(L:T:P = 4:0:0)   **80 + 20 = 100 Marks**

OET 3.1: Communication and Digital Electronics

UNIT-I
Radio wave Propagation: Ground or surface wave, Space or tropospheric wave and Sky wave**.** Ionosphere, Effect of Ionosphere on Radio waves, Skip distance, maximum Usable frequency and Ionospheric fading. Antenna: Introduction, loop and ferrite rod antenna, Yagi-Uda, Dish antenna and Microstrip antenna (Qualitative).   **12 hours**

UNIT-II
Modulation and detection: Modulation, AM, Power in AM, FM, Comparison of AM & FM. Generation and detection of AM wave. Super-heterodyne radio receiver (Block Explanation)
                                                        12 hours

UNIT-III
Optical fiber communication: Principles of light transmission, Fiber index profiles, Modes of propagation, losses in fibers. Types of Light Sources and Photo detectors (Qualitative). **12 hours**

UNIT-IV
Digital circuits: Introduction, Decimal, Binary and Hexa decimal number systems, Conversions, Binary addition and subtraction, OR, AND and NOT Circuits. Boolean algebra, De Morgan's Theorem, additional laws and theorems. NOR and NAND gates. Flip-Flop and RS Flip-Flop using NAND gate.
                                        12 hours

Reference books:

1) Foundations of Electronics: D. Chattopadhyaya, P.C. Rakshit, B Saha and N N Purkait , New Age International Edition.
2) Electronic Communications: D. Roddy and J. Coolen, PHI of India ltd.,
3) Electronic Communication Systems: G. Kennady, TMH Edition.
4) Electronic Principles: A.P. Malvino, TMH Edition.
5) A Textbook of Electronics (Second Edition): S.L Kakani and K.C.Bhandari.

Practical OEP 3.1

(L:T:P = 0:0:2) 40 + 10 Marks = 50 Marks