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DCEL501

Reg. No.

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V Semester B.Sc. Degree Examination, February/March - 2024

ELECTRONICS
COMMUNICATION - II
(NEP 2020 Scheme)



Paper : V

Time : 2½ Hours

Maximum Marks : 60

Instructions to Candidates:

Answer ALL the questions from Part-A, any FOUR questions from Part-B and any FOUR questions from Part-C.

Note: It is required to answer all the questions of Part-A in any one page and to be answered only one. In this Part, answering the same question multiple times will not be considered for evaluation.

PART-A

Answer All the Subdivisions.

(12×1=12)

1. i) A waveguide is a
 - a) Device to guide light waves
 - b) Structure that guides electromagnetic waves
 - c) Tool for measuring seismic waves
 - d) Device to amplify microwaves
- ii) The function of isolation port in a directional coupler to
 - a) Provide a matched termination
 - b) Minimize interference between the input and output ports
 - c) Amplifies the coupled signal
 - d) Adjusts the coupling factor
- iii) The semiconductor material commonly used in the fabrication of GUNN diode.
 - a) Silicon (Si)
 - b) Germanium (Ge)
 - c) Gallium arsenide (GaAs)
 - d) Silicon carbide (SiC)

[P.T.O.]



- iv) The simplest form of PSK, where the phase can be either 0 or 180 degrees:
- a) BPSK
 - b) QPSK
 - c) APSK and
 - d) None of the above
- v) In 16-QAM, each symbol represents
- a) 1 bit
 - b) 2 bits
 - c) 4 bits
 - d) 16 bits
- vi) The cross talk in a communication systems refers to
- a) Efficient data transmission
 - b) Unwanted interference between channels
 - c) Maximum data rate
 - d) Signal amplification
- vii) The full form of SIM card in mobile phone
- a) Set Interrupt Mask
 - b) Subscriber Identity Module
 - c) Super Indium Mobile
 - d) None
- viii) In cellular networks, the abbreviation of ARFCN is
- a) Absolute Radio Frequency Channel Number
 - b) Absolute RF Cable Number
 - c) American Radio Frequency Channel Number
 - d) AM Radio Channel Number
- ix) Bluetooth operates at
- a) 2.4 GHz
 - b) 5 GHz
 - c) 1 GHz
 - d) 3 GHz
- x) Identify the largest computer network?
- a) Metropolitan Area Network (MAN)
 - b) Wide Area Network (WAN)
 - c) Local Area Network (LAN)
 - d) Personal Area Network (PAN)

- xi) In a mobile communication system MTSO stands for
- a) Mobile Telephone Switching Office
 - b) Master Telephone Switching Office
 - c) Modern Telephone Satellite Organization
 - d) None of the above
- xii) In IEEE standard, the Wi-Fi protocol is
- a) IEEE 802.11
 - b) IEEE 802.3
 - c) IEEE 803.1X
 - d) IEEE 1394

PART-B

Answer any FOUR questions.

(4×7=28)

2. a) Mention the names of microwave hybrid circuits.
b) Explain the construction and working of IMPATT diode. (2+5)
3. Explain the construction and working of a two-cavity klystron amplifier.
4. a) Define Bit Rate and Baud Rate.
b) Define ASK,FSK,PSK and draw their input and output waveforms. (2+5)
5. With a block diagram, explain cellular phone handset.
6. a) Write a note on
 - i) Wi-Fi and
 - ii) Zigbee
b) Mention different types of computer networks and their applications. (4+3)
7. Draw and explain 7 layer OSI Model.

PART-C

Answer any FOUR questions.

(4×5=20)

8. Mention the name and frequency bands of microwaves.
9. Write a note on circulators and isolators in microwave communication system.

[P.T.O.]



10. A radio channel has a bandwidth of 10 KHz. Calculate the information carrying capacity of the channel when the S/N ratio is
 - a) 20dB and
 - b) 30dB
 11. Distinguish between FDMA and TDMA in a communication system.
 12. Draw the block diagram of cellular mobile communication network.
 13. Write a note on IEEE standards.
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