

PARUL UNIVERSITY
FACULTY OF ENGINEERING & TECHNOLOGY
B.Tech. Summer 2021 - 22 Examination

Semester : 8
Subject Code: 03106454
Subject Name: Power Quality & Management

Date: 01/04/2022
Time: 10:30am to 1:00pm
Total Marks: 60

Instructions:

1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

Q.1 Objective Type Questions - (All are compulsory) (Each of one mark) (15)

1. The most common way to calculate voltage sag is from _____
(a) RMS Voltage (b) Average voltage (c) Peak voltage (d) All
2. The Transients in the power system occurs for
(a) less than two complete cycles (b) less than one complete cycles
(c) exact two complete cycles (d) exact one complete cycles
3. Reducing the number of short-circuit faults in a system, reduces _____
(a) Sag (b) Interruptions (c) Sag & Interruptions (d) none of the above
4. The harmonic distortion is produced by
(a) Linear device (b) Non linear device (c) a&b (d) none
5. Harmonic indices are used to measure harmonic content of a
(a) Voltage (b) Frequency (c) Waveform (d) None
6. Passive filter is used to control _____
7. Passive filter should be placed on a _____
8. Ballast is _____ limiting device.
9. A Series passive filter is connected in _____ with the load.
10. A low pass filter is used to block _____ harmonics frequencies.
11. What is full form of THD.
12. What is the full form of EMI?
13. What is voltage Swell?
14. Define Impulse.
15. Define Noise.

Q.2 Answer the following questions. (Attempt any three) (15)

- A) Describe following terms 1) Ground Electrode 2) Ground Grid 3) Ground Loop 4) Ground Ring
5) Coupling
- B) Why Power Quality is important?
- C) Effect if EMI
- D) Explain online and offline UPS.

Q.3 A) Explain Power Factor improvement using static VAR compensators. (07)

B) Discuss the effect of harmonics on different loads. (08)

OR

B) Explain Sources of EMI. (08)

Q.4 A) Explain transient system model. (07)

OR

A) Explain Dynamic voltage restorer (DVR) with block diagram. (07)

B) Explain any one causes of transients and its Mitigation techniques. (08)