of these terms. |
| 14 | Write a short note on Buchholz relay. |
| 15 | Discuss simple differential protection of a transformer. |
| 16 | What are the dis-advantages of simple differential protection of a transformer because of which biased differential protection is used? |
| 17 | Explain restricted earth fault protection of an alternator. |
| 18 | What are the advantages of numerical relays as compared to electromagnetic relays. |
| 19 | Explain the construction, principle of operation and torque equation of an impedance relay. |
| 20 | Discuss the stepped three zone protection using impedance relays. |
| 21 | Explain the construction, principle of operation and torque equation of an reactance relay. |
| 22 | Define reach, over reach, under reach, burden, CT ratio error, CT phase angle error, blind spot, unit protection, knee point , ankle point, pick-up, reset. |
| 23 | Explain the construction, principle of operation and torque equation of a MHO relay. |
| 24 | Discuss the block diagram for interface of an Impedance relay. |
| 25 | Discuss the block diagram for interface of a MHO relay. |
| 26 | Discuss the block diagram for interface of a reactance relay. |
| 27 | Discuss the block diagram for interface of an over-current relay. |

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| 28 | Why is carrier current protection used? |
| 29 | Explain the line diagram of the equipments used in carrier current protection. |
| 30 | Explain directional aided carrier current protection. |
| 31 | Explain phase comparison carrier current protection. |
| 32 | Discuss the magnetizing characteristics of a current transformer showing all the regions distinctly. |
| 33 | What protection is used in case of single phasing of an induction motor. |
| 34 | Explain bus zone protection. |
| 35 | Explain what is meant by cascade tripping. |
| 36 | Why is the setting of earth fault relays kept low as compared to that of phase fault relays. |
| 37 | Write a note on testing of relays. |
| 38 | Explain the stability tests and special tests carried out on relays. |
| 39 | Discuss the three phase differential protection of a generator. |
| 40 | Discuss the protection schemes used in an induction motor. |