

SAMPLE QUESTIONS (OBJECTIVE)

A. Fill in the blanks:

1. DTMF signaling method adopted for calling in case of control communication.
2. Equipments provided at waystations for control communication are &
3. In control communication, DTMF..... is located at controller's place.
4. Control communication is a circuit.
5. Emergency sockets will be provided along the cable route at every approximately to which the portable control telephones are to be plugged to communicate.
6. Remote control is meant for remote operation of the Traction equipments, which works on principle.
7.is a special control circuit used for efficient maintenance of the overhead traction equipment and its operation.
8.is another special control circuit operated by traction loco controller, who is responsible for movement of electrical locomotives
9.of frequency within the voice band, which are harmonically..... are used in DTMF calling.
10. A maximum of Way Stations can be connected in control circuit.
11. The system is readily adaptable for patching to any channel over UHF, VHF, microwave or OFC networks without any special arrangements for patching.
12. The control office equipment is normally designed for 4-Wire operation. But it can be converted for 2-Wire operation by providing a circuit.
13. In control telephone, the facility to repeat the last code transmitted by pressing one single push button designatedshall be provided.
14. In control telephone, a single push button designatedby repeatedly sending the last transmitted code after every 4.5 seconds.
15. It should be possible to cancel the first digit within 5 seconds by pressing a single push button designated in control telephone.
16. Facility to reset the system should be provided by pressing one single push button designated..... in control telephone.
17. Facility to check the row /column frequency shall be provided by pressing push button designatedfor test mode in control telephone.
18. One general call key -and long ring key -.... For group call and general call the same key is to be pressed..... in control telephone.
19. System at the way station shall work on power supply.
20. When circuits are through underground cables, taps are provided from the underground cable at intervals of about 1 KM and these are terminated on..... equipment.
21. amplifier provides side tone to enable the conversation between way stations in control communication.

22. Leak amplifiers will be provided at main repeater for all circuits exceptcontrol circuit.
23. amplifier works as interface between the main cable and branch line cable shunted with high impedance.
24. In 4 wire control communication, signals can be superimposed by usingcircuit and can be converted into 2 wire by using Circuit.
25. In 4 wire control communication, adjacent stations can speak through leak amplifier and provided at.....
26. Loop resistance of 0.9 mm copper cable is.....
27. Transmission loss of RE cable when loaded is &when not loaded.
28. In RE area, electromagnetic induction is due toand it can be minimized by providingat every 17 Kms.
29. ACSR full form is& no of conductors are
30. PET quads are used forcircuits in RE main cable.
31. Length of loading section in RE area is
32. In a Main RE cable size: 0+18+2, number of PET quads:.....
33. Distortion less condition occurs in a cable when.....
34. Repeater to repeater distance in RE area is
35. Maximum capacitance unbalanced permitted in a quad cable for full loading section is ...
36.cables are used for indoor wiring.
37. Condensor are connected to reduce
38.measures the unbalance of the capacitance.
39.is a method of decreasing noise.
40. Phantom connection: one extra pair is used forin RE main cable
41. In RE area quad number 3 in 6Quad is nominated for.....
42. Value of loading coil in 6Quad cable is.....
43. Coaxial cable is used for..... communication.
44. When 6 quad cable is laid parallel to OFC, the block circuit is taken through.... quad of 6Quad.
45. Communication is made through quad 4/2 of 6Q.
46. Minimum distance of cable trench from the centre of the track in RE area is.....
47. The cable route indicators are to be placed at every.....
48. Minimum depth of cable under the railway track crossing below the rail level is.....
49. Transposition in cable reduces.....
50. Aluminum canister is used in cable jointing forprotection.
51. Periodicity of cross talk test is& Insulation test is.....
52. For testing NEXT(Near end cross talk):distance & FEXT(Far end cross talk):distance is required.

