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) Fill up strictly the details of signs on your answer book.
   - Name of the Examination : SECOND YEAR B. SC. (SEM. 3)
   - Name of the Subject : ELECTRONICS - 3
   - Subject Code No. : 2997
   - Seat No. : 
   - Section No. : NIL

   (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 (2×7=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

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(a) Draw a elementary JFET amplifier, which has $g_m = 1600$ siemen, $r_i = 50k\Omega$ and $R_L = 5k\Omega$. Calculate Voltage Gain.

(b) Draw and Explain LC Oscillator in detail.

OR

(b) Explain h-parameter model detail.

3 (a) Enlist/Classify amplifiers.

OR

(a) What is Piezo-electric effect? What are the advantages of Crystal Oscillator then other available oscillator.

(b) Draw and Explain the Uni-junction Oscillator in detail.

OR

(b) Difference between positive feedback and Negative feedback amplifier. Mention also their advantages.

4 Write short Notes on any Two:

(a) CMOS Circuit.

(b) Voltage divider bias.

(c) Tuned Oscillators

(d) R–C Oscillators.