

A-2997

Second Year B. Sc. (Sem. III) Examination March / April - 2015

Electronics (Applied Electronics): Paper - III (Electronics Devices & Circuits)

Time: 2 Hours [Total Marks: 50

Instructions:

(1)	~
નીચે દર્શાવેલ 🚁 નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી. Fillup strictly the details of 🚁 signs on your answer book.	Seat No. :
Name of the Examination :	
SECOND YEAR B. SC. (SEM. 3)	
Name of the Subject :	 (
◆ ELECTRONICS - 3	
Subject Code No. : 2 9 9 7 Section No. (1, 2,) : NIL	Student's Signature

- (2) Figures on the right indicates 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 brief $(2 \times 7 = 14)$

14

- (a) Give full form of BJT & JFET.
- (b) Give full form of MOSFET and CMOS.
- (c) Draw the Darlington pair circuit and its application.
- (d) Draw a Basic ac amplifier circuit using BJT.
- (e) What is Oscillator?
- (f) What is an Amplifier?
- (g) Is Gain-Bandwidth product of with feedback and without feedback amplifier is same? Justify.
- 2 (a) In a simple tuned amplifier, the circuit bandwidth is 4 kHz and the voltage gain is maximum value at 200kHz, when the tuning capacitor is adjusted to 470pF. Find quality factor of the circuit and inductance of the coil.

OR

	(a)	Draw a elementary JFET amplifier, which has	6
		gm =1600 siemen , $r_{_{\! d}}\!=\!50k\Omega$ and $R_{_{\rm L}}\!=\!5k\Omega$ Calculate	
		Voltage Gain	
	(b)	Draw and Explain LC Oscillator in detail.	6
		OR	
	(b)	Expplain h-parameter model detail.	6
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3	(a)	Enlist/Classify amplifiers.	6
		OR	
	(a)	What is Piezo-electric effect? What are the advantages	6
		of Crystal Oscillator then other available oscillator.	
	(b)	Draw and Explain the Uni-junction Oscillator in detail.	6
		OR	
	(b)	Difference between positive feedback and Negative	6
		feedback amplifier. Mention also their advantages .	
4	Wwi	te short Notes on any Two:- 6×2=1	19
4	(a)	CMOS Circuit.	14
	(a) (b)	Voltage divider bias.	
	(c)	Tuned Oscillators	
	(d)	R–C Oscillators.	
	(4)	TO COMMITTEE TO CO	