53. Resistance of conductor isproportional to the length of conductor and proportional to cross section of the conductor. At distance increases, the insulation of cable.....
54. Main difference between RE main cable & 6Quad is in 6Quad cable and for jointing 6 quad cable kit is used.
55. fiber is best designed for longer transmission distances.
56. Multi mode fiber is best designed fortransmission distances.
57. The loss offered by a mechanical splicing of optic fibers is.....
58. The loss offered by a fusion splicing of optic fibers shall not exceed.....
59. During installation, min length of optic fiber cable in each end is coiled in the jointing pit.
60. Scattering limits the use of wavelength below nm.
61. Zero dispersion occurs in..... wavelength.
62. In OFC, drum length is about....., in copper cable: ...
63. The wavelength at which fiber has its max information carrying capacity atdispersion.
64. Transducer convertsenergy intoenergy.
65.microphones are velocity operated type, used in stage performance.
66. A low frequency speaker which reproduces low freq notes is called.....
67. A high frequency speaker which reproduces high freq notes is called.....
68. Horn type loudspeaker is used in..... application.
69.type loudspeaker is a direct radiator.
70. Horn type loudspeaker is aradiator.
71. High fidelity (Hi Fi) speakers are used to reproduce the frequency range of.....
72. Loudspeaker convertsenergy toenergy.
73. In normal operating condition, SPL should be maintained.....
74. LMT (Line matching Transformer) is used in matching method.
75. The S/N ratio under normal operating condition of the amplifying systems shall not be worse than.....
76. MLDB & AGDB are faced train indication board and CGDB & PDB are faced train indication board.
77. CGDBs are connected in chain fashion.
78. Nos of inputs and outputs of MDCH & PDCH &
79.port is connected from point to point communication of PDCH to Board.
80.port is connected from CCU to MDCH.
81. Class type protection is required for main & at a glance display board.
82. DVR (Digital Video Recorder) can accommodate Nos of cameras maximum.
83. For Eastern Railway: uplink frequency used for GSM-R is:MHZ. & downlink: MHz.
84. In GSM-R, IMSI no is used for the identification of the
85. The multiplexing process is used in GSMR is

86. In GSM-R, broadcasting of variety of information to mobile subscribers through
87. VSAT supports traffic capacity of
88. Slot-12 and slot-13 has equal and parallel access to time slotsin WEBFIL mux.
89. V mux is equipped with the required interfaces for& channels.
90. In V mux, Slot 13 is allotted to
91. In V mux, conference card can provide up to four party conferences.
92. Resistivity of wet soil is
93. Class B SPDs operate on principle.
94. Class B SPDs are to be provided between neutral to
95. The date and power supply lines to electronic equipment need to be provided withprotection.
96. Size of conductor connecting
 - a) Class B SPD shall besq.mm
 - b) Class C SPD shall besq.mm
97. Loop earth is constructed using more than earth pits.

B. Write True/False of the following:

1. The display between the arrival time of different light rays at the output of a fiber while travelling through the fiber is known as dispersion. (T/F)
2. In graded index fiber dispersion is reduced due to variation of refractive index in the core of the fiber.(T/F)
3. OFC is in the infra red region.(T/F)
4. During total internal reflection, angle of refraction should be greater than critical angle.(T/F)
5. Ferrule of optic fiber connectors are made of metal/ceramic/plastic materials.(T/F)
6. Optical power meter has got the option for displaying optical power in DBM or MWatt.(T/F)
7. OTDR works on the principle of back scattering of light. (T/F)
8. Refractive index of core > cladding in optic fiber.(T/F)
9. SMSI have higher fiber attenuation than MMMI in optic fiber.(T/F)
10. In multi mode fiber, attenuation is 2.5-3.5 db/Km at 850nm, in single mode: 0.35 db/km at 1310 nm, 0.25 db/km at 1550 nm.(T/F)
11. The normal operating current of laser source is about 70mA.(T/F)
12. Macro bending loss: depends upon bending/laying of the cable.(T/F)
13. Micro bending loss: due to micro deformaties at the fiber.(T/F)
14. The main drawback of OFC is no tapping. (T/F)
15. In PA system, Loudness level measured in phon. (T/F)
16. Input of microphone is 0.3-3.4 KHz. (T/F)
17. Bass is high frequency control. (T/F)
18. Treble is high frequency control. (T/F)
19. NVR is used in IP enabled CCTV. (T/F)
20. Touch screen is mouse emulation type. (T/F)
21. Call back facility is provided in IVRS. (T/F)
22. CCTVs are non interactive information system (T/F)
23. Call center based IVRS is a non interactive information system. (T/F)
24. Visibility of train indication board must be 70 to 100 mtrs. (T/F)
25. NVR (Network Video Recorder) is used in IP based surveillance system (T/F)
26. In GSM-R, the visitor location register (VLR) memorizes information about the subscriber physically present in a geographic area. (T/F)
27. In GSM-R, IMSI stored in HLR and in VLR temporarily. (T/F)
28. In GSM-R, EIR (Equipment Identity Resistor) is a list of all the mobile equipments. (T/F)
29. In GSM-R, International mobile subscriber identity (IMSI) contains MCC(Mobile Country Code), MNC (Mobile Network Code) and MSIN (Mobile Subscriber Identification Number). (T/F)

