UNIT I FUNDAMENTALS OF COLOUR TELEVISION

1. **The main purpose of interlacing in television scanning is to**

   A. reduce flicker ✓
   B. brighten the TV picture
   C. sharpen picture outline
   D. increase channel bandwidth

2. **If a TV picture has 525 lines and scanning rate is 30 pictures/second, time for scanning one line is second.**

   A. 30/525
   B. 525/30
   C. 1/30 x 525 ✓
   D. 30 x 525

3. **If there are 625 lines per TV picture, then lines per field are**

   A.1250
   B.312.5 ✓
   C.625
   D.2500

4. **In a TV receiver set, sound and video signals are separated at the**

   A. video detector ✓
   B. video amp
   C. sync separator
   D. IF stage

5. **40. The three primary colours in the chrominance signal of a colour TV are**

   A. red, green, orange
   B. red, green, blue ✓
   C. blue, green, magenta
   D. yellow, green, cyan

6. **When referring to colour TV receivers, ATC stands for**

   A. automatic tone control
   B. automatic tint control ✓
   C. automatic television control
   D. automatic tuner control

7. **In television, 4: 3 represents the**
   A. interlace ratio
   B. maximum horizontal deflection
   C. aspect ratio ✓
   D. ratio of the two diagonals

8. **A television system having N = 525 and P = 25 frames/s has a horizontal sync frequency of**
   A.50
   B.15,625 ✓
   C.625
   D.525

9. **To ensure that electron beam in the receiver CRT starts each scanning line at exactly the same time that a corresponding scanning line starts in TV camera, it is essential to utilize a pulse.**
   A. sync ✓
   B. equalizing
   C. code
   D. blanking

10. **The signals sent by the TV transmitter to ensure correct scanning in the receiver are called**
    A. sync ✓
    B. chroma
    C. luminance
    D. video

11. **The line frequency of TV system in India is ? Hz.**
    A.625
    B.15,625 ✓
    C.15,750
    D.15,950

12. **A complete television signal consists of**
    A. sync pulses and a sound signal
    B. camera signal
    C. a video signal and sync pulses
    D. a composite video signal and sound signal ✓

13. **The number of frames per second in our TV system is**
    A.50
    B.24

C.25 ✓
D.49

14. **Interlacing is used in TV frames to**
A. produce illusion of motion
B. ensure scanning of all lines
C. avoid flicker ✓
D. avoid Humming

15. **The separation of sound and picture carriers in our TV system is ? MHz.**
A.5.5 ✓
B.4.5
C.6
D.5

16. **Interlacing is used in television to**
A. produce the illusion of motion
B. ensure that all the lines on the screen are scanned, not merely the alternate ones
C. simplify the vertical sync pulse train
D. avoid flicker ✓

17. **TV broadcasting system in India is as per CCIR**
A. system B ✓
B. system I
C. system M
D. system X

18. **Equalising pulsing in T.V. are sent during**
A. horizontal blanking
B. vertical blanking ✓
C. horizontal retrace
D. flickering

19. **If normal line sync pulse width is 4.7 its, width of equalizing pulse is ?its**
A.4.6
B.2.3
C.9.2
D.1.5

20. **Point out the false equation :**
A. two fields = one picture
B. two fields = one frame

C. two frames ---- one field ✓
D. one picture = two fields

21. **In connection with TV systems, PAL refers to the**
A. well-known European company manufacturing TV sets
B. colour TV system used in Europe ✓
C.(o) original 405-line raster standard adopted by UK
D. system followed by BBC, London

22. **Mark to wrong statement :In Indian TV broadcasting system**
A. frame rate is 25 per second
B. field rate is 50 per second
C. horizontal line-scanning frequency is 15,627 per second
D. vertical line-scanning frequency is 25 per second ✓

23. **The maximum definition in a TV picture depends on**
A. the number of scanning lines
B. the bandwidth of transmission channel
C. aspect ratio
D. both (a) and (b) ✓

24. **The best viewing distance for a TV picture is _____ times the picture height**
A. 2 to 4.
B. 4 to 8 ✓
C. 8 to 10
D. 10 to12

25. **The components signal are**
A. camera signal
B. blanking pulses
C. sync pulses
D. all of the above ✓

26. **Sync pulses transmitted during vertical blanking period include**
A. equalizing pulses
B. serrated vertical sync pulses
C. horizontal sync pulses
D. all of the above ✓

27. **The function of the serrations in the composition video waveform is to**
A. equalize the charge in the integrator before the start of vertical retrace
B. help veritcal synchronization

