B.TECH SEM - IV (2007 COURSE) (E & TC ENGG.) : SUMMER - 2018

SUBJECT : ELECTRONIC CIRCUITS

Day :	**Saturday**	**S-2018-2644**	Time : **10.00 AM TO 01.00 PM**
Date :	**02/06/2018**		Max. Marks : 80

N. B. :

1) **Q. No. 1** and **Q. No. 5** are **COMPULSORY**. Out of remaining attempt **ANY TWO** questions from each section.
2) Figures to the right indicate **FULL** marks.
3) Answers to both the sections should be written in separate answer books.
4) Use of non-programmable calculator is **ALLOWED**.
5) Assume suitable data, if necessary.

SECTION-I

Q. 1 **a)** Differentiate MOSFET and Power MOSFET. **(04)**
b) Which types of distortions can be occurred in power amplifiers? **(05)**
c) What is single tuned amplifier? **(05)**

Q. 2 **a)** Explain V MOSFET in details. **(06)**
b) Elaborate following terminologies: **(07)**
i) Thermal Resistance **iii)** Safe Operating Area
ii) Second Breakdown **iv)** Thermal Runaway

Q. 3 **a)** Which are the basic amplifiers used in feedback amplifiers? Explain them in details. **(07)**
b) An amplifier with open loop gain of A=2000 ± 150 is available. It is necessary to have an amplifier whose gain varies by not more than ± 0.2 % Calculate A_f and β. **(06)**

Q. 4 **a)** Derive cutoff frequencies in terms of hybrid parameters. **(07)**
b) What is the utilization of hybrid CE model? **(06)**

SECTION-II

Q. 5 **a)** Compare negative and positive feedback in amplifier. **(04)**
b) What is phase shift oscillator? **(05)**
c) Explain 79XX series IC regulator with circuit diagram. **(05)**

Q. 6 **a)** If an amplifier has a bandwidth of 200KHz and voltage gain of 100. What will be the new bandwidth and gain if 5% negative feedback is introduced? What will be the product of gain and bandwidth before and after adding negative feedback? **(07)**
b) Explain voltage shunt amplifier in detail. **(06)**

Q. 7 **a)** What is Wien bridge oscillator? **(06)**
b) For Colpitt's oscillator frequency of oscillations is 2.5 MHz, L=10μH and C1=0.02μF, find C2 and If L is doubled new value of frequency of oscillations. **(07)**

Q. 8 **a)** Explain all performance parameters of regulator in detail. **(08)**
b) Design adjustable voltage regulator using IC 7805 for Vo=+5 to 10V **(05)**

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