**BE (E&TC) – AUDIO VIDEO ENGINEERING**

**Multiple Choice Questions (MCQ)**

**Unit I: Fundamentals of Colour Television**

1. Which of the following camera tube uses lead oxide (PbO) for the photoconductive target plate?

A. Vidicon

B. Plumicon

C. Saticon

D. Image Orthicon

Answer: Option B-Plumicon

2. Camera signal output without sync is called

A. Black burst

B. generator lock video

C. composite video

D. noncomposite video

Answer: Option D- noncomposite video

3. A low-contrast picture in which white seems flat and lacking in detail suggest

A. low beam current

B. high gain in the amplifier

C. excessive gamma

D. insufficient scanning width

Answer: Option A- low beam current

4. Which of the following camera tubes has minimum lag?

A. Vidicon

B. Plumbicon

C. Saticon

D. Iconoscope

Answer: Option B- Plumbicon

5. The part of the visible spectrum where camera pickup tubes have the greatest output is

A. red

B. blue

C. yellow-green

D. infrared

Answer: Option C- yellow-green

6. Precise scanning size and linearity are most important in

A. a black-and-white camera

B. a plumbicon

C. a single-tube color pickup

D. a saticon

Answer: Option C- a single-tube color pickup

7. Beam alignment magnets for the camera tube are adjusted while rocking which control?

A. Optical focus

B. Electrical focus

C. Beam current

D. Shading

Answer: Option B- Electrical focus

8.  A pulse-type waveform (such as television line pulse) is a modification of

[A. square wave](about:blank)  
[B. rectangular wave](about:blank)  
[C. sawtooth wave](about:blank)  
[D. sine wave](about:blank)

Answer: Option B- rectangular wave

9. The main purpose of interlacing in television scanning is to  
[A. reduce flicker](about:blank)  
[B. brighten the TV picture](about:blank)  
[C. sharpenpicture outline](about:blank)  
[D. increase channel bandwidth](about:blank)

Answer: OptionA-Reduce Flicker

10.  If a TV picture has 525 lines and scanning rate is 30 pictures/second, time for scanning one line is second.  
[A. 30/525](about:blank)  
[B. 525/30](about:blank)  
[C. 1/30 x 525](about:blank)  
[D. 30 x 525](about:blank)

Answer: OptionC-1/30 x 525

Bottom of Form

11. If there are 625 lines per TV picture, then lines per field are  
[A.1250](about:blank)  
[B.312.5](about:blank)  
[C.625](about:blank)  
[D.2500](about:blank)

Answer: OptionB-312.5

Bottom of Form

12.The function of a sync separator ma TV set is to separate the signals.  
[A. video and sound](about:blank)  
[B. video and line sync](about:blank)  
[C. line sync and field sync](about:blank)  
[D. sound and field sync](about:blank)

Answer: OptionC- line sync and field sync

13. The main function of electron gun in a cathode-ray tube is to ---- electrons.  
[A. deflect](about:blank)  
[B. produce](about:blank)  
[C. size](about:blank)  
[D. aspect](about:blank)

Answer: Option[B. produce](about:blank)

14. In a CRT, focussing of electron beam is achieved by varying  
[A. grid bias](about:blank)  
[B. heater voltage](about:blank)  
[C. voltage of first accelerating anode](about:blank)  
[D. secondary accelerating voltage](about:blank)

Answer: OptionD- secondary accelerating voltage

Bottom of Form

15. Intensity of the electron beam in a CRT can be controlled by varying voltage  
[A. grid bias](about:blank)  
[B. cathode](about:blank)  
[C. heater](about:blank)  
[D. accelerating](about:blank)

Answer: Option[A-grid bias](about:blank)

Bottom of Form

16. The observe a portion of a waveform, we must use  
[A. free-running oscilloscope](about:blank)  
[B. triggered-sweep oscilloscope](about:blank)  
[C. vectorscope](about:blank)  
[D. cathode-ray tube](about:blank)

Answer: Option B-triggered-sweep oscilloscope

Top of Form

17. Lissajous patterns obtained by an oscilloscope can be used to get  
[A. phase information](about:blank)  
[B. frequency of input signal](about:blank)  
[C. both frequency and phase information](about:blank)  
[D. voltage amplitude](about:blank)

Answer => [C. both frequency and phase information](about:blank)

Top of Form

18. The term wide-band as applied to an oscilloscope denotes the bandwidth of its  
[A. vertical amplifier](about:blank)  
[B. horizontal amplifier](about:blank)  
[C. both vertical and horizontal amplifiers](about:blank)  
[D. none of the above](about:blank)

Answer => [A. vertical amplifier](about:blank)

Top of Form

Bottom of Form

19. When a complete oscilloscope is used as a vectorscope, with the input signals coupled directly to CRT deflection plates, the deflection plates must be effectively isolated from  
[A. vertical amplifier only](about:blank)  
[B. horizontal amplifier only](about:blank)  
[C. both vertical and horizontal amplifiers](about:blank)  
[D. accelerating anodes](about:blank)

Answer => [C-both vertical and horizontal amplifiers](about:blank)

Top of Form

Bottom of Form

20.  An oscilloscope is generally used to measure the value of .......... voltage  
[A. dc](about:blank)  
[B. rms ac](about:blank)  
[C. peak-to-peak ac](about:blank)  
[D. average value of ac](about:blank)

Answer => C- peak-to-peak ac

Top of Form

Bottom of Form

21. The purpose of a synch oscilloscope is to  
[A. set the intensity level](about:blank)  
[B. control brightness](about:blank)  
[C. set the focus](about:blank)  
[D. lock the signal](about:blank)

Answer => D- lock the signal

22. The length of the sweep screen is controlled by  
[A. sync control](about:blank)  
[B. sweep selector](about:blank)  
[C. horizontal gain](about:blank)  
[D. vertical gain](about:blank)

Answer => C- horizontal gain

Top of Form

Bottom of Form

23. Both dot and line patterns on a TV screen are produced by

[A. sine waves](about:blank)  
[B. rectangular waves](about:blank)  
[C. sawtooth waves](about:blank)  
[D. pulse waveforms](about:blank)

Answer => D- pulse waveforms

Top of Form

Bottom of Form

24. White-dot and cross-hatch generators are chiefly used for  
[A. convergence of colour picture tubes](about:blank)  
[B. linearity of colour picture tubes](about:blank)  
[C. intensity tests of colour picture tubes](about:blank)  
[D. generation of colour bar patterns](about:blank)