C. help horizontal synchronization ✓
D. simplify the generation of the vertical sync pulse

28. **The number of active picture elements in a television image depends on**
A. flyback time
B. CRT screen size
C. receiver bandwidth ✓
D. FB ratio of receiver antenna

29. **Basically, a picture detector is**
A. an IF-video coupler
B. power rectifier
C. demodulator ✓
D. ratio detector

30. **The dc component of a video signal corresponds to in the televised scene.**
A. maximum illumination
B. picture contrast
C. background illumination ✓
D. picture details

31. **The saturation of a colour is decreased when it is blended with**
A. black light
B. itself
C. white light ✓
D. red, yellow or blue light

32. **Y-signals are also called -- signals.**
A. chroma
B. luminance ✓
C. colour-difference
D. multiplexed

33. **Frequency interleaving occurs if subcarrier frequency is an**
A. odd multiple of half the line frequency ✓
B. odd multiple of line frequency
C. even multiple of line frequency
D. even multiple of half the line frequency

34. **The colour killer section is operated by the**
A. AFC section
B. subcarrier oscillator ✓

C. picture detector
D. chroma demodulators

35. **The red, green and blue chroma amplifiers drive the**
A. chroma bandpass amplifiers
B. video amplifier
C. chroma demodulators
D. colour picture tube ✓

36. **The colour subcarrier is suppressed at the transmitter in order to**
A. avoid cochannel interference
B. save energy
C. minimize interference between chroma signal and Y?signal ✓
D. minimize adjacent channel interference

37. **Magneta is the complement of**
A. red
B. yellow
C. blue
D. green ✓

38. **The reference white colour for colour television is ,a mixture by percentage of**
A. red = 30, green = 59, blue = 11 ✓
B. R = 33.3, B = 33.3, G = 33.3
C. R = 45, B = 35, G = 20
D. R = 50, B = 25, G = 25

39. **The line frequency of TV system in India is**
A. 50 Hz
B. 625 Hz
C. 15,625 Hz ✓
D. 15,750 Hz

40. **Equalizing pulses in TV are sent during**
A. horizontal blanking
B. vertical blanking ✓
C. the serrations
D. the horizontal retrace

41. **In TV system**
A. picture is A.M., sound is F.M. ✓
B. picture is F.M. sound is are A.M.
C. picture and sound both are A.M.
D. picture and sound both are F.M.

42. **In TV system the frame frequency is**

A.100
B.60
C.50
D.25 ✓

43. **In India the width of one channel is**

A. 1 MHz
B. 2 MHz
C. 5 MHz
D. 7 MHz ✓

44. **In India sound IF is**

A. 31.45 MHz
B. 33.4 MHz ✓
C. 38.9 MHz
D. 41.5 MHz

45. **In India picture IF is**

A. 33.4 MHz
B. 38.9 MHz ✓
C. 40 MHz
D. 49.8 Mhz

46. **A color burst consists of at least**

A. 8 cycles of 4..5 Mhz
B. 60 cycles of 45.75 MHz
C. 8-11 cycles of 4.43 MHz ✓
D. 60 cycles of 15,750 Hz

47. **A color TV receiver employes a ------- picture tube**

A. one color
B. two color
C. three color ✓
D. three color & black and white

48. **Compatible operation means that**

A. television sound can be reproduced on an FM receiver
B. television sound can be reproduced on an AM receiver
C. TV color broadcasts can be accepted by a black and white receiver and black and white TV broad casts can be accepted by a color receiver ✓
D. TV color broadcasts can bereproduced in color by a black and white receiver

49. **A color TV camera contains ____ camera tube (s)**
A. one
B. two
C. three ✓
D. four

50. **Time taken by the electron beam to scan one complete line in CCIR standards is**
A. 64 us ✓
B. 63.5 pis
C. 0.02 s
D. none of these

51. **Retrace of electron beam is**
A.(c) very slow
B. as fast as the trace
C. very fast ✓
D. none of these

52. **The purpose of blanking pulses is to**
A. ensure a unifortn scanning rate
B. avoid flickering effect
C. make the retraces invisible ✓
D. none of these

53. **Colour represented by 520 nm is approximately**
A. green
B. red ✓
C. blue
D. violet

54. **Three main factors used to distinguish one colour from another are**
A. wavelength, luminance and chrominance
B. hue, saturation and luminance ✓
C. wavelength, hue andsaturation
D. brightness, contrast and wavelength

55. **The polarities of I and Q signals for red primary are**
A. (+ Ve) for I and Q both ✓
B. (+ Ve) for 1 Q (-Ve) for Q
C. (- Ve) for I and (+Ve) for Q
D. none of these