30. In GSM-R, MSISDN (Mobile Subscriber ISDN Number) consist of CC (country code), NDC (National Destination Code) & SN (Subscriber number). (T/F)
31. In GSM-R, BTSs are connected with MSC. (T/F)
32. In GSM-R, OMC-R is operation & maintenance center for MSC. (T/F)
33. In GSM-R, only Inter BSC hand over takes place. (T/F)
34. In GSM-R, MSRN is used for routing incoming call from different network.(T/F)
35. In GSM-R, an Erlang is the percentage of time a subscriber uses his phone. (T/F)
36. In GSM-R, the carrier frequency is designated by the absolute radio frequency channel number. (ARFCN) (T/F)
37. In GSM-R, the interface in between BTS & BSC is called Abis. (T/F)
38. In SPIMX module of Fibcom 6325, a combination of STM-1 and STM-4 capacity can be used. (T/F)
39. Class B protection is provided at main distribution panel. (T/F)
40. Surge rating is taken care by class C protection is 50KA, 8/20 micro sec pulse. (T/F)

C. Choose the correct answer:

1. Which topology requires a multipoint connection?
a) Mesh b) Star c) Bus d) Ring
2. is a collection of many separate networks.
a) WAN b) An intranet c) a LAN d) None of the above
3. When a host on network A, sends a message to a host on network B, which address does the router look at?
a) Port b) Logical c) Physical d) None of the above
4. The layer is responsible for moving frames from one hop (node) to the next.
a) Physical b) Data Link c) Transport d) None of the above
5. In encoding, we use three levels: positive, zero and negative.
a) Unipolar b) Bipolar c) Polar d) None of the above
6. When data and acknowledgement are sent on the same frame, this is called
a) Back packing b) Piggy packing c) Piggy backing d) A good idea
7. The shortest frame in HDLC protocol is usually the frame.
a) Information b) Management c) Supervisory d) None of the above.
8. Which error detection method uses ones complement arithmetic?
a) Simple parity check b) Checksum c) Two – dimensional parity check d) CRC
9. Which error detection method involves polynomials?
a) CRC b) Simple parity check c) Two dimensional parity check d) checksum
10. If an Ethernet destination address is 07-01-02-03-04-05, then this is a Address.
a) Unicast b) Broadcast c) Multicast d) Any of the above.
11. Which layer produces the OSPF message?
a) Data link b) Transport c) Application d) Network
12. OSPF is based on
a) Distance vector routing b) Path vector routing c) Link state routing d) (A) and (B)
13. RIP is based on
a) Link state routing b) Dijkstra's algorithm c) Path vector routing d) Distance vector routing
14. ADSL modem uses modulation method
a) QAM+FDM b) FDM+FSK c) TDM+FSK d) All above
15. IEEE standard for WLAN is
a) 802.11 b) 802.2 c) 802.3 d) 802.10
16. BSSID of access point is
a) 48 bit IP address b) 32 bit MAC address c) 48 bit MAC address d) None of the above.
17. VLAN is a grouping of computers in a network.
a) Logical b) physical c) both d) none
18. 10 base T is implementation on
a) Co-axial cable b) Wireless c) OFC d) UTP/STP
19. Ethernet provides access to the network using
a) TDM b) TDMA c) CSMA d) CSMA/CD
20. The standard compliant & cost effective solution for connecting LAN, switch & Router at remote site for PRS-UTS integration is
a) Statmux b) Terminal Server c) DCM d) NeTS
21. Subnet mask used for Railnet is