Answer => A- convergence of colour picture tubes

Bottom of Form

25. White-dot and cross-hatch patterns are commonly called .......... patterns.  
[A. linearity](about:blank)  
[B. colour bar](about:blank)  
[C. convergence](about:blank)  
[D. background](about:blank)

Answer => C- convergence

26.  Colour bar generators are used mainly to check the operation of the ........... in colour TV receivers.  
[A. number of chroma bars](about:blank)  
[B. chroma circuitry](about:blank)  
[C. video](about:blank)  
[D. RF](about:blank)

Answer => B- chroma circuitry

27.  A vectorgram is useful because it shows at a glance whether the operation of the .......... is normal.  
[A. RF amplifier](about:blank)  
[B. horizontal amplifier](about:blank)  
[C. chroma demodulator](about:blank)  
[D. video amplifier](about:blank)

Answer => C- chroma demodulator

Top of Form

Bottom of Form

28. The control that adjusts the frequency of the horizontal sweep oscillator in an oscilloscope is

[A. sync selector](about:blank)  
[B. Z-axis](about:blank)  
[C. horizontal gain](about:blank)  
[D. sweep control](about:blank)

Answer => D- sweep control

Bottom of Form

29. In a TV receiver set, sound and video signals are separated at the  
[A. video detector](about:blank)  
[B. video amp](about:blank)  
[C. sync separator](about:blank)  
[D. IF stage](about:blank)

Answer => A- video detector

Top of Form

Bottom of Form

30. The vertical and horizontal pulses in a TV set are separated at the  
[A. AFC](about:blank)  
[B. sync amp](about:blank)  
[C. sync separator](about:blank)  
[D. AGC](about:blank)

Answer => C- sync separator

31. A single horizontal line across the middle of a TV screen indicates trouble in  
[A. horizontal section](about:blank)  
[B. vertical section](about:blank)  
[C. tuner](about:blank)  
[D. video section](about:blank)

Answer => B- vertical section

32. The three primary colours in the chrominance signal of a colour TV are

[A. red, green, orange](about:blank)  
[B. red, green, blue](about:blank)  
[C. blue, green, magenta](about:blank)  
[D. yellow, green, cyan](about:blank)

Answer => [B. red, green, blue](about:blank)

33. Absence of one colour in a colour picture indicates  
[A. shorting of one of the guns in picture](about:blank)  
[B. defect in colour video amp](about:blank)  
[C. either (a) or (b)](about:blank)  
[D. none of the above](about:blank)

Answer => C- either (a) or (b)

34. When referring to colour TV receivers, ATC stands for  
[A. automatic tone control](about:blank)  
[B. automatic tint control](about:blank)  
[C. automatic television control](about:blank)  
[D. automatic tuner control](about:blank)

Answer => B- automatic tint control

Bottom of Form

35. Tropospheric scatter is used with frequencies in the following range :  
[A. H.F.](about:blank)  
[B. V.H.F.](about:blank)  
[C. U.H.F.](about:blank)  
[D. U.F.](about:blank)

Answer => C- [U.H.F.](about:blank)

Bottom of Form

36. The TV broadcasting in India is done in  
[A. VHF band I](about:blank)  
[B. VHF band I and II](about:blank)  
[C. VHF band I. H and III](about:blank)  
[D. VHF band I and II](about:blank)

Answer => D- VHF band I and II

Top of Form

Bottom of Form

37. The signals sent by the TV transmitter to ensure correct scanning in the receiver are called  
[A. sync](about:blank)  
[B. chroma](about:blank)  
[C. luminance](about:blank)  
[D. video](about:blank)

Answer => A- sync

38. The line frequency of TV system in India is ? Hz.  
[A.625](about:blank)  
[B.15,625](about:blank)  
[C.15,750](about:blank)  
[D.15,950](about:blank)

Answer => B-15,625

Top of Form

Bottom of Form

39. A complete television signal consists of  
[A. sync pulses and a sound signal](about:blank)  
[B. camera signal](about:blank)  
[C. a video signal and sync pulses](about:blank)  
[D. a composite video signal and sound signal](about:blank)

Answer => D- a composite video signal and sound signal

Top of Form

Bottom of Form

40. The number of frames per second in our TV system is  
[A.50](about:blank)  
[B.24](about:blank)  
[C.25](about:blank)  
[D.49](about:blank)

Answer => C-25

Top of Form

Bottom of Form

41. Interlacing is used in TV frames to  
[A. produce illusion of motion](about:blank)  
[B. ensure scanning of all lines](about:blank)  
[C. avoid flicker](about:blank)  
[D. avoid Humming](about:blank)

Answer => C- avoid flicker

Top of Form

Bottom of Form

42. The separation of sound and picture carriers in our TV system is ? MHz.  
[A.5.5](about:blank)  
[B.4.5](about:blank)  
[C.6](about:blank)  
[D.5](about:blank)

Answer => A-5.5

Top of Form

Bottom of Form

43.  TV broadcasting system in India is as per CCIR  
[A. system B](about:blank)  
[B. system I](about:blank)  
[C. system M](about:blank)  
[D. system X](about:blank)

Answer => A-[System B](about:blank)

Top of Form

Bottom of Form

44. The best viewing distance for a TV picture is \_\_\_\_ times the picture height  
[A. 2 to 4.](about:blank)  
[B. 4 to 8](about:blank)  
[C. 8 to 10](about:blank)  
[D. 10 to12](about:blank)

Answer => B- 4 to 8

Top of Form

Bottom of Form

45. The components signal are  
[A. camera signal](about:blank)  
[B. blanking pulses](about:blank)  
[C. sync pulses](about:blank)  
[D. all of the above](about:blank)

Answer => D- all of the above

46. TV transmitters of satellites USE

[A. image orthicon](about:blank)  
[B. vidicon](about:blank)  
[C. CRT](about:blank)  
[D. photoelectric cell](about:blank)

Answer => B- vidicon

Bottom of Form

47. Y-signals are also called -- signals.

[A. chroma](about:blank)  
[B. luminance](about:blank)  
[C. colour-difference](about:blank)  
[D. multiplexed](about:blank)