56. **For positive I and negative Q signals, the resultant lies in the**

A. 1st quadrant

B. 2nd quadrant ✓

C. 4th quadrant

D. none of these

57. **Assuming R=G=B=1 V, luminance of fully saturated red is**

A.0.3 ✓

B.0.11

C.0.59

D.1

58. **In colour television, all-natural colours are represented in terms of red, green and blue video signals. The colour that produces the highest red video signal amplitude is the**

A. white

B. yellow

C. violet

D. red ✓

59. **In which system Phase errors are automatically get cancelled?**

A. **PAL** ✓

B. NTSC

C. SECAM

D. NONE OF THE ABOVE

60. **Which type of modulation is used in SECAM system for video signal**

A .phase

B. frequency ✓

C. amplitude

d. None of the above

61. **What is the bandwidth(MHZ) of NTSC System?**

A .5

B. 6 ✓

C. 7

D. 8

62. **What is the bandwidth(MHZ) of PAL System?**

A .5

B. 6

C. 7 ✓

D. 8

63. **What is the bandwidth(MHZ) of SECAM System?**

A .5

B. 6
C. 7
D. 8 ✓

64. Which colour difference signal is not transmitted

A . B-Y
B. R-Y
C. G-Y ✓
D. None of the above

65. Which type of amplifiers are used in high level transmitter

a. Class C amplifier ✓
b. Class A amplifier
c. No amplifiers used
d. None of the above

66. Which Television system is used in India

a. NTSC
b. PAL ✓
c. SECAM
d. None of the above

UNIT II - DIGITAL TV AND DISPLAY DEVICES

1 Following is not the digital television quality levels

A. FHDTV ✓
B. HDTV
C. SDTV
D. EDTV

2 Digital TV is free from following error.

A. ghost
B. snow
C. both ✓
D. None of above

3 Following is not the digital TV Transmission

A. Composite endcoded
B. NTSC ✓
C. MAC
D. Advanced DTV Technology

4 **In MAC which broadcasting is not possible**

A. Terrestrial ✓
B. Satellite
C. Cable
D. None of the above

5 **What is MAC?**

A. Multiple analog component
B. Multiplexed analog component ✓
C. Multi access components
D. None of the above

6 **What is the meaning of DVB?**

A. Direct video broadcast
B. Digital Video Broadcast ✓
C. Double video broadcast
D. Digital virtual broadcast

7 **In digital television compression technique used for video is**

A. MPEG-1
B. MPEG-3
C. MPEG-2 ✓
D. MPEG-4

8 **In digital television system which signal is available at the adder output**

A. CVS
B. CCVS ✓
C. Y
D. U,V

9 **In digital TV ADC conversion is done by.**

A. PCM ✓
B. DPCM
C. DM
D. ADM

10 **In digital TV, continuous wave modulation technique used is**

A. QPSK ✓
B. BPSK
C. M-ary PSK
D. FSK

11 **In MAC the chrominance signal is time compressed with the ratio**

A. 3:2

B. 3:1 ✓

C. 2:3

D. 1:2

12 **In MAC the luminance signal is time compressed with the ratio**

A. 3:1

B. 3:4

C. 3:5

D. 3:2 ✓

13 **In MAC the chrominance signal is time compressed to_____ microsecond**

A.15

B.16

C.17 ✓

D.18

14 **In MAC the luminance signal is time compressed to_____ microsecond**

A. 33

B. 34

C. 35 ✓

D. 36

15 **In MAC the sync, sound and data signal are**

A. Digital ✓

B. analog

C. both

D .None of the above

16 **Which of the following statement is not true for MAC Technology**

A. MAC signals are AM-VSB modulated for cable broadcast.

B. For MAC signal terrestrial broadcast is not possible

C. MAC signals are FM modulated for satellite uplink

D. For MAC signal terrestrial broadcast is possible ✓

17 **SDTV resolution is**

A. 640x480 ✓
B. 720x480
C. 1280x720
D. 1920x1080

18 **Following CCIR-601 digitization formats for broadcast application**
A. 4:2:2
B. 4:2:0 ✓
C. 4:1:1
D. None of the above

19 **What is the bit rate required for Advanced DTV transmitter before compression**
A. 6 mbps
B. 216 mbps ✓
C. 144mbps
D. 300mbps

20 **The MPEG standard specifically defines three types of pictures :**
A. I, F, B
B. I, D, B
C. I, P, B ✓
D. None of the above