- a) 255.0.0.0 b) 255.255.0.0 c) 255.255.255.0 d) none of the above
22. Architecture of FOIS network is based on
a) Star b) Mesh c) Mixed (Star + Mesh) d) None
23. The Dynamic protocol used for unification of PRS & UTS is
a) RIP b) OSPF c) IGRP d) None
24. Topology used for PRS & UTS unification is
a) Inverted Tree b) Partial Mesh c) Mesh d) Combination of a & b
25. SS7 is signaling.
a) Out band b) CAS c) CCS d) combination of a) & c)
26. What is the loop resistance of 0.5 mm copper cable?
a) 170ohm b) 180 ohm c) 190 ohm d) 200ohm
27. Which is a peripheral card?
a) LCC b) CNF c) E&M d) TWT
28. The working voltage of telephone exchange is
a) -48VDC b) -52VDC c) -54VDC d) -56 VDC
29. The ringing voltage of exchange is
a) 75V/25Hz b) 85V/25Hz c) 95V/25Hz d) 100V/25Hz
30. Which of the following is a control card?
a) XSC b) LCC c) E&M d) TWT
31. Which of the following is a service card?
a) CNF b) XSC c) E&M d) TWT
32. Which card supports tone dialing?
a) CNF b) RMF c) TGD d) XSC
33. numbers of AUGs can be multiplexed into an STM-4
(a) four (b) Two (c) eight (d) six
34. The type of optical connector used in ADM / TM modules in FIBCOM AC-1 family is a)
LC/PC (b) ST/PC (c) FC/PC (d) BNC
35. The Modules of the network element hold the embedded application software for the whole network element in a permanent storage medium in FIBCOM AC1 family.
a) TEX-1 (b) RI-1 (c) LI-1 (d) ADM/TM
36. Operating wavelength for S-1.1 and L-1.1 application isnm in FIBCOM AC-1 family.
(a) 1280-1335 (b) 1300-1310 (c) 1500-1550 (d) None
37. The Fibcom 6325 Node the number of slots made available for traffic modules is .
(a) Four (b) Five (c) Three (d) Nine
38. In Fibcom 6325, Node the Optical connectors used are of the type
(a) FC (b) SC (c) LC (d) All the three
39. In Fibcom 6325 Node CMCC module is responsible for
(a) Management of the system (b) Interfacing the STM ports
(c) Transporting the Fast Ethernet data of the user
40. SIMX-4 Module of Fibcom 6325 node provides number of optical ports.
(a) Four STM ¼ (b) Four STM-1 only (c) Four STM-4 only (d) Four STM-16
41. PIM1 module can be installed in slot No. of Fibcom 6325 node.
(a) 6 (b) 9 (c) 8 (d) 2

42. TE31 is a port card which provides line interface to an E3/DS3 rates in both add and drop directions of all Tejas STM-1/4 systems.
 (a) One port (b) Two port (c) Three port (d) Four port
43. TE31 card can be plugged into any of the slots from of the TJ100MC-1 chassis.
 (a) 1 to 4 (b) 4 to 8 (c) 10 to 14 (d) 1 to 14
44. The TP01 tributary interface card of TJ100MC-1 system provide line interfaces to 10/100 Mbps signals.
 (a) Four (b) Six (c) Eight (d) Ten
45. The maximum power consumed by a TPO1 card of TJ100MC-1 system is
 (a) 8 W (b) 18 W (c) 28 W (d) 12 W

D. Write full forms of the following:

1. SCADA: Supervisory Control and Data Acquisition Systems
2. ISDN: Integrated Services Digital Network
3. SMPS: Switched-Mode Power Supply
4. MTBF: Mean Time Between Failures
5. OTDR: Optical Time Domain Reflectometer
6. VSAT: Very Small Aperture Terminal
7. PIJF : Polythene Insulated Jelly Filled
8. DTMF: Dual Tone – Multi Frequency
9. RDSO: Research Design & Standards Organisation
10. MTRC: Mobile Train Radio Communication
11. CRIS: Centre for Railway Information Systems
12. CRC: cyclic redundancy check
13. COIS: Coaching Operation Information System
14. VLAN: Virtual Local Area Network.
15. HDB-3 : High-Density Bipolar Order 3
16. TDM: Time-division multiplexing
17. TCP/IP: Transmission Control Protocol/Internet Protocol
18. Wi Fi: Wireless-Fidelity
19. OLTE: Optical Line Transmission Equipment
20. ACSR: Aluminium conductor steel-reinforced
21. CCTV: Closed Circuit Television
22. UTS: Unreserved Ticketing System
23. RMS : Rake Management System
24. STM : Synchronous Transport Module
25. IVRS: Interactive Voice Response System
26. SPD : Surge Protection Device
27. HTTP: Hypertext Transfer Protocol
28. DSLAM: Digital Subscriber Line Access Multiplexer
29. SPART: Self propelled accident relief train
30. IVRS: Interactive Voice Response System
31. GUI: Graphical user interface
32. RFID: radio frequency identification.

