

F.Y. Diploma : Sem. II
Basic Electronics
[CO/CD/CM/CW/IF]
Prelim Question Paper



Time : 3 Hrs.]

[Marks : 100

- Instructions :** (1) All questions are compulsory.
(2) Illustrate your answers with neat sketches wherever necessary.
(3) Figures to the right indicate full marks.
(4) Assume suitable data, if necessary.
(5) Preferably, write the answers in sequential order.

1. Attempt any **TEN** of the following : [20]
- Give the classification of capacitor. State the unit of capacitor.
 - Give the applications of zener diode.
 - Give the classification of integrated circuits.
 - State the types of JFET. Draw their symbol.
 - State the two advantages and disadvantages of Integrated circuits.
 - State any four applications of BJT.
 - Give the classification of ICs.
 - What is need for coupling?
 - Compare NPN and PNP transistor.
 - List the different types of MOSFET and draw their symbols.
 - List advantage of IC.
 - Draw V-I characteristic of PN junction diode.
2. Attempt any **FOUR** of the following : [16]
- Draw and explain V-I characteristics of zener diode.
 - Draw the output characteristics of CE configuration of BJT and show all three regions.
 - List the four specifications of p-n junction diode.
 - Write the function of each component used in single stage CE amplifier.
 - Draw the construction of N-channel FET and describe it.
 - Explain "How transistor work as switch".
3. Attempt any **FOUR** of the following : [16]
- Describe construction and working of LED.
 - Draw and explain construction of NPN transistor.
 - Define alpha and beta of a transistor and give the relation between them.
 - Give the complete classification of oscillators.
 - Draw the neat circuit diagram of two stage Transformer coupled amplifier.
 - Explain working of crystal oscillator.
4. Attempt any **FOUR** of the following : [16]
- Compare JFET and BJT.
 - Draw a block diagram of regulated power supply. State the need of each block.
 - State the need of multistage amplifier. Compare RC and direct coupled amplifiers with its frequency response and applications.
 - Draw the transfer characteristic of n-channel J-FET and give the meaning of I_{DSS} and V_{GS} off.
 - State the need of filter and explain 'C' type filter with diagrams and waveforms.
 - Draw the circuit diagram of single stage CE amplifier. Give function of each components.

5. Attempt any **FOUR** of the following : [16]
- (a) Define the following for P-N junction diode.
 - (i) Knee voltage
 - (ii) Peak inverse voltage
 - (iii) Reverse saturation current
 - (iv) Maximum forward current
 - (b) Draw a frequency response of single stage common emitter amplifier. Explain the effect of coupling capacitor and junction capacitor.
 - (c) Differentiate between P-N junction diode and zener diode.
 - (d) Define the following terms :
 - (i) PIV of diode
 - (ii) Efficiency of Rectifier
 - (iii) Rectification
 - (iv) Ripple factor
 - (e) Explain the working of zener as a voltage regulator.
 - (f) State advantages and disadvantages of bridge rectifier.
6. Attempt any **FOUR** of the following : [16]
- (a) Compare half wave, centre tap and bridge type full wave rectifier on the basis of :
 - (i) Ripple factor
 - (ii) Rectification efficiency
 - (iii) TUF
 - (iv) PIV
 - (b) Draw and explain constructional details of N-channel JFET.
 - (c) Explain the working principle of n-channel depletion type of MOSFET.
 - (d) Draw the block diagram of regulated power supply and explain the working of each block.
 - (e) Draw the net circuit diagram of direct coupled amplifier. Give two applications.
 - (f) Compare LC and CLC filter.

Paper Discussion Schedule for all Subject: F.Y. Diploma Sem.-II

Date	Day	Timing	Centre
9 April 2017	Sunday	9 a.m. to 11 a.m.	Dadar
9 April 2017	Sunday	12 p.m. to 2 p.m.	Thane
9 April 2017	Sunday	9 a.m. to 11 a.m.	Ghatkopar
9 April 2017	Sunday	12 p.m. to 2 p.m.	Borivali
9 April 2017	Sunday	12 p.m. to 2 p.m.	Nerul
9 April 2017	Sunday	3 pm to 5 pm	Kalyan