Answer => B- luminance

48. Frequency interleaving occurs if subcarrier frequency is an  
[A. odd multiple of half the line frequency](about:blank)  
[B. odd multiple of line frequency](about:blank)  
[C. even multiple of line frequency](about:blank)  
[D. even multiple of half the line frequency](about:blank)

Answer => A- odd multiple of half the line frequency

Bottom of Form

49. The colour killer section is operated by the  
[A. AFC section](about:blank)  
[B. subcarrier oscillator](about:blank)  
[C. picture detector](about:blank)  
[D. chroma demodulators](about:blank)

Answer => B- subcarrier oscillator

Bottom of Form

50.  In TV system the frame frequency is  
[A.100](about:blank)  
[B.60](about:blank)  
[C.50](about:blank)  
[D.25](about:blank)

Answer => D-25

Top of Form

Bottom of Form

51. In India the width of one channel is  
[A. 1 MHz](about:blank)  
[B. 2 MHz](about:blank)  
[C. 5 MHz](about:blank)  
[D. 7 MHz](about:blank)

Answer => D-7 MHz

Bottom of Form

52.  In a TV the voltage given to deflection coil is

[A. sine wave](about:blank)  
[B. square pulse](about:blank)  
[C. saw tooth type](about:blank)  
[D. trapezoidal](about:blank)

Answer => D

53. In TV the line blanking period is

[A. slightly less than the horizontal retrace](about:blank)  
[B. slightly ore than the horizontal retrace](about:blank)  
[C. exactly equal to the horizontal retrace](about:blank)  
[D. none of the above](about:blank)

Answer => A- slightly less than the horizontal retrace

Bottom of Form

54. According CCIR standards horizontal scanning frequency is  
[A. 15,625 Hz](about:blank)  
[B. 15,750 Hz](about:blank)  
[C. 50, Hz](about:blank)  
[D. 60 Hz](about:blank)

Answer => A-15,625 Hz

Top of Form

Bottom of Form

55. Line blanking period is  
[A. equal to the horizontal retrace](about:blank)  
[B. slightly greater than the horizontal retrace](about:blank)  
[C. slightly less than the horizontal retrace](about:blank)  
[D. none of these](about:blank)

Answer => B- slightly greater than the horizontal retrace

56. The part of the visible spectrum where camera pickup tubes have the greatest output is

A. red

B. blue

C. yellow-green

D. infrared

Answer: Option C- yellow-green

 57. ----is more important for the gamma correction for the camera tube.

A. Color

B. Monochrome

C. Both Color and monochrome

D. Either of Color or monochrome

Answer: Option A-Color

58. In gamma correction the is stretched by the picture tube.

A. Black

B. gray

C. white

D. red

Answer: Option C-white

59. What is the typical anode voltage for a 25-in color picture tube?

A. 10 kV

B. 30 kV

C. 1 kV

D. 30 V

Answer: Option B-30kV

60. The coils above and below the electron beam of the picture tube are for .

A. V scanning

B. H scanning

C. Either V or H scanning

D. None of these

Answer: Option B- H scanning

61. Neck shadow result when the deflection yoke is .

A. too near back

B. too near forward

C. too far back

D. too far forward

Answer: Option C- too far back

62. The R, G, and B screen grid adjustments are set for in the picture.

A. visual cutoff

B. white highlights

C. brightness control

D. gray-scale tracking

Answer: Option A- visual cutoff

63. In a TV receiver set, sound and video signals are separated at the  
[A. video detector](about:blank)  
[B. video amp](about:blank)  
[C. sync separator](about:blank)  
[D. IF stage](about:blank)

Answer => A- video detector

Top of Form

Bottom of Form

64. The vertical and horizontal pulses in a TV set are separated at the  
[A. AFC](about:blank)  
[B. sync amp](about:blank)  
[C. sync separator](about:blank)  
[D. AGC](about:blank)

Answer => C- sync separator

65. When in a TV receiver set, both sound and picture are weak and distorted, the problem is most likely to be in the  
[A. AFC](about:blank)  
[B. FM detector](about:blank)  
[C. tuner](about:blank)  
[D. video amp](about:blank)

Answer => C- Tuner

Top of Form

Bottom of Form

66. When a weak TV picture is accompanied by normal sound and bright raster, the probable fault lies in  
[A. AGC](about:blank)  
[B. video section](about:blank)  
[C. AF amp](about:blank)  
[D. sync amp](about:blank)

Answer => B-video section

Top of Form

67. Lack of raster in a TV receiver set often indicates no  
[A. TV signal](about:blank)  
[B. video signal](about:blank)  
[C. AGC](about:blank)  
[D. high voltage](about:blank)

Answer => D-High Voltage

Top of Form

Bottom of Form

68. If picture in a TV monitor is snowy in appearance, the defect is likely to be in  
[A. tuner](about:blank)  
[B. antenna cable](about:blank)  
[C. RF amplifier](about:blank)  
[D. any one of the above](about:blank)

Answer => D- any one of the above

69. If, in a colour TV set, picture tends to be one colour and also tends to bloom out white at times, the problem is likely to be in  
[A. demodulator stage](about:blank)  
[B. burst separator](about:blank)  
[C. colour oscillator](about:blank)  
[D. colour killer](about:blank)

Answer => A- demodulator stage

Top of Form

Bottom of Form

70.  If a person's face appears to be either too long or too short on a TV picture, you should adjust  
[A. vertical height control](about:blank)  
[B. AGC](about:blank)  
[C. vertical linearity control](about:blank)  
[D. pin phase and pin amp controls](about:blank)

Answer => C-[vertical linearity control](about:blank)

71. Indicate the false statement. Modulation is used to  
[A. reduce the bandwidth used](about:blank)  
[B. separate differing transmissions](about:blank)  
[C. ensure that intelligence may be transmitted over long distances](about:blank)  
[D. allow the use of practicable antennas](about:blank)

Answer => A- reduce the bandwidth used

Top of Form

Bottom of Form

72.  One of the following is an indirect way of generating FM. This is the ?modulator.  
[A. reactance tube](about:blank)  
[B. varactor diode](about:blank)  
[C. Armstrong](about:blank)  
[D. reactance transistor](about:blank)

Answer => C- Armstrong

73.  Tropospheric scatter is used with frequencies in the following range :  
[A. H.F.](about:blank)  
[B. V.H.F.](about:blank)  
[C. U.H.F.](about:blank)  
[D. U.F.](about:blank)

Answer => C- U.H.F.

