BHARTIYA SKILL DEVELOPMENT UNIVERSITY

Registration No.: .....

School of Computing Skills

Session: 2020-21 (Summer Semester)

B. Voc. Program, III Semester,

2nd In-Sem. Examination

Course Code: ITN1302 **Time: 1 Hour**

Course Name: Wireless Networks **Max. Marks: 20**

Section – A

05X01 = 05 Marks

Q1. What are the type of satellites?

A) LEO

B) MEO

C) GEO

D) All of the above

Q2. What is the time taken for transmission of 5kbits when the bandwidth is 500 bits/sec?

A) 100 secs

B) 10 secs

C) 20 secs

D) 1000 secs

Q3. VHF frequency range is?

A) 30 to 300 MHz

B) 300 to 3000 MHz

C) 3 to 30 MHz

D) None of the above

Q4. Which band uses sky wave for propagation?

A) HF

B) VHF

C) UHF

D) None of the above

Q5. What is the unlicensed band in India?

A) 2.4 GHz

B) 7 GHz

C) 8 GHz

D) None of the above

Section – B

03X02 = 06 Marks

Q.1 Explain what is attenuation of signal?

Q 2. What is isotropic (Omni Directional) antenna?

Q 3. Explain the difference between analog and digital signal.

Section – C

03X03 = 09 Marks

Q 1. Write down the basic equation for Link Budget and explain each term?

Q 2. How much margin should be kept in link budget and why ?

Q 3. What is AM, FM and PM?

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ANSWER SHEET

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Section – A

Q1. D

Q2. B

Q3. A

Q4. A

Q5. A

Section – B

Q1. As the signal travel it's strength reduces with increasing distance.

Q2. An antenna which radiates in all directions.

Q3. Analog signal is continuous in time and digital signal are discreet in time domain.

Section – C

Q1. Tx Power + Tx Antenna gain + Rx Sensitivity + Rx Antenna gain – FSL

Q2. 6 to 8 db.

Q3. Amplitude modulation, Frequency modulation and phase modulation.

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Session: 2020-21 (Summer Semester)

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2st In-Sem. Examination

Course Code: ITN 1305 **Time: 1 Hour**

Course Name: Optical Fiber Communication **Max. Marks: 20**

Section – A

05X01 = 05 Marks

Q1. **Which one of the following is the correct use of a power meter?**

A) To measure attenuation B) To measure power

B) To measure light D) To measure losses

Q2. Fiber optics was invented by_____.

A) Thomas Mensah B) Thomas Edison

C) John henry Holmes D) none of the above

Q3. Fiber optic cable operate at frequencies near.

A) 2 GHz B) 20 GHz

C) 200 MHz D) 800 THz

Q4. ..... are not used nowadays for optical fiber communication system.

A) Coaxial cable B) Multimode fibre

C) Single-mode fibre D) Multimode graded-index fibres

Q5. Which is the average insertion loss of fusion splice in fiber optics?

A) 0.9 dB B) 0.19 dB

C) 0.09 dB D) 0.009 dB

Section – B

03X02 = 06 Marks

Q1. What is media conversion?

Q2. Why not always use Single Mode fiber?

Q3. What are the types of fiber optic connectors?

Section – C

03X03 = 09 Marks

Q1. What is a mechanical splice?
Q2. What is a fusion splice?
Q3. What is the principle of OTDR? Explain.

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Course Name: Optical Fiber Communication **Max. Marks: 20**

Section – A

05X01 = 05 Marks

Q1. **Which one of the following is the correct use of a power meter?**

A) To measure attenuation B) To measure power

B) To measure light D) To measure losses

ANS: (B)

Q2. Fiber optics was invented by_____.

A) Thomas Mensah B) Thomas Edison

C) John henry Holmes D) none of the above

ANS: (A)

Q3. Fiber optic cable operate at frequencies near.

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ANS: (D)

Q4. ..... are not used nowadays for optical fiber communication system.

A) Coaxial cable B) Multimode fibre

C) Single-mode fibre D) Multimode graded-index fibres

ANS: (C)

Q5. Which is the average insertion loss of fusion splice in fiber optics?

A) 0.9 dB B) 0.19 dB

C) 0.09 dB D) 0.009 dB

ANS: (C)

Section – B

Q1. **What is media conversion?** 03X02 = 06 Marks

ANS: A media converter is a networking device that transparently converts Ethernet or other communication protocols from one cable type to another type, usually copper CATx/UTP to fibre.

Q2. Why not always use Single Mode fiber?

ANS: Laser light sources and photodetectors used for singlemode applications are significantly more expensive than those used for multimode. This difference translates into higher equipment costs for singlemode systems.

Q3. **What are the types of fiber optic connectors?**

ANS: Common types of fiber optic connectors include the ST, SC, FC/PC, FC/APC, and LC. The LC connector is very popular due to its high performance, small size, and ease of use. Multi-fiber connectors are also gaining popularity. The MTP/MPO are the preferred connector type for 40 Gbps and 100 Gbps data transmission standards.

Section – C

Q1. What is a mechanical splice? 03X03 = 09 Marks

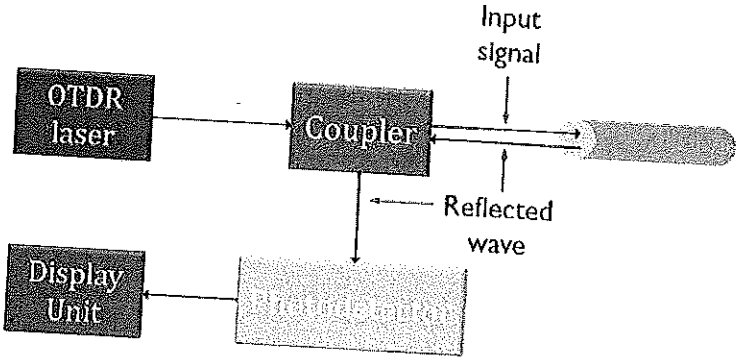
Ans: A mechanical splice is a device that holds two fiber ends in a precisely aligned position to enable light to pass from one fiber to another. Index matching gel is used to hold the cores together.

Q2. What is a fusion splice?

Ans: A fusion splice involves a splicing machine to align the fibers and fuse or weld them together using an electric arc. This produces a very low-loss connection that is superior to a mechanical splice. However, the equipment required for fusion splicing is costlier.

Q3. What is the principle of OTDR? Explain.

Ans: An OTDR sends short pulses of light into a fiber. Light scattering occurs in the fiber due to discontinuities such as connectors, splices, bends, and faults. The OTDR then detects and analyzes the backscattered signals.



Operation of OTDR