21 **OLED display is better than LED because _____**
a) They are cheaper
b) They have high brightness
c) Do not require any illuminating source ✓
d) Easy to

22. **The LCD digital display that is based on**
A. Radiation of light
B. Reflection of light ✓
C. Emission of light
D. Transmission of light

23 Which of the following consumes less power?
A. Incandescent lamp
B. LCD ✓
C. Fluorescent tube
D. LED

24 The typical value of thickness of liquid layer of LCD's is ..... mm

A. 0.22
B. 2.2
C. 0.025 ✓
D. 0.035

25 Which of the following liquid crystal layers are used in LCD's

A.Heavy water
B.Nematic ✓
C.Hydrosulphuric acid
D.Hydrochloric acid

26. Gas used in plasma display cells

A. orgon and neon
B. Neon and xenon ✓
C. xenon and orgon
D.None of the above

27. Following display is called flat panel display

A. Plasma
B. CRT
C. TFT-LCD ✓
D.None of the above

28. OLED stands for

A. Optical light emitting diode
B. Organic light emitting diode ✓
C. Optical light emissive detector
C. None of the above

29. which are main technologies that can be used for image sensor in camera

A. CCD
B. CMOS
C. Both ✓
D. None of the above
E.

30. Drawbacks of the CRT

A. Heavy and Cumbersome
B. Poor Image Quality
C. Energy Inefficient.
D. All of above ✓

UNIT III- HDTV

1. There are three primary means of distributing television programming. Which does not belong in the list below?

A. Broadcasting
B. cable
C. Direct to home
D. Internet ✓

2. HD televisions are

A. Low definition
B. High definition ✓
C. Enhanced
D. Low quality

3. What is the bit rate of high definition television

A. 1Gbps ✓
B. 2 Gbps
C. 3Gbps
D. None of the above

4. Aspect ratio of the high definition colour television is

A. 4:3
B. 5:4
C. 16:9 ✓
D. 3:2

5. HDTV does not allow following transmission

A. MAC HDTV
B. Advanced HDTV
C. Composite encoded HDTV ✓
D. None of the above

6. If the pixel depth is 12 bits determine the range of different colours that can be produced

A. 4096 ✓
B. 16 million
C. 2048
D. 1024

7. For the terrestrial broadcast worldwide standards defined are

A. ATSC-T
B. DVB-T
C. ISDB-T
D. All of above ✓

8. In HDTV following line systems are used

A. 1250 lines
B. 1152 lines
C. Both A and B ✓
D. None of the above

9.The luminance bandwidth in HDTV is

A. 15 MHz
B. 30 MHz ✓
C. 45MHZ
D. 60MHZ

10. The chrominance bandwidth in HDTV is

A. 15 MHz ✓
B. 30 MHz
C. 45MHZ
D. 60MHZ

11. Which band is used for DTH in indial

A. C band
B. X band
C. Ku band ✓
D. Ka band

12. Following is not the DTH provider in India

A. Amazon ✓
B. DD Direct
C. Tata sky
D. Dish TV

13. At the receiving end, the job of the Set-top Box is

A. Descramble and decode ✓
B. Scramble and decode
C. Descramble and encode
D. Scramble and encode

14. _____ audio/video refers to on-demand requests for compressed audio/video files.

A. Streaming live
B. Streaming stored ✓
C. Interactive
D. None of the above

15. _____ is used to compress video

A. MPEG ✓
B. JPEG
C. Either A or B
D. None of the above

16. CATV is

A. Cable TV ✓
B. Community TV
C. Both
D. None of the above

17. The first component of the CATV distribution is

A. Head end ✓
B. Trunk line

C. Feeder line
D. Drop line

18 Components of the CCTV are
A. The camera
B. The monitor
C. Both ✓
D. None of the above

19. IP-CCTV does not require following thing
A. IP CCTV camera
B. IP CCTV network
C. IP CCTV Software
D. Cables ✓

20. 3-D TV can be realized by
A. By wearing 3D glass
B. By observing the scene on 3D display
C. Both ✓
D. None of the above

21. Typical coverage of cricket ground is done with the help of at least _____cameras
A. 25
B. 30 ✓
C. 35
D. 40

22. How many minimum cameras will be required to cover one live football match
A. 1
B. 2
C. 5
D. 10 ✓

23. Typical coverage plan for marathon includes following camera
A. Gyro stabilized camera ✓
B. 3 D camera
C. Arieal camera
D. None of the above