74. In an FM receivet, the channel bandwidth is around ? kHz.  
[A.10](about:blank)  
[B.20](about:blank)  
[C.75](about:blank)  
[D.200](about:blank)

Answer => D-200

Top of Form

Bottom of Form

75.  In relation to TV receiver equipment, 'rabbit ears' refers to  
[A. shape of TV receiver cabinet](about:blank)  
[B. shape of test pattern displayed on the screen](about:blank)  
[C. picture distortion](about:blank)  
[D. receiving antenna](about:blank)

Answer => D- receiving antenna

Top of Form

Bottom of Form

**Unit II: Digital TV and Display Devices**

1) The down link frequency in the C band transponder is

(A) 6 GHz (B) 4 GHz

(C) 14 GHz (D) 11 GHz ANS: B

2). The carrier to noise ratio for a satellite depends upon

(A) Effective Isotropic Radiated power

(B) Bandwidth.

(C) Free space path losses

(D) All of them ANS: D

3). The multiple access technique suitable only for digital transmission is

(A) TDMA (B)FDMA

(C)Both (A)and (B) (D)Packet Access ANS: A

4) The LCD digital display that is based on

 A.Radiation of light

   B.Reflection of light

   C.Emission of light

   D.Transmission of lightANS:B

5) 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 ANS:C

6) The contrast of liquid crystal display (LCD)

A.Will increase if the back plate is more reflective

   B.Will decrease if the back plate is more reflective

   C.Will increase if the back plate is less reflective

   D.Will decrease if the back plate is less reflective ANS:C

|  |
| --- |
| 7).In a TV receiver, the blanking pulses are fed to |
| the horizontal deflector plates |
| the vertical deflector plates |
| the control grid of the electron gun the cathode |
| the cathode ANS:C |
|  |

8) .In TV receiver, the synchronizing pulses are fed to

The horizontal and vertical deflector plates of the picture tube



the control grid



the cathode



the electron gunANS:A



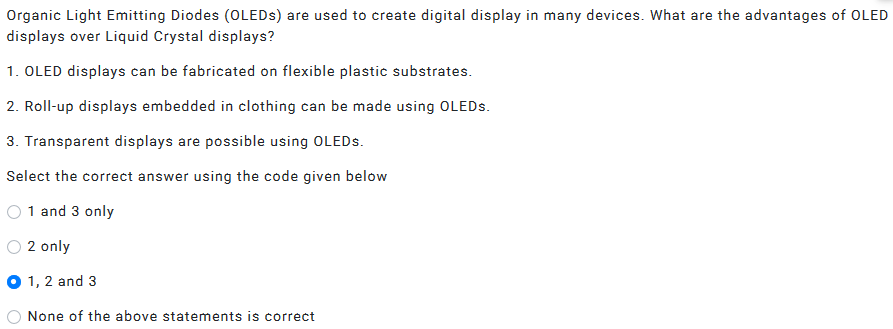
|  |  |
| --- | --- |
| 9)In a TV receiver, the picture signals are appliedto | |
| the vertical deflector plates |
| the horizontal deflector plates |
| the control grid of the electron gun |
|  | | |
|  | | |
| the filament of the electron gunANS:D  10).In TV transmission, the sound waves are transmitted by  phase modulation  frequency modulation  amplitude modulation  amplitude or phase modulationANS:B |
| 11)A DV camcorder is:  A. Capable of creating video in HDTV  B. Used to create digital video  C. Limited to the Direct Video format  D. A Denon Video brand product  Answer: Option A |
|  |

12.In TV receiver, the synchronizing pulses are fed to

The horizontal and vertical deflector plates of the picture tubethe control gridthe cathodethe electron gun



|  |  |
| --- | --- |
|  |  |
|  |  |
|  |  |



14. What are the four electromechanical devices retained while making an avionics update for old aircraft?  
a) Vertical speed indicator, airspeed indicator, artificial horizon and heading indicator  
b) Altimeter, airspeed indicator, artificial horizon and angle of attack indicator  
c) Altimeter, airspeed indicator, turns coordinator and heading indicator  
d) Altimeter, airspeed indicator, artificial horizon and heading indicator  
View Answer

Answer: d

15. 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 manufacture  
View Answer

Answer: c

16. What are the 5 primary mechanical displays, a Primary Flight Display (PFD) can replace?  
a) Altimeter, turn coordinator, vertical speed indicator, artificial horizon and heading/compass indicator  
b) Altimeter, vertical speed indicator, artificial horizon, heading/compass indicator and Mach meter  
c) Altimeter, vertical speed indicator, artificial horizon, heading/compass indicator and landing gear position  
d) Altimeter, turn coordinator, artificial horizon, heading/compass indicator and Mach meter  
View Answer

Answer: b

17. Why are mechanical instruments retained when high tech LED displays are available?  
a) LED displays are costly  
b) LED Displays cannot withstand the flight environment conditions  
c) Probability of failure  
d) Accuracy  
View Answer

Answer: c

18. Which of the following is false with respect to multi-function LCD displays in cockpits?  
a) High resolution  
b) More information to be displayed  
c) Bigger and customizable display  
d) Take more space in cockpits  
View Answer

Answer: d

19. How many Primary Flight Displays are present in typical civil aircraft cockpit?  
a) 1  
b) 2  
c) 4  
d) 3  
View Answer

Answer: b

20. Which one of the following is false with respect to electromechanical instruments?  
a) High cost  
b) Require skilled labor for repair  
c) Accurate measurements  
d) Inevitable wear  
View Answer

Answer: c

21. What are the standby instruments that are combined in a Solid state integrated standby instrument?  
a) Altimeter, vertical speed indicator, artificial horizon  
b) Altimeter, airspeed indicator  
c) Altimeter, airspeed indicator, artificial horizon  
d) Altimeter, turn coordinator, artificial horizon, heading/compass indicator and Mach meter  
View Answer

Answer: c

22. What is the operating voltage of Solid-state integrated standby instrument?  
a) 11V DC  
b) 28V DC  
c) 5V DC  
d) 115V DC  
View Answer

