BRAINWARE UNIVERSITY

Term End Examination 2021 - 22
Programme – Diploma in Electronics & Communication Engineering
Course Name – Advance Communication Engineering
Course Code - DECE602
(Semester VI)

Time allotted : 1 Hrs.15 Min. **Full Marks : 60**

[The figure in the margin indicates full marks.]

Group-A

(Multiple Choice Type Question) 1 x 60=60

Choose the correct alternative from the following :

(1) Whole world can be covered with
a) 3 Geo-stationary satellites
b) 2 Geo-stationary satellites
c) 5 Geo-stationary satellites
d) 4 Geo-stationary satellites

(2) The key electronic component in a communication satellite is
a) Telemetry
b) Command and control system
c) On board computer
d) Transponder

(3) The uplink and downlink frequencies are made different in satellite links to
a) Reduce transmitter power
b) Reduce antenna size
c) Increase the isolation between the satellite transmitter and receiver
d) all of these

(4) Radiation is described as
a) Energy transfer
b) Energy conversion
c) Polar plane
d) A series of waves

(5) Satellite earth station has
a) Only receiving equipment
b) Only transmitting equipment
c) Both (a) and (b)
d) None of these

(6) Most commercial satellite activity occurs in
a) X band
b) S and P band
c) L band
d) C and Ku band

(7) For global communication, the number of satellites needed
a) 1
b) 3
c) 4
d) 10

(8) A transfer orbit is
a) A polar orbit
b) A circular orbit
c) An elliptical orbit
d) Geosynchronous orbit

(9) A helical antenna is used for satellite tracking because of

a) Circular polarization
b) Gain
c) Beam width
d) All of these

(10) As the height of a satellite orbit gets lower, the speed of the satellite

a) Increases
b) Decreases
c) Remains the same
d) None of these

(11) A geosynchronous satellite

a) Has the same period that of the earth
b) Has a circular orbit
c) Rotates in the equatorial plane
d) All of these

(12) INTELSAT stands for

a) International Telecommunications Satellite
b) India Telecommunications Satellite
c) Inter Telecommunications Satellite
d) International Telephone Satellite

(13) For an elliptical orbit

a) $0 < e < 1$
b) $e = 0$
c) $e = 1$
d) $e \geq 1$

(14) Kepler's third law states

a) $T^2 \alpha a^3$
b) $T^3 \alpha a^2$
c) $T^2 \alpha a^3/2$
d) $T^2 \alpha a^2/3$

(15) Apogee is

a) The point farthest from earth
b) The point nearest from earth
c) The point smallest from earth
d) None of these

(16) The down link frequency in the C band transponder is

a) 6 GHz
b) 11 GHz
c) 4 GHz
d) 7 GHz

(17) The multiple access technique suitable only for digital transmission is

a) TDMA
b) FDMA
c) CDMA
d) Both (a)and (b)

(18) Low-Earth-orbit (LEO) satellites have _____ orbits.

a) equatorial
b) polar
c) inclined
d) None of these

(19) GPS satellites are _____ satellites.

a) GEO
b) MEO
c) LEO
d) None of these

(20) The uplink Frequency of C-band communication satellites is around

a) 4 GHz
b) 6 GHz
c) 10 GHz
d) 12 GHz

(21) Acceptance angle is the

a) Minimum angle of incidence
b) Maximum angle of incidence
c) It can be maximum or minimum depending on nature of material used in core
d) None of these

(22) Step index fiber sustains only

a) Single mode of propagation
b) multimode of propagation
c) Both (a) and (b)
d) None of these

(23) In a Phototransistor photo current is generated at

a) Emitter base junction
b) Collector base junction

c) Either of the junctions
d) Both the junction

(24) Single mode optical fiber is mainly used for

a) Long haul communication
b) Short haul communication
c) Medium haul communication
d) None of these

(25) An LED source produces light when

a) It is reverse biased
b) Holes and electrons are combine in the depletion region
c) The depletion region becomes wider
d) Electrons are emitted from junction surface

(26) Maximum dispersion occurs in

a) Single mode step index fiber
b) Multimode step index fiber
c) Graded index fiber
d) None of these

(27) Removable joints which allow easy, fast, manual coupling and decoupling of fiber are called

a) Fiber splices
b) Fiber connector
c) Fiber coupler
d) None of these

(28) Optical fiber communication operates in the wavelength band

a) 400 μm to 700 μm
b) 800 μm to 1600 μm
c) 400 nm to 700 nm
d) 800 nm to 1600 nm

(29) In Optical fiber communication, the second window is centered at around

a) 1310 nm
b) 850 nm
c) 1550 nm
d) 3300 nm

(30) Pulse broadening in graded index fiber is due to

a) Intermodal dispersion
b) Intramodal dispersion
c) Both (a) and (b)
d) None of these

