

SOUTHERN RAILWAY
Madurai Division
Signal and Telecommunication Branch
Question Paper for JE/II Tele, LDCE

Date: 08.09.2012

Duration : 3 Hrs.

Total : 100 Marks

INSTRUCTIONS TO CANDIDATES:

1. Candidates should write their name, designation, office, roll number/staff number etc. only in the space provided in the fly leaf and not in any of the page in the answer books or additional sheets.

2. Any names/roll numbers if found in the answer books or additional sheets, such papers will be disqualified.

3. In the answer to the objective type questions, no corrections of any type is permitted. in case any correction is made, that answer shall not be evaluated at all for example , corrections made in the objective type questions like:-

- A) cutting
- B) overwriting
- C) modifying the answer in any way

will not be evaluated at all.

SECTION A (50 marks)

Answer All Questions

I. True or False (Each 1 mark) 10 marks

1. For transmission and receiving, separate fibres are used in OFC. (TRUE/FALSE)
2. On open line railway employee can avail 10 day CL in a year. (TRUE/FALSE)
3. In HOER , JE/Tele comes under intensive category (TRUE/FALSE)
4. Frequency allotted for guard/driver/SM on walki-Talki set is 161.15 MHz. (TRUE/FALSE)
5. Southern railway widely uses multimode fibre for optical communication. (TRUE/FALSE)
6. In a section with 6 quad cable and ofc , second Quad is used for block working. (TRUE/FALSE)
7. The working voltage of electronic exchange is 100V D.C. (TRUE/FALSE)
8. End voltage of discharged LA cell is nearly 1.85 V. (TRUE/FALSE)
9. In 30 Channel PCM system the time duration for one frame is 125 milli sec. (TRUE/FALSE)
10. Bit rate of E3 is 139.264 Mbps. (TRUE/FALSE)

II. Fill in the blanks (each 1 mark) 20 marks

1. In STM-1 _____ Nos. of E1's can be drawn.
2. When 6 Quad is laid along with OFC, _____ Quad is used for EMC circuit.
3. When Quad cable is loaded, the attenuation of the 0.9 mm dia conductor of the cable is _____.

4. The earth value of all electronic equipments like SDM-1, digital microwave, ISDN Exchange etc., should be less than _____.
5. _____ Transformer is used for EMC circuit.
6. The output of VHF set installed at every station is _____ watts.
7. There are _____ time slots in a primary mux.
8. If an employee is transferred from one place to another on his own request, he can avail _____ days as joining time.
9. The first time slot is allotted for _____ in primary mux.
10. Maximum validity period that can be mentioned in EDP while issuing is _____.
11. In OFC, the permissible splice loss per splice is _____ dB.
12. In _____ system, one E1 stream can be directly taken for STM16, without demultiplexing.
13. There is no accumulation of noise over microwave hops, since digital microwave is of _____ type.
14. For imposing minor and major penalty, Standard Form No. _____ and _____ are used.
15. _____ matching is used in PA systems at Platforms.
16. In cables due to _____ fault there will be hum & noise on the line.
17. The maximum number of station can be called by DTMF HQrs. Equipment by selective calling method is _____.
18. In 6 pin EC socket Tx pair is connected in _____ pins and Rx pair in _____ pins.
19. With increase in frequency the loss in coaxial cable _____.
20. In an Electronic Exchange the subscriber can be provided upto loop resistance not exceeding _____ Ohms.

III. Match the following : Each carries $\frac{1}{2}$ marks 5 marks

	A	B
1	Lithium ion	OFC
2	line interactive	signalling
3	silicon	Battery
4	TMS	Microwave

5	Numerical Aperture	semiconductor
6	Yagi	Measuring instrument
7	SS7	ups
8	Circular Wave Guide	Antenna
9	spc	OTDR
10	Fault location/Splice loss	exchange

IV. Write the Full name of the following :- Each carries ½ marks 5 marks

1. VSAT
2. MODEM
3. NMS
4. IVRS
5. VOIP
6. DTMF
7. GSM-R
8. IRISSET
9. OTDR
10. SDH

V. Choose the best answer. Each 1 marks 10 marks

- 1) Specific gravity of the fully charged lead acid cell is _____ in terms of hydrometer reading
a) 1180 b) 1200 c) 1220 d) 1280
- 2) _____ set of privilege pass in an year is issued to Railway employee who has less than 5 years qualifying service.
a) 2 b) 1 c) 4 d) 3
- 3) The maintenance schedule for inspection of exchange by JE/Tele is _____
a) every 15 days b) once in a month c) once in 3 month d) once in 6 month
- 4) The working voltage of DTMF Way Station Equipment is _____
a) -- 48V DC b) +48V DC c) +12 VDC d) +3VDC
- 5) The following are passive devices.
a) resistor b) capacitor c) inductor d) all

- 6) _____ is having least resistivity.
a) Copper b) Gold c) Silver d) Iron
- 7) _____ charging is used to compensate self discharge of battery.
a) Boost b) Float c) Trickle d) Equalizing
- 8) Diameter of core in single mode fibre is _____ than multi mode fibre.
a) more b) less c) equal d) double
- 9) IPDSLAM is used for providing _____ in southern railway.
a) OFC b) auto phone c) railnet/internet d) PRS
- 10). The principle of transmission in OFC is
a) total internal reflection. b) refraction c) diffusion d) electrical

SECTION B 50 marks

Answer any five Questions (Each carry ten marks)

1. What is the role of SE/JE Tele incharge at accident site? What are the different communication system provided at accident site and their use.
2. (a) Explain with block diagram the 4 Wire DTMF control working . What are the advantages of DTMF control working over conventional control working
(b) Explain the working of Emergency control Circuits with the help of block diagram of Six pin Socket
3. (a) What do you understand by computer networking Where is it being used in railway.
(b) Explain with diagram the Networking with three location in same building spaced at 75 Mtrs. & 150 Mtrs. from main location.
4. Describe PRS working showing connectivity diagram.
5. (a) Explain with block diagram the working of any SPC electronic exchange or ISDN exchange
(b) Describe the advantage of OFC cable over U/G Copper cable
6. (a) Write any ten passenger amenities provided in MDU Division.
(b) Write any ten telecommunication items to be kept in ART as per Railway Board's order.

7. Write short notes on any TWO of the following:

- 1 TDM
- 2 Transposition
- 3 Equalizer amplifier
- 4 ISDN

8. Write and explain in detail about the different type of joint in quad cable.

9. (a) Briefly explain "Hours of Employment regulations" for TCM and supervisor.
(b) What are the minor penalties.

10. (a) What are the incentive scheme for promoting "RAJBHASHA".

(b) Write the Hindi equivalent of the following words.

- (i) Approval (ii) Please speak (iii) Madurai (iv) Thanks

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