Answer: b

23. The solid-state instruments are of higher accuracy than mechanical systems.  
a) True  
b) False  
View Answer

Answer: a

24.The colour of emitted light from LED depends on

   A.Construction of LED, that is physical dimensions

   B.Number of available carriers

   C.Type of semiconductor material used

   D.Number of recombinations taking place

Answer: C.Type of semiconductor material used

25. The advantage of LED is

   A.Long life

   B.Fast on-off switching

   C.Low operating voltage

   D.All of the above

✔ View Answer D.All of the above

26. The typical value of power consumption of LED is

   A.Around 10 mW

   B.In between 15 mW and 20 mW

   C.In between 30 mW and 40 mW

   D.In between 35 mW and 50 mW

✔ View Answer B.In between 15 mW and 20 mW

29. When forward biased, LED emits light because of

   A.Recombination of carriers

   B.Light generated in breaking the covalent bonds

   C.Light produced by collisions

   D.All of the above reasons

✔ View Answer

A.Recombination of carriers

30. The LEDs made with GaAs emit light in the

   A.Yellow region

   B.Infrared region

   C.Orange region

   D.Red visible region

ANS:B.Infrared region

30. What is the use of a laser beam in image formation?  
a) Triangulation system for measuring system  
b) Reduce glare of image  
c) Controls contrast of image  
d) Controls brightness of image  
View Answer

Answer: a

31. Where is backlighting is best suited?  
a) Simple silhouette image is required to obtain minimum image contrast  
b) Certain key features on the surface of the object are to be inspected  
c) Simple silhouette image is required to obtain maximum image contrast  
d) Three-dimensional feature is being inspected  
View Answer

Answer: c

32. Which light is preferred if three dimensional features are being inspected?  
a) Front lighting  
b) Side lighting  
c) Backlighting  
d) Any lighting is suited  
View Answer-C

33. Why do CCD or CID cameras are used?  
a) To generate the electronic signal representing the image  
b) To generate image’s hard copy  
c) To determine lighting of the image  
d) To capture heat signature  
View Answer

Answer: a

34. Where is the Vidicon Camera used?  
a) Open-circuit television systems  
b) In Image processing  
c) In image analysis  
d) Closed-circuit television systems  
View Answer

Answer: d

35. What is used in solid state cameras?  
a) Image sensor IC  
b) CMOS image sensors  
c) Charge coupled device (CCD) image sensors  
d) Digital camera image sensor  
View Answer

36. How many detector elements are present in a matrix array solid state camera?  
a) 156 x 156 per array  
b) 216 x 216 per array  
c) 116 x 116 per array  
d) 256 x 256 per array  
View Answer

Answer: d

37. What is the common rate of an image forming in a camera?  
a) 20 images per second  
b) 30 images per second  
c) 25 images per second  
d) 50 images per second  
View Answer

38. What is windowing?  
a) Technique used to concentrate the processing in a desired area of an image  
b) Technique used for image restoration  
c) Technique for image analysis  
d) Technique to describe and measure the properties of image features  
View Answer

Answer: a

39. Which of the following method is used to reduce processing of image?  
a) Triangulation technique  
b) Digital imaging technique  
c) Run length encoding  
d) Stereo vision  
View Answer

Answer: c

40. What is stadimetry?  
a) Direct imaging technique in which distance is judged by apparent object distance  
b) Indirect imaging technique in which distance is judged by apparent object distance  
c) Direct imaging technique in which distance is judged by actual distance of the object  
d) Indirect imaging technique in which distance is judged by actual distance of the object  
View Answer

Answer: a

41. Which method is not used to determine object orientation?  
a) Equivalent ellipse  
b) Triangulation technique  
c) Structured light method  
d) Light intensity distribution  
View Answer

Answer: b

42. Which method is used for interpreting images?  
a) Light intensity distribution  
b) Stereo vision  
c) Optical computing  
d) Template matching  
View Answer

Answer: d

43. What do you mean by image interpretation?  
a) Identification of type of image  
b) Identification of an object based on recognition of its image  
c) Identification of color content of image  
d) Identification of each pixel of image  
View Answer

Answer: b

UNIT3: HDTV

1. The satellite that is used as a relay to extend communication distance is called as \_\_\_\_\_\_\_b\_\_\_  
   a) Relay satellites  
   b) Communication satellites  
   c) Repeater satellites  
   d) Geosynchronous satellites

Ans:b

1. The transmitter-receiver combination in the satellite is known as a \_\_c\_\_\_\_\_  
   a) Relay  
   b) Repeater  
   c) Transponder  
   d) Duplexer

Ans: c

1. 3. The downlink frequency is lower than the uplink frequency.  
   a) True  
   b) False  
   Ans: a

4. What is the reason for carrying multiple transponders in a satellite?  
a) More number of operating channel  
b) Better reception  
c) More gain  
d) Redundancy  
Ans: a

5. Why are VHF, UHF, and microwave signals used in satellite communication?  
a) More bandwidth  
b) More spectrum space  
c) Are not diffracted by the ionosphere  
d) Economically viable  
Ans: c

6. What is the reason for shifting from c band to ku band in satellite communication?  
a) Lesser attenuation  
b) Less power requirements  
c) More bandwidth  
d) Overcrowding  
d

7. Which of the following bands cannot be used for satellite communication?  
a) MF  
b) Ku  
c) X  
d) C  
a

8. What is the maximum theoretical data rate if a transponder is used for binary transmission and has a bandwidth of 36MHz?  
a) 32Mpbs  
b) 72Mpbs  
c) 36Mpbs  
d) 12Mpbs

B

9.  With reference to Direct to Home (DTH) satellite transmission, what is the difference between C-Band transmission and Ku-Band Transmission?  
a. The uplink and downlink Frequency range of the C-Band is much smaller than the Ku-Band  
b. A larger disc is needed for Ku-Band transmissions compared to C-band transmissions  
c. C-band is generally not interfered with the microwave links and other technologies

A

10. In HDTV both the video and the audio signals must be digitized by A/D converters and transmitted \_\_\_\_\_\_ to the receiver.

a. Serially

b. Parallel

c. Reliably

d. Manually

A

11. In HDTV transmitter, the luminance sampling rate is \_\_\_\_\_, and the chroma sampling rate is \_\_\_\_\_\_\_.

a. 4.2 MHz

b. 14.3 MHz

c. 6 MHz

d. 7.15 MHz

B & D

12. \_\_\_\_\_\_ is the data compression method used in HDTV.

a. JPEG

b.Bit map

c. MPEG-4

d MPEG-2

Ans-d

13 In HDTV transmitter, the random serial signal is passed through a Reed-Solomon (RS) error detection and correction circuit. This circuit \_\_\_\_\_\_to the data stream so that transmission errors can be detected at the receiver and corrected.