(31) Which of the following fibers are suitable for wavelength division multiplexing of signals?

a) Dispersion shifted fiber
b) Dispersion flattened fiber
c) Parabolic index fiber
d) Step index fiber

(32) Laser based optical communication system can operate at much higher modulation frequencies than LED based system, because

a) Laser has faster rise time than LED
b) Light output increases sharply above threshold current
c) Light emitted by laser are more directional than LED
d) Laser is a coherent optical source

(33) For an LED, when the carrier lifetime is low, the modulation bandwidth is

a) High
b) Low
c) Unaffected
d) Unknown

(34) Photodetector is a

a) Square law device
b) Linear device
c) Exponential device
d) None of these

(35) Attenuation in optical fiber is measured in

a) dB/Km
b) dB/br
c) K dB/m
d) d Bm/m

(36) Which of the following is an inherent property of an optical signal and cannot be determined even in principle?

a) Thermal noise
b) Environmental noise
c) Background noise
d) Shot noise

(37) Which optical source-detector combination is suitable for high bandwidth long haul communication?

a) LED – Pin diode
b) LASER diode - APO
c) LED – LASER diode
d) LED - APO

(38) The suitable material for an optical detector is

a) A direct band gap semiconductor
b) An indirect band gap semiconductor
c) A metal
d) None of these

(39) Which of the following detectors is suitable for detection of weak optical signal?

a) P-n photodiode
b) P-i-n photodiode
c) Avalanche photodiode
d) photoconductor

(40) Which of the following materials is suitable for making a light source operating in the near infrared region (800-900nm)?

a) GaAlAs
b) GaAs
c) Si
d) None of these

(41) Intramodal dispersion occurs in a fiber because of

a) Different time taken by different rays to pass through the fiber
b) Power attenuation in the fiber
c) Different frequency components passing through the fiber undergo different amounts of delay
d) All of these

(42) Solitons are pulses which propagates through fiber without showing any variation in _____

a) Amplitude
b) Velocity
c) Shape
d) All of these

(43) Which of the following is used as an optical receiver in fiber optics communication?

a) APD
b) LED
c) Tunnel diode
d) Laser diode

(44) In case of all optical technology, the wavelength of source should be

a) 0.67 μm
b) 0.58 μm
c) 1.55 μm
d) 1.33 μm

(45) Optical fiber made of silica has attenuation loss around _____ at the wavelength 1.55μm

a) 1.24 dB/Km
b) 3.3 dB/Km
c) 0.2 dB/Km
d) 0.77 dB/Km

(46) LED is a

a) Zener diode
b) p-n diode
c) Gate
d) Transistor

(47) Which diode is used for measuring light intensity?

a) Varactor diode
b) Tunnel diode
c) Junction diode
d) Photodiode

(48) LED made using GaAS emits radiation in

a) Visible region
b) Infrared region
c) Microwave frequency region
d) Ultraviolet region

(49) For effective coupling from fiber to detector, the detector should have

a) Small size and low bias voltage
b) Small size and high bias voltage
c) Large size and low bias voltage
d) Large size and high bias voltage

(50) The function of WDM is to

a) Separate signals at different wavelengths and couple them to different detectors
b) Combine signals at different wavelengths to pass through a single fiber
c) Tap off part of the energy of the incoming signal
d) Change the transmission speed of the input signal

(51) Full form of LASER is

a) Light Amplifies by Stimulated Emission of Radiation
b) Light Amplification by Stimulated Emission of Radiation
c) Light Amplifier by Stimulated Emission of Recombination
d) Light Amplification by Stimulated Energy of Radiation

(52) Which is better for avoiding jamming?

a) Direct sequence spread spectrum
b) Frequency hopping spread spectrum
c) Time hopping spread spectrum
d) None of the mentioned

(53) A pseudorandom code generator is known as

a) Hopping
b) Carrier signals
c) Pseudorandom noise
d) Frequency synthesizer

(54) In frequency hopping spread spectrum (FHSS), the sender and receiver can have privacy if the hopping period is

a) Long
b) Short
c) Infinity
d) Zero

(55) Which modulation scheme is preferred for direct sequence spread spectrum process?

a) BPSK
b) QPSK
c) Both (a) and (b)
d) None of the mentioned

(56) A linear feedback shift register consists of

a) Feedback path
b) Modulo 2 adder
c) Shift registers
d) All of these

(57) A URL is an

a) Internet e-mail address
b) Router code
c) Web address
d) File name

(58) Which of the following is a regenerator?

a) Bridge
b) Router
c) Repeater
d) Gateway

(59) IEEE standard for standard Ethernet is

a) IEEE 802.11
b) IEEE 805.11
c) IEEE 802.3
d) IEEE 802.5

(60) The connectivity from exchange to customer premises is termed as

a) Data network
b) Access network
c) Bridge network
d) None of these