Enrollment No……

Bachelor of Engineering
Sixth Semester Examination, June-2021
Switchgear & Protection [EX-601]
Branch- EX

Time: 3:00 Hrs **Max Marks 70**

Note : 1. Attempt any five questions.
2. All question carry equal marks.
3. Answer should be precise & to be point only.
4. Assume suitable data if necessary & state them clearly.

Q.1 (a) Describe different types of symmetrical & unsymmetrical faults in power systems.
(b) Draw and explain single line and equivalent impedance diagram of power system components.

Q.2 (a) Define per unit impedance with a suitable example.
(b) What is current limiting reactors and what are its applications?

Q.3 (a) Define relay. Explain primary and backup protection of relay.
(b) Explain the concept of pickup, reset & drop-off ratio, drop off/ pick up ratio.

Q.4 (a) Explain R-X diagram in detail.
(b) Explain working principle and characteristics of IDMT relay.

Q.5 (a) What do you understand by impedance, mho & reactance relay with R-X diagram?
(b) Describe static analog & digital relays.

Q.6 (a) What is elementary principle of arc quenching? Define recovery and restriking voltage
(b) Explain operation of SF6 circuit breaker and write its advantages.

Q.7 (a) What do you understand by lightning and also discuss over voltage due to lightning?
(b) What are lightning arrestors?

Q.8 Write short note (any three)

(i) Over Current Relay
(ii) Over Voltage Relay
(iii) Directional Relay
(iv) Differential Relay

Enrollment No……

Bachelor of Engineering
Sixth Semester Examination, June-2021
Digital Signal Processing [EX-602]
Branch-EX

Time: 3:00 Hrs **Max Marks 70**

Note: **1. Attempt any five questions.**
2. All question carry equal marks.
3. Answer should be precise & to be point only.
4. Assume suitable data if necessary & state them clearly.

Q.1 (a) What is sampling of discrete signals, explain?
(b) Write a short note on discrete time signals & system.

Q.2 (a) Write the properties of the discrete time Fourier transform (DTFT).
(b) Define DFT of a given time sequence x(n) and hence write five different properties of DFT by giving suitable illustrations.

Q.3 (a) Describe one sided z-transform and its properties.
(b) Mention the properties of discrete Fourier series.

Q.4 (a) What do you understand by discrete Fourier transforms?
(b) What are the properties of DFT?

Q.5 (a) Describe fast Fourier transforms (FFT).
(b) Describe IIR digital filters.

Q.6 (a) What is Butterworth filter?
(b) Describe Chebyshev filter.

Q.7 (a) What do you understand by FIR DIGITAL FILTERS.
(b) Write a short note on Design of FIR Digital Filters using Window Techniques.

Q.8 (a) Differentiate between IIR and FIR filters.
(b) Define and explain inverse FFT.

Enrollment No……

Bachelor of Engineering
Sixth Semester Examination, June-2021
Electronic Instrumentation [EX-603]
Branch- EX

Time: 3:00 Hrs **Max Marks 70**

Note: 1. Attempt any five questions. All question carry equal marks.
2. Student should not write anything on Question paper.

Q.1 (a) What is CRO? Explain its block diagram.
(b) Explain:
(i) Maxwell's inductance capacitance bridge (ii) Schering bridge

Q.2 (a) Explain transducer with classification.
(b) Explain principle of LVDT.

Q.3 (a) Explain Q meter and its applications.
(b) Describe harmonic distortion analyzer with help of block diagram.

Q.4 (a) Draw the block diagram of ramp type digital voltmeter and explain its working.
(b) Explain the principle of working of a magnetic tape recorder. What are its basic components?

Q.5 (a) What do you understand by function generator? Draw its block diagram and explain its working.
(b) How can fiber optical power be measured? Also discuss with the help of block diagram.

Q.6 (a) How can fiber optical be measured. Also discuss with the help of block diagram.

(b) What are Lissajous patterns?

Q.7 (a) What are the advantages of digital instruments over analog instruments?
(b) Draw the block diagram of successive approximation types digital voltmeter and explain its working.

Q.8 Write short note on:-
(i) Sine wave generators
(ii) Square and pulse generators

Enrollment No……

Bachelor of Engineering

Sixth Semester Examination, June-2021

Power System-II [EX-604]

Branch- EX

Time: 3:00 Hrs **Max Marks 70**

Note: 1. Attempt any five questions. All question carry equal marks.
2. Student should not write anything on Question paper.

Q.1 (a) Explain the Netwon Raphson method of load flow studies
(b) What are the advantages of interconnections? Explain the concept of single area interconnected system and multi area interconnected system.

Q.2 (a) Discuss the following:-
(i) Load damping (ii) Speed regulation
(b) Explain the equal area criteria for transient stability analysis. Also mention its limitations.

Q.3 (a) Discuss the significance of distributed generation in a power system, deregulation environment.
(b) Name different types of power flow studies in power system, explain any one method in detail.

Q.4 (a) Compare Gauss-Seidel and Newton Raphson Method.
(b) Write a short note on economic dispatch using lagragian multiplier method.

Q.5 (a) Draw and explain block diagram of single and two area interconnected system.
(b) What are the characteristics of an excitation system?

Q.6 (a) Describe in brief steady state, dynamic and transients stability.
(b) What is swing equation?

Q.7 (a) What are the method of improving transient stability?
(b) Explain economic dispatch and emission dispatch of power systems.

Q.8 Explain any one:-
(i) Solution of swing equation using step by step method.
(ii) Modified Eulers method.
(iii) Range Kutta method.

Enrollment No.....

Bachelor of Engineering

Sixth Semester Examination, June-2021

High Voltage Engineering [EX-605]

Branch- EX

Time: 3:00 Hrs **Max Marks 70**

Note: 1. Attempt any five questions. All question carry equal marks.
2. Assume suitable data if necessary and state them clearly.

Q.1 (a) What are the advantages of transmitting electrical power at high voltages?
(b) Mention the need for generating high voltages in laboratory.

Q.2 (a) Discuss the Classification of HV insulating media and write the Properties of important HV insulating media.
(b) What is the criteria for gaseous insulation breakdown based on Townsend's theory?

Q.3 (a) What are the Limitations of Townsend's theory?
(b) Describe Paschen's law and its significance.

Q.4 (a) What are the types of Breakdown of liquids dielectrics? Describe (any two).
(b) What is the need for cascade connection and also explain the working of transformers units connected in cascade.

Q.5 (a) What is series resonant circuit? Explain its principle of operation and advantages.
(b) Describe Triggering of impulse generator by three electrode gap arrangement.

Q.6 (a) Describe electrostatic voltmeter with its principle construction and limitation.
(b) Describe generating voltmeter with its principle and construction.

Q.7 (a) Describe high voltage tests on isolators and circuit breakers.
(b) Mention the process of high voltage tests on cables insulators and transformers.

Q.8 Write short notes on:
(i) Generation of switching impulse voltage.
(ii) Generation of high impulse current.