1. Adds extra bits
2. Subtracts the extra bits
3. Does not change the bit
4. Maintains the bits

Ans:a

14. The modulation scheme used in HDTV is \_\_\_\_\_

a. 2-VSB

b. 4-VSB

c. 8-VSB

d. 16-VSB

Ans:c

15. An HDTV receiver picks up the \_\_\_\_\_\_\_signal.

a. original

b. changed

c. fade

d. composite

Ans d

16. DTH stands for

a. Door to home

b. Detect to home

c. Direct to Home

d. Deliver to home

Ans c

20.  An oscilloscope is generally used to measure the value of .......... voltage  
[A. dc](about:blank)  
[B. rms ac](about:blank)  
[C. peak-to-peak ac](about:blank)  
[D. average value of ac](about:blank)

Answer => C- peak-to-peak ac

Top of Form

Bottom of Form

21. The purpose of a synch oscilloscope is to  
[A. set the intensity level](about:blank)  
[B. control brightness](about:blank)  
[C. set the focus](about:blank)  
[D. lock the signal](about:blank)

Answer => D- lock the signal

22. The length of the sweep screen is controlled by  
[A. sync control](about:blank)  
[B. sweep selector](about:blank)  
[C. horizontal gain](about:blank)  
[D. vertical gain](about:blank)

Answer => C- horizontal gain

Top of Form

Bottom of Form

23. Both dot and line patterns on a TV screen are produced by

[A. sine waves](about:blank)  
[B. rectangular waves](about:blank)  
[C. sawtooth waves](about:blank)  
[D. pulse waveforms](about:blank)

Answer => D- pulse waveforms

Top of Form

Bottom of Form

24. White-dot and cross-hatch generators are chiefly used for  
[A. convergence of colour picture tubes](about:blank)  
[B. linearity of colour picture tubes](about:blank)  
[C. intensity tests of colour picture tubes](about:blank)  
[D. generation of colour bar patterns](about:blank)

Answer => A- convergence of colour picture tubes

Bottom of Form

25. White-dot and cross-hatch patterns are commonly called .......... patterns.  
[A. linearity](about:blank)  
[B. colour bar](about:blank)  
[C. convergence](about:blank)  
[D. background](about:blank)

Answer => C- convergence

26.  Colour bar generators are used mainly to check the operation of the ........... in colour TV receivers.  
[A. number of chroma bars](about:blank)  
[B. chroma circuitry](about:blank)  
[C. video](about:blank)  
[D. RF](about:blank)

Answer => B- chroma circuitry

27.  A vectorgram is useful because it shows at a glance whether the operation of the .......... is normal.  
[A. RF amplifier](about:blank)  
[B. horizontal amplifier](about:blank)  
[C. chroma demodulator](about:blank)  
[D. video amplifier](about:blank)

Answer => C- chroma demodulator

Top of Form

Bottom of Form

28. The control that adjusts the frequency of the horizontal sweep oscillator in an oscilloscope is

[A. sync selector](about:blank)  
[B. Z-axis](about:blank)  
[C. horizontal gain](about:blank)  
[D. sweep control](about:blank)

Answer => D- sweep control

Bottom of Form

29. In a TV receiver set, sound and video signals are separated at the  
[A. video detector](about:blank)  
[B. video amp](about:blank)  
[C. sync separator](about:blank)  
[D. IF stage](about:blank)

Answer => A- video detector

Top of Form

Bottom of Form

30. The vertical and horizontal pulses in a TV set are separated at the  
[A. AFC](about:blank)  
[B. sync amp](about:blank)  
[C. sync separator](about:blank)  
[D. AGC](about:blank)

Answer => C- sync separator

31. A single horizontal line across the middle of a TV screen indicates trouble in  
[A. horizontal section](about:blank)  
[B. vertical section](about:blank)  
[C. tuner](about:blank)  
[D. video section](about:blank)

Answer => B- vertical section

32. The three primary colours in the chrominance signal of a colour TV are

[A. red, green, orange](about:blank)  
[B. red, green, blue](about:blank)  
[C. blue, green, magenta](about:blank)  
[D. yellow, green, cyan](about:blank)

Answer => [B. red, green, blue](about:blank)

33. Absence of one colour in a colour picture indicates  
[A. shorting of one of the guns in picture](about:blank)  
[B. defect in colour video amp](about:blank)  
[C. either (a) or (b)](about:blank)  
[D. none of the above](about:blank)

Answer => C- either (a) or (b)

34. When referring to colour TV receivers, ATC stands for  
[A. automatic tone control](about:blank)  
[B. automatic tint control](about:blank)  
[C. automatic television control](about:blank)  
[D. automatic tuner control](about:blank)

Answer => B- automatic tint control

Bottom of Form

35. Tropospheric scatter is used with frequencies in the following range :  
[A. H.F.](about:blank)  
[B. V.H.F.](about:blank)  
[C. U.H.F.](about:blank)  
[D. U.F.](about:blank)

Answer => C- [U.H.F.](about:blank)

Bottom of Form

36. The TV broadcasting in India is done in  
[A. VHF band I](about:blank)  
[B. VHF band I and II](about:blank)  
[C. VHF band I. H and III](about:blank)  
[D. VHF band I and II](about:blank)

Answer => D- VHF band I and II

Top of Form

Bottom of Form

37. The signals sent by the TV transmitter to ensure correct scanning in the receiver are called  
[A. sync](about:blank)  
[B. chroma](about:blank)  
[C. luminance](about:blank)  
[D. video](about:blank)

Answer => A- sync

38. The line frequency of TV system in India is ? Hz.  
[A.625](about:blank)  
[B.15,625](about:blank)  
[C.15,750](about:blank)  
[D.15,950](about:blank)

Answer => B-15,625

Top of Form

Bottom of Form

39. A complete television signal consists of  
[A. sync pulses and a sound signal](about:blank)  
[B. camera signal](about:blank)  
[C. a video signal and sync pulses](about:blank)  
[D. a composite video signal and sound signal](about:blank)

