

FEE pya

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Unit 1

F-23

- Q1 Resistance and its unit - 2
- Q2 Application of following  
FET MOS - 4  
Diode Transistor
- Q3 Independent and Dependent source <sup>Draw</sup> Symbol - 6

S-23

- Q1 Name of active and passive components - 4
- Q2 Draw Symbol and state Applications - 4  
Diode FET  
Transistor (PNP & NPN)
- Q3 Ideal current source and voltage source <sup>examples</sup> - 4

F-22

- Q1 What is passive components? Examples - 2
- Q2 Ideal - practical voltage and current source - 4
- Q3 Draw symbol and one application - 6  
Zener diode CMOS  
Transistor



## Unit - 2

## F-23

- Q1 What is virtual ground? - 2
- Q2 Difference Ideal and practical OP-Amp - 4
- Q3 Integrator circuit with Input, Output waveform - 6

## S-23

- Q1 What is ideal OP-AMP? - 2
- Q2 OP-AMP configurations with diagram - 10

## F-22

- Q1 What is operational amplifier? - 2
- Q2 Characteristics of Ideal operational amplifier - 4
- Q3 Differential circuit - 6



## Unit - 3

### F - 23

- Q1 What do you mean by universal gate - 2
- Q2 TTL gate with diagram - 4
- Q3 What are counters? Explain up-down counter - 6

### S - 23

- Q1 De - Morgan's theorem - 3
- Q2 Draw symbol, Boolean expression & Truth AND gate OR gate NOR gate NAND gate - 4
- Q3 Ripple counter with diagram - 5

### F - 22

- Q1 Convert 23 to binary - 2
- Q2 Explain storage memory - 4
- Q3 Explain ripple counter diagram - 6
- Q4 short note Boolean operations - 2



## Unit 4

## F-23

- Q1 Lenz law - 2
- Q2 Statically Induced EMF vs Dynamically Induced EMF - 4
- Q3 Draw and explain B/H curve - 6
- Q4 Short note Self and mutual Induction - 2

## S-23

- Q1 Define following terms and units - 6
 

Power	Energy
Flux density	Potential difference
MMF	Reluctance

- Q2 Faradays law of Electromagnetic Induction - 3
- Q3 Electric circuit VS Magnetic circuit - 3
- Q4 Self Induction and Mutual Induction - 4

## F-22

- Q1 Power and Energy - 2
- Q2 Faradays law - 4
- Q3 Electric VS Magnetic circuit - 6
- Q4 B/H curve and application - 6



## Unit - 5

F - 23

- Q1 What is power triangle. Draw it - 2
- Q2 Define following - 4
  - Cycle Frequency
  - Time period Form Factor
- Q3 Derive formula for Impedance in R-L-C series circuit - 6
- Q4 Phasor representation of alternating emf and current - 4

S - 23

- Q1 Define - 4 - 5
  - Amplitude RMS value
  - Average value Form Factor
- Q2 A single phase 230 V, 50 Hz, R-L-C series circuit has resistance of  $10\ \Omega$ , inductance of  $0.2\text{ H}$  and capacitance of  $30\ \mu\text{F}$ . calculate - 6
  - ① Current ② active power
  - ③ Power Factor ④ Voltage drop across R and L
- Q3 Voltage current relationship in star and delta connection - 2
- Q4 Draw power triangle. Define active power and reactive power with units - 4



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F-22

- ① Different type of power in AC circuit and Formula - 2
- ② Relationship between voltage and current in star and delta connection - 4
- ③ Define following in AC circuit  
Average value  
R.M.S. value  
Peak factor - 6
- ④ R-L series circuit - 4

Unit - 6

F-23

- ① Transformation ratio of Transformers - 2
- ② Basic principle of Transformer - 4
- ③ Diagram of different AC machines - 6
- ④ Auto transformer - 6

S-23

- ① Principle of transformer - 2
- ② Construction and working with diagram - 6
- ③ Construction and working of three phase induction motor - 4
- ④ Derive emf equation of transformer - 4



F-22

- ① Basic principle of DC motor - 2
- ② Name of different type of electrical machines - 4
- ③ EMF equation of transformer - 6