33. POET: passenger operated enquiry terminal
34. NTES: National Train Enquiry System
35. NVR: Network video recorder
36. MLDB: Main Lighting Distribution Board
37. AGDB: At a Glance Display Board
38. CGDB: Coach Guidance Display Board.
39. PSTN : Public switched telephone network
40. MDCH: Main Data Communication Hub
41. PDCH : Platform Data Communication Hub
42. GPRS : General Packet Radio Service
43. IPIS: Integrated Passenger Information System
44. IMEI: International Mobile Equipment Identity
45. IMSI : International Mobile Subscriber Identity
46. TMSI: Temporary Mobile Subscriber Identity
47. MSRN: Mobile Subscriber Roaming Number
48. ARFCN: Absolute Radio Frequency Channel Number.
49. HDLC: High-Level Data Link Control
50. SSID : Service Set Identifier
51. SFP: Small form-factor pluggable
52. CONCERT: Country-Wide Network For Computerized Enhanced Reservation
And Ticketing
53. SLIC : subscriber line interface card,
54. EMAP : Ethernet Mapping.
55. MEEB: Main Equipotential Earth Bassbar
56. TME: Tributary Module Equipment.
57. eMLPP : enhanced Multilevel Precedence and Preemption.
58. CMCC: Central Management Control Card.
59. LTC: Lite Tributary Card.
60. SONET: Synchronous Optical Network.

ANSWER SHEET

A. Fill in the blanks:

1. Selective
2. control telephone&DTMF Decoder
3. encoder
4. Omnibus
5. 1Km
6. 25 KV & SCADA
7. Traction power control
8. Traction loco control
9. Two tones&unrelated
10. 99
11. Voice
12. Hybrid
13. RT
14. LR
15. DL
16. RS
17. RC
18. G , LR&twice
19. 12 V DC
20. 6-pin socket
21. Leak
22. Remote
23. Buffer
24. Phantom& hybrid
25. terminal repeater
26. 56 ohm/Km
27. 0.25 dB/KM. & 0.63 dB/Km
28. length of Parallelism&isolation transformer
29. Aluminium Conductor Steel Reinforced &07
30. Block
31. 1830 mtr
32. 02
33. LG=RC
34. 40 to 50 Km
35. 40pF
36. SWBD
37. crosstalk.
38. CUM (Capacitance unbalance Measuring Kit)

39. Poling
40. Signaling
41. EC circuit
42. 118mH
43. high speed data
44. first
45. LC gate
46. 5.75 mtrs
47. 20 mtrs
48. 1.65 mtrs
49. induced emf
50. mechanical
51. quarterly&yearly
52. 1 mtr&02 mtr
53. directly&inversely&decreases
54. PET quads&TSF
55. Single mode
56. Shorter
57. < 0.5 dB
58. 0.2 dB
59. 10mtr
60. 800
61. 1310 nm
62. 3 Km&500m.
63. Zero
64. Acoustic& electrical
65. Ribbon
66. Woofer
67. Tweeter
68. Outdoor
69. Cone
70. Indirect
71. 50 Hz to 12 KHz
72. Electrical&acoustic
73. 70 to 80 DB
74. Voltage
75. 50 DB
76. Single& double
77. Daisy
78. 2 & 16

- 79. RS 485
- 80. RS232
- 81. C
- 82. 32
- 83. 913.3 to 914.9&958.3 to 959.9
- 84. SIM
- 85. TDMA
- 86. BCCH
- 87. 9.6 Kbps to 2 Mbps
- 88. 30 &31
- 89. Voice& Data
- 90. GMAP
- 91. 15
- 92. 10 ohm meter
- 93. arc chopping
- 94. each phase & earth
- 95. class D
- 96. 16&6
- 97. One

B. True/False:

- 1. T
- 2. T
- 3. T
- 4. T
- 5. T
- 6. T
- 7. T
- 8. T
- 9. F
- 10. T
- 11. T
- 12. T
- 13. T
- 14. T
- 15. T
- 16. T
- 17. F
- 18. T
- 19. T
- 20. T

21. F
22. T
23. F
24. T
25. T
26. T
27. T
28. T
29. T
30. T
31. F
32. F
33. F
34. T
35. T
36. T
37. T
38. F
39. T
40. T

C. Multiple Choice Answer:

1. C)
2. B)
3. B)
4. B)
5. B)
6. C)
7. C)
8. B)
9. A)
10. B)
11. D)
12. C)
13. D)
14. A)
15. A)
16. C)
17. A)
18. D)
19. D)

- 20. D)
- 21. B)
- 22. C)
- 23. B)
- 24. D)
- 25. D)
- 26. B)
- 27. C)
- 28. A)
- 29. A)
- 30. A)
- 31. A)
- 32. B)
- 33. A)
- 34. C)
- 35. D)
- 36. B)
- 37. B)
- 38. C)
- 39. A)
- 40. A)
- 41. D)
- 42. A)
- 43. C)
- 44. C)
- 45. A)

D. Full Forms:

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