Answer => D- a composite video signal and sound signal

Top of Form

Bottom of Form

40. The number of frames per second in our TV system is  
[A.50](about:blank)  
[B.24](about:blank)  
[C.25](about:blank)  
[D.49](about:blank)

Answer => C-25

Top of Form

Bottom of Form

41. Interlacing is used in TV frames to  
[A. produce illusion of motion](about:blank)  
[B. ensure scanning of all lines](about:blank)  
[C. avoid flicker](about:blank)  
[D. avoid Humming](about:blank)

Answer => C- avoid flicker

Top of Form

Bottom of Form

42. The separation of sound and picture carriers in our TV system is ? MHz.  
[A.5.5](about:blank)  
[B.4.5](about:blank)  
[C.6](about:blank)  
[D.5](about:blank)

Answer => A-5.5

Top of Form

Bottom of Form

43.  TV broadcasting system in India is as per CCIR  
[A. system B](about:blank)  
[B. system I](about:blank)  
[C. system M](about:blank)  
[D. system X](about:blank)

Answer => A-[System B](about:blank)

Top of Form

Bottom of Form

44. The best viewing distance for a TV picture is \_\_\_\_ times the picture height  
[A. 2 to 4.](about:blank)  
[B. 4 to 8](about:blank)  
[C. 8 to 10](about:blank)  
[D. 10 to12](about:blank)

Answer => B- 4 to 8

Top of Form

Bottom of Form

45. The components signal are  
[A. camera signal](about:blank)  
[B. blanking pulses](about:blank)  
[C. sync pulses](about:blank)  
[D. all of the above](about:blank)

Answer => D- all of the above

**Unit IV: Advanced TV Systems**

1. Which of the following is not a characteristic of 3G network?

a) Communication over VoIP

b) Unparalleled network capacity

c) Multi-megabit Internet access

d) LTE based network

2. What is the term used by ITU for a set of global standards of 3G systems?

a) IMT 2000

b) GSM

c) CDMA

d) EDGE

3. Which of the following leads to evolution of 3G networks in CDMA systems?

a) IS-95

b) IS-95B

c) CdmaOne

d) Cdma2000

5. What is 3GPP?

a) Project based on W-CDMA

b) Project based on cdma2000

c) Project based on 2G standards

d) Project based on 2.5G standards

6. What is the average uploading speed of 4G LTE network?

a) 1-3 Gbps

b) 2-5 Gbps

c) 1-3 Mbps

d) 2-5 Mbp

7. Which of the following is not a part of the characteristic of 4G network?

a) Multirate management

b) Fully converged services

c) Software dependency

d) Diverse user devices

8. In TV transmission, picture signal is \_\_\_\_\_\_\_\_ modulated.

a) DSB-SC

b) VSB

c) SSB-SC

d) Pulse

9. In TV transmission, sound signal is \_\_\_\_\_\_\_\_ modulated.

a) Phase

b) Pulse

c) Frequency

d) Amplitude

10. A wireless network uses \_\_\_ waves to transmit signals. | Wifi mcqs

A. mechanical

B. radio

C. sound

11. What device sends and receives radio signals in a wireless network? | Wifi mcqs

A. modem

B. digital translator

C. router

12. At what frequencies do Wi-Fi radios make transmissions? | Wifi mcqs

A. 3 GHz or 8 GHz

B. 2.4 GHz or 5 GHz

C. 2 GHz or 7.3 GHz

13.\_\_\_\_\_\_ Of the following networking standards, which is not used in Wi-Fi data transmissions? | Wifi mcqs

A. 802.11g

B. 802.11q

C. 802.11b

Ans: B

14. Which networking standard is the slowest and least expensive? | Wifi mcqs

A. 802.11a

B. 802.11b

C. 802.11n

15. Which networking standard was the first to use orthogonal frequency-division multiplexing (OFDM) as a coding technique? | Wifi mcqs

A. 802.11g

B. 802.11a

C. 802.11n

16. A pulse-type waveform (such as television line pulse) is a modification of

A. square wave

B. rectangular wave

C. sawtooth wave

D. sine wave

17. The main purpose of interlacing in television scanning is to

A. reduce flicker

B. brighten the TV picture

C. sharpenpicture outline

D. increase channel bandwidth

18. 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

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

A.1250

B.312.5

C.625

D.2500

20. The function of a sync separator ma TV set is to separate the signals.

A. video and sound

B. video and line sync

C. line sync and field sync

D. sound and field sync

21. The main function of electron gun in a cathode-ray tube is to ---- electrons.

A. deflect

B. produce

C. size

D. aspect

22. In a CRT, focussing of electron beam is achieved by varying

A. grid bias

B. heater voltage

C. voltage of first accelerating anode

D. secondary accelerating voltage

23.The architecture of hardware, software, content and data is known as:

A. E-commerce infrastructure

B.E-business web structure

C.E-business infrastructure

D.None of the above

24. The level of e-business infrastructure which refers to information processed and displayed is:

A. Storage/physical

B.Infrastructure

C.Application content

D.Processing

25.The level of e-business infrastructure which refers to computation and logic is:

A. Storage/physical

B. Infrastructure

C. Application content

D. Processing

26.A service provider that manages the server used to host an organisation website and its connections to the Internet backbones is known as:

A.Internet service provider

B.Client server

C.Hosting provider

D.All of the above

27.The website for a company is hosted on a:

A. Web server

B.Web infrastructure

C.Web client

D.Web page

28. Which of the following is the most widespread video streaming service?

a) Flickr

b) Dailymotion

c) Metacafe

d) All of the mentioned

29. Which of the following is the largest video sharing site?

a) YouTube

b) YuMe

c) Yahoo Video

d) All of the mentioned

30. Point out the wrong statement.

a) Veoh serves TV and movie content from major studios, along with uploaded user content

b) UStream.tv is a live video event streaming service

c) RuTube is a popular Japanese video-sharing site

d) None of the mentioned

31. Which of the following application is an example of TV over the Internet?

a) Hulu.com

b) MySpace

c) Comcast

d) None of the mentioned

32. Which of the following movie subscription service has moved to the cloud?

a) AOL

b) Netflix

c) XBox

d) None of the mentioned

33.What is the name of the device that allows four surveillance camera images to be viewed on a monitor at the same time?

