

25 I TRIBHUVAN UNIVERSITY
INSTITUTE OF ENGINEERING
Examination Control Division
2075 Bhadra

Exam.	Regular		
Level	BE	Full Marks	80
Programme	BEX	Pass Marks	32
Year / Part	IV / II	Time	3 hrs.

Subject: - Broadcast Engineering (Elective II) (EX76503)

- ✓ Candidates are required to give their answers in their own words as far as practicable.
- ✓ Attempt All questions.
- ✓ The figures in the margin indicate Full Marks.
- ✓ Assume suitable data if necessary.

1. Explain the characteristics of sound wave. Write down the advantages of frequency modulation over amplitude modulation. [4+4]
2. Define television system. State difference between monochrome and color television system. [2+7]
3. What is interlaced scanning in television system? Explain the types of color television standard briefly. [2+7]
4. Explain the block diagram of radio broadcast air chain clearly. [8]
5. What are the requirements of television studios? Explain the television production studio with block diagram. [4+6]
6. Explain about AM radio and AM transmission system briefly. [8]
7. Explain the types of analog recording devices. [8]
8. Define radio navigational system. Explain the uses and application of GPS system. [2+6]
9. Explain the working of cable TV distribution system with block diagram. [6]
10. Write short notes on: (Any two) [2×3]
(a). HDTV (b). Internet Radio (c). DAB (d). Remote broadcasting

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INSTITUTE OF ENGINEERING
Examination Control Division
2074 Bhadra

Exam.	Regular		
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Programme	BEX	Pass Marks	32
Year / Part	IV / II	Time	3 hrs.

Subject: - Broadcast Engineering (*Elective II*) (EX76503)

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1. Define reflection, refraction, diffraction and superposition properties of sound waves. Explain different types of television standards briefly. [4+6]
2. In Analogue TV transmission, Discuss and tabulate the salient points of different colour TV systems developed worldwide. [10]
3. Explain amplitude modulation process with necessary diagram. State and explain why modulation is done in communication process. [5+5]
4. Explain AM skywave propagation with necessary diagram. Explain disadvantages of Amplitude modulation and states its application in communication. [4+4+2]
5. Discuss briefly about the Cable TV distribution system indicating Cable TV frequency bands. Draw the Cable Headend block diagram also for different Cable TV source signal used. [10]
6. Explain the requirements of Radio studio with radio air chain block diagram clearly. List and explain different contribution links normally used for radio and TV broadcasting. [5+5]
7. List and explain briefly different Video and Audio Storage or Tape Equipment that are used in the TV and Radio broadcasting industry. [10]
8. Define Radio navigational system. Write down the uses of GPS system. Explain the types of GPS code. [2+4+4]

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INSTITUTE OF ENGINEERING
Examination Control Division
2073 Magh

Exam.	New Back (2066 & Later Batch)		
Level	BE	Full Marks	80
Programme	BEX, BCT	Pass Marks	32
Year / Part	IV / II	Time	3 hrs.

Subject: - Broadcast Engineering (*Elective II*) (EX 76503)

- ✓ Candidates are required to give their answers in their own words as far as practicable.
- ✓ Attempt **All** questions.
- ✓ The figures in the margin indicate **Full Marks**.
- ✓ Assume suitable data if necessary.

1. What is sound? What are its different characteristics? List and briefly explain them. Also state the speed, frequency and wavelength relation and formula. [4+4]
2. In Analogue TV transmission, discuss and tabulate the salient points of different colour TV systems deployed worldwide. [8]
3. Define Component and composite video signal? What is the function of the sync signal in TV system? Also explain Luminance, Chrominance, horizontal and vertical blanking intervals. [3+1+4]
4. Draw the block diagram of a typical TV Production studio. And explain each block. [8]
5. What do you understand by FM transmission? Briefly mention about FM emission masks and frequency spectrum used. [8]
6. Describe contribution links, distribution link and STL link for Radio programs. Explain its types with details. [8]
7. Discuss briefly about the Cable TV distribution systems indicating Cable TV frequency bands. Likewise, draw the Cable Headend block diagram for different Cable TV source signals used. [4+4]
8. Draw the block diagram of generation of a DAB signal at transmitter and its Demodulation at the receiver side. And briefly explain it. [8]
9. Discuss briefly about the transmitter site facilities used in TV broadcasting with a neat block diagram. [8]
10. Write short notes on following: [4×2]
 - a) Radio and TV News Gathering
 - b) Need for acoustic treatment
 - c) DTH
 - d) Difference between chrominance and luminance signals

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Examination Control Division
 2073 Bhadra

Exam.		Regular	
Level	BE	Full Marks	80
Programme	BEX, BCT	Pass Marks	32
Year / Part	IV / II	Time	3 hrs.

Subject: - Broadcast Engineering (Elective II) (EX76503)

- ✓ Candidates are required to give their answers in their own words as far as practicable.
- ✓ Attempt All questions.
- ✓ The figures in the margin indicate Full Marks.
- ✓ Assume suitable data if necessary.

1. What is Television system? State basic difference between monochrome and color video signals. Also explain Scanning and it's formulation in TV camera? [1+3+4]
2. Name the different types of propagation used in AM radio, FM radio and TV signal transmission. Briefly mention about AM/FM emission masks with frequency spectrum used. [8]
3. What are different Cable TV source signals used and write how the signal processing is done for each source? Also Sketch the Head-end block diagram and explain each block. [8]
4. What is sound? What are its different characteristics and behavior exhibited in a medium? List and briefly explain them. State the speed frequency and wavelength relation and their formula. [4+4]
5. Describe each equipment in the block of a Television Broadcast Air Chain showing studio and transmitter facilities. Draw a neat block diagram for the same. [5+3]
6. List and explain briefly different Video and Audio Storage or Tape Equipment that are used in the TV and Radio broadcasting industry. [8]
7. What are Contribution, Distribution and Transmission links used in Radio and TV broadcasting? Write the main features of equipment used in Remote or Field News Gathering. [4+4]
8. Draw and briefly explain the block diagram of generation of a DVB signal at transmitter and its reproduction at the receiver side. [8]
9. Write short notes on: [4×4]
 - a) Digital Video
 - b) Sky wave and Space wave propagation
 - c) Stereo Coding of FM audio signal
 - d) Block Diagram of Digital Camera
