



K.D.K. COLLEGE OF ENGINEERING NANDANVAN, NAGPUR-09

DEPARTMENT OF ELECTRONICS ENGINEERING

B.E. 6th Semester (Even Semester)

SESSION 2018-19



Sub: -Microwave Engineering

Assignment No-I

Sem.:- VI Sem.

Last Date: - 10.01.2019

Bloom's Taxonomy Levels – 1. Remember 2. Understand 3. Apply 4. Analyze 5. Evaluate 6. Create

Question no 1, 2, 3 are based on CO601.1 - Analyze and find applications and limitations of microwave active devices.

Question no 4, 5, 6 are based on CO601.2- Understand the working of magnetron (M type active device) used as an oscillator.

Que. No	Question	BTL level
Q.1	Explain with suitable sketch the operation of two-cavity Klystron amplifier. Explain the concept of velocity and current modulations.	L1
Q.2	A two-cavity Klystron amplifier has the following parameters: $V_o = 1000V$, $R_o = 40 K \text{ ohms}$, $I_o = 25 \text{ mA}$, $f = 3 \text{ GHz}$. Gap spacing in either cavity (d) = 1 mm. Spacing between the two cavities (L) = 4 cms. Effective shunt impedance, excluding beam loading (R_{sh}) = 3 p K ohms. Find (i) The input gap voltage to give maximum voltage (V_2) (ii) The voltage gain, neglecting the beam loading in the output cavity, (iii) The efficiency of the amplifier, neglecting beam loading.	L3
Q.3	Submit brief report on “Why do modern telecommunication devices use microwaves instead of radio waves”. (Write Technical Essay).	L2
Q.4	Write about pi mode operation of magnetron, its efficiency and applications.	L2
Q.5	Explain about the modes of resonance in magnetron.	L1
Q.6	Explain the Rising-Sun Magnetron and determine how it is used to avoid the mode jumping problem without using extra hardware.	L2

Mrs. J. S. Gawai

Subject Teacher