1. A video splitter
2. A modulator
3. A quad switcher
4. A photoelectric sensor

34.What is the term used to describe the amount of light required to obtain a reasonable image with a surveillance video camera?

1. Lux rating
2. Candlepower rating
3. Resolution
4. Pixels

35. Data acquisition system acquire data from \_\_\_\_\_\_\_\_\_\_\_\_\_

1. Transducers
2. Flip flop
3. Memory
4. None of the mentioned

36. SBOD stands for \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Status bunch of disc
2. Switched bunch of disc
3. Status bunch of display
4. None of the mentioned

37. Data recorders acquire data from \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Transducers
2. Sensors
3. Both transducers and sensors
4. None of the mentioned

38. RAID stands for \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Recorded Array of Inexpensive Disc
2. Redundant Array of Inexpensive Disc
3. Redundant Array of Intelligent Disc
4. Redundant Array of Inexpensive Display

39. Which of the following is correct for SBOD?

1. Based on fibre channel
2. Based on RF technology
3. Based on Fibre and RF
4. None of the mentioned

40. Which of the following represents the storage capability of flip-flop?

1. 1 bit
2. 1 byte
3. 1 kilo bit
4. 1 kilo byte

41. What is the full form of UMTS?

1. Universal Mobile Telephone System
2. Ubiquitous Mobile Telephone System
3. Ubiquitous Mobile Telemetry System
4. Universal Machine Telemedicine System

42. UMTS use which multiple access technique?

1. CDMA
2. TDMA
3. FDMA
4. SDMA

43. UMTS does not has backward compatibility with \_\_\_\_\_\_\_\_\_\_\_\_

1. GSM
2. IS-136
3. IS-95
4. GPRS

44. UMTS is also known as \_\_\_\_\_\_\_\_\_\_\_\_\_

1. IS-95
2. GPRS
3. CdmaOne
4. W-CDMA

45. What is the chip rate of W-CDMA?

1. 1.2288 Mcps
2. 3.84 Mcps
3. 270.833 Ksps
4. 100 Mcps

46. Modulation is done in …………..

1. Transmitter
2. Radio receiver
3. Between transmitter and radio receiver
4. None of the above

47. In a transmitter ……………. oscillator is used

1. Hartley
2. RC phase-shift
3. Wien-bridge
4. Crystal

48. In India, ……………. modulation is used for radio transmission

1. Frequency
2. Amplitude
3. Phase
4. None of the above

49. In an AM wave useful power is carrier by ………….

1. Carrier
2. Sidebands
3. Both sidebands and carrier
4. None of the above

50. In amplitude modulation, bandwidth is ……………. the audio signal frequency

1. Thrice
2. Four times
3. Twice
4. None of the above

51. In amplitude modulation, the ………… of carrier is varied according to the strength of the signal.

1. Amplitude
2. Frequency
3. Phase
4. None of the above

52. Overmodulation (amplitude) occurs when signal amplitude is …………. carrier amplitude

1. Equal to
2. Greater than
3. Less than
4. None of the above

53. In an AM wave, the majority of the power is in …………….

1. Lower sideband
2. Upper sideband
3. Carrier
4. None of the above

54. At 100% modulation, the power in each sideband is ………………… of that of carrier

1. 50%
2. 40%
3. 60%
4. 25%

55. Overmodulation results in …………..

1. Weakening of the signal
2. Excessive carrier power
3. Distortion
4. None of the above

56.Which of this is not a guided media ?

a) Fiber optical cable

b) Coaxial cable

c) Wireless LAN

d) Copper wire

57.UTP is commonly used in

a) DSL

b) FTTP

c) HTTP

d) None of the mentioned

58.Coaxial cable consists of \_\_\_\_\_\_\_ concentric copper conductors.

a) 1

b) 2

c) 3

d) 4

59.Fiber optics posses following properties

a) Immune electromagnetic interference

b) Very less signal attenuation

c) Very hard to tap

d) All of the mentioned

60. If an Optical Carrier is represented as OC-n, generally the link speed equals(in Mbps),

a) n\*39.8

b) n\*51.8

c) 2n\*51.8

d) None of the mentioned

61.Terrestrial radio channels are broadly classifed into \_\_\_\_\_ groups.

a) 2

b) 3

c) 4

d) 1

62.IMT-2000 is a digital mobile system that functions as

a. Pager

b. Cordless

c. Low earth orbit satellites

d. All of the above

63.The 2G cellular network uses

a. TDMA/FDD

b. CDMA/FDD

c. Digital modulation formats

d. All of the above

64.NADC is a 2G standard for

a. TDMA

b. CDMA

c. Both a & b

d. None of the above

65.2G CDMA standard – cdma one supports up to

a. 8 users

b. 64 users

c. 32 users

d. 116 users

66.2G standards support

a. Limited internet browsing

b. Short Messaging Service

c. Both a & b

d. None of the above

67. Which of the following devices are similar to electronic data loggers?

a) Chart recorders

b) Flip flop

c) Memory

d) None of the mentioned

68. Which of the following protocol allow the instrument to connect to a data logger?

1. SDI-10
2. SDI-12
3. SAI-10
4. SAI-12

69. Which of the following statement is false?

1. All data loggers are data acquisition system
2. All data acquisition systems are data loggers
3. Data logger and Data acquisition systems are same is operation
4. All of the mentioned

70. Data logger system have \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Slow sampling rate
2. Fast sampling rate
3. Unpredictable sampling rate
4. None of the mentioned

71. Which of the following is correct for data loggers?

1. Simple single channel instrument
2. Medium channel instrument
3. Complex multiple channel instrument
4. All of the mentioned

72. Device for monitoring various electrical activity of cardio vascular system is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Diagnostic trouble coder
2. Holter monitor
3. Cardio event decoder
4. Electronic health logger

73. Data logger deals with \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Digital signals
2. Analog signals
3. Both digital and analog signals
4. None of the mentioned

74. In 2007 \_\_\_\_\_\_\_\_\_\_\_\_ announced its plan to transmit its network to 4G standard LTE with joint efforts of Vodafone group.

1. Verizon Wireless
2. AirTouch
3. Netflix
4. V Cast

75. Hybrid ARQ is part of the \_\_\_\_\_\_\_\_\_\_\_\_ layer.

1. PDCP
2. RLC
3. MAC
4. PHY