



**HASMUKH GOSWAMI COLLEGE OF ENGINEERING, VAHELAL**  
**MID SEMESTER EXAMINATION, SEPTEMBER-2016**

**Subject Code: 2171001**  
**Subject Name: Microwave Engineering**  
**Time: 10:00 TO 10:50**

**Date: 23/09/2016**  
**Sem: 7<sup>TH</sup>**  
**Total Marks: 20**

**Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

1. Advantages of microwave communications.
- QUE.1 (A) 2. Why TEM mode is no longer in a Rectangular Waveguide? 3  
3. Define term: TE mode, TM mode.
- (B) Discuss the performance specification of Reflex klystron 3
- QUE.2 (A) Derive the expression for the impedance and reflection coefficient at any point on the line. 3  
(B) Derive necessary equations for attenuation constant with reference to EM wave propagating along transmission line. 4
- OR**
- (B) Derive necessary equations for phase constant with reference to EM wave propagating along transmission line. 4
- QUE.3 (A) TWT 3  
(B) MAGNETRON 4
- OR**
- (A) REFLEX KLYSTRON 3  
(B) Draw the schematic of two cavity klystron. Explain the working, performance and applications of two cavity klystron Amplifier. 4

\*\*\*\*\* ALL THE BEST \*\*\*\*\*