

SB-0612

First Year B. Sc. Examination

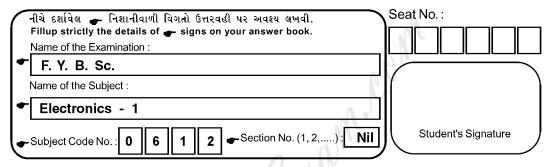
March/April - 2011

Electronics: Paper - I

(Electronics Devices & Components)

Time: 3 Hours] [Total Marks: 70

Instruction:



- (2) Figures on the right indicate full marks.
- (3) All symbols and abbreviations have their usual meaning.
- (4) Non-programmable calculators are allowed.
- (5) Q.1 is compulsory.
- (6) Assume data if necessary.
- 1 Answer in short (7×2)

14

- (a) Define "Tolerance"
- (b) Write colour code for 10 k Ω , 100 k Ω
- (c) Compare BJT and FET
- (d) Write the full form of:
 - (1) MOSFET
 - (2) P.T.C.
 - (3) LCD
 - (4) SCR
- (e) What is junction capacitance in diode?
- (f) Define "Operating point"
- (g) Write the names of different types of switches
- 2 (a) Describe all types of transformer in detail

8

- (b) Explain in brief (1) Dielectric constant
 - (2) Power factor (3) Dielectric losses of capacitor

OR

SB-0612] 1 [Contd...

2	(a) (b)	What is V.D.R and L.D.R? Explain in brief Write note on LVDT	8 6
3	(a) (b) (c)	Compare conductor, semiconductor and insulator What is Avalanche and Zener breakdown? Explain with figure. How is transistor working as switch?	6 5 3
	(0)	OR	•
3	(a) (b) (3)	Explain diode characteristics with figure. Briefly explain working of SCR If $V_{\scriptscriptstyle F}=0.9$ and $I_{\scriptscriptstyle F}=18$ mA in forward diode characteristics, calculate the static forward resistance.	6 5 3
4	(a)	Define α . Show that it is always less than unity	8
		Define β , Show that $\beta = \frac{\alpha}{(1-\alpha)}$	
	(b)	Draw the load line and explain the importance of load line	3
	(c)	A transistor has an $I_{\rm C}$ of 100 mA and $I_{\rm B}$ of 0.6 mA. What is the value of α_{dc} ?	3
		\mathbf{OR}	
4	(a) (b)	Explain principle and working MOSFET What is intrinsic stand off ratio? Briefly explain working of UJT.	8 5
5	Wri (a) (b) (c) (d)	te short notes on any two : Tunnel diode Reed relay Photo voltaic Cell TRIAC.	2=14

SB-0612] 2 [300]