24. Scanning used in HDTV
A. Interlace scanning
B. Progressive scanning ✓
C. Both
D. None of the above

25. 5.1 sound system in HDTV includes_____speakers
A. 2
B. 5
C. 6 ✓
D. 7

UNIT IV- IPTV AND MOBILE TV TECHNOLOGY

1. _____Audio/video refers to the broadcasting of radio and TV Program through the internet.
   A. Interactive
   B. Streaming live ✓
   C. Streaming stored
   D. None of the above
2. _____audio/video refers to the use of the internet for interactive applications
   A. Interactive ✓
   B. Streaming live
   C. Streaming stored
   D. None of the above
3. According to the Nyquist theorem, we need to sample an analog signal _____times the highest frequency.
   A. Three
   B. Two ✓
   C. Four
   D. None of the above
4. In_____encoding, the difference between the samples are encoded instead of encoding all the sampled values
   A. Predictive ✓
   B. Perceptual
   C. Both
   D. None of the above
5. Jitter is introduced in the real time data by the
   A. Error caused during transmission
   B. Delay between packets ✓
   C. Both A and B
   D. None of the above
6. To prevent _____, we can timestamp the packets and separate the arrival time from playback time.
   A. Error
   B. Jitter ✓
   C. Either A and B
   D. None of the above

7. A_____ buffer is required for real time traffic
   A. Playback ✓
   B. Reordering
   C. Sorting
   D. None of the above
8. A_____on each packet is required for real time traffic
   A. Timestamp
   B. Sequence number
   C. Both A and B
   D. None of the above ✓

9. Real time traffic needs a support of
   A. Broadcasting
   B. Multicasting ✓
   C. Both
   D. None of the above
10. _____means the changing the encoding of a payload to a lower quality to match the bandwidth of receiving network

   A. Translation ✓
   B. mixing
   C. Both
   D. None of the above
11. _____means the combining several streams of traffic into one stream

   A. Translation
   B. mixing ✓
   C. Both
   D. None of the above

12. _____is not suitable for interactive multimedia traffic because it retransmit packets in case of errors.

   A. UDP
   B. TCP ✓
   C. Both
   D. None of the above
13. Commonly used mode for 3G networks is
   a. TDMA
   b. FDMA
   c. TDD
   d. FDD ✓

14. Mobile wireless broadband TV uses following standars
   A. Wi-fi 802.11
   B. Wi-fi 802.16
   C. Both

D. None of the above

15. Device manufacture's Challenges for mobile TV are
    A. Power consumption
    B. Memory
    C. Both ✓
    D. None of the above
    E.

16. DVD means
    A. Digital video disc
    B. Digital versatile disc ✓
    C. Both
    D. None of the above

17. Wi-fi TV operates in accordance with the _____set of IEEE Standards
    A. 802.10
    B. 802.11 ✓
    C. 802.12
    D. 802.13

18. **A wireless network uses ___ waves to transmit signals.**

    A. mechanical
    B. radio ✓
    C. sound
    D. none of the above

19. **3. What device sends and receives radio signals in a wireless network?**

A. modem
B. digital translator
C. router ✓

20. **At what frequencies do Wi-Fi radios make transmissions? |**

A. 3 GHz or 8 GHz
B. 2.4 GHz or 5 GHz ✓
C. 2 GHz or 7.3 GHz

21. _____ **Of the following networking standards, which is not used in Wi-Fi data transmissions? |**

A. 802.11g
B. 802.11q ✓
C. 802.11b

22. **6. Which networking standard is the slowest and least expensive? |**

A. 802.11a
B. 802.11b ✓
C. 802.11n

23. **wifi stands for_____**

A. Wireless Fidelity ✓
B. Wireless functioning
C. Wireless function
D. None of the above

24. **A Wi-fi enabled device can be_____**

A. PC
B. Game Console
C. Mobile phone
D. All of the above ✓

25. **How many channels has 2.4 GHz frequency?**

A. 8
B. 10
C. 13 ✓
D. 16

26. Wifi uses which kind of multiplexing?

A. OFDM ✓
B. TDM
C. WDM
D. FDM

27. Wifi Alliance for certified products based on the

A. IEEE 802.3
B. IEEE 802.5
C. IEEE 802.11 ✓

28. Does wifi support roaming?

A. Yes ✓
B. No

29. What is the "acceptable" limit for the attenuation of a wifi signal (threshold before breaking signal)

A. 75 dB
B. 20 db
C. -75 DB ✓
D. -75 GHz

30. **7. Which of the following is a sign that you might be on an unsafe network?**

A. The connection requires you to sign up for an account
B. There is no password needed to access the internet ✓
C. You get free access with every fifth frappe
D. None of the above