

**BSNL**  
**JTO(T) LICE**  
**Previous Year Paper**  
**02 June 2013**

**LICE from promotion From Grp. 'C' cadres to J.T.O.(T) cadre**

|             | SUBJECT                                                                                   | MARKS<br>Maxi Marks<br>-150                         | DAY &<br>DATE OF<br>EXAM. | TIME &<br>DURATION                         |
|-------------|-------------------------------------------------------------------------------------------|-----------------------------------------------------|---------------------------|--------------------------------------------|
| PART -<br>A | General English & General<br>Studies (Objective Multiple<br>Choice question) OMR<br>based | 50 marks. (50<br>question of<br>one mark<br>each)   | 02/06/2013<br>(Sunday)    | 10.0 A.M.<br>to<br>1.00 P.M.<br>(03 Hours) |
| PART -<br>B | Technical specialization<br>(Objective Multiple Choice<br>question) OMR based             | 100 marks.<br>(100 question<br>of one mark<br>each) |                           |                                            |

Note:- There would be negative marking and for each wrong answer, 25% of the mark of that question would be deducted.

**PART – A**

General English- 25 marks

*Directions: Read the following passage and examine each inference it in the context of this passage. Mark answer (a) if the inference is definitely true; (b) if the inference is probably true; (c) if the inference is probably false and (d) if the inference is definitely false.*

**PASSAGE:** The Bauxite deposits in India are widely distributed. Recently deposits in Orissa have been developed and the largest plant of its kind in Asia has been set up to produce Alumina and Aluminum. It uses the latest French technology. The ore is exported to Japan and European countries. In 1987, the output of Bauxite was 2.6 million tonnes. The country's reserves are estimated at 270 million tonnes, of which 73 million tonnes are of high quality.

- Q.1. The plant set up in Orissa is the largest in India.  
Q.2. Aluminum is exported to Japan and European countries.  
Q.3. Orissa is the largest producer of bauxite in India.  
Q.4. The plant in Orissa was set up by financial aid from France.  
Q.5 27% of total reserves of bauxite ore is of high quality.

*Directions: Each of the following sentences has a blank space and four words given after the sentences. Select whichever word you consider most appropriate for the blank space and indicate your choice on the Answer sheet.*

- Q.6. Fact is often stranger than .....  
(a) fancy (b) fiction (c) imagination (d) dream.
- Q.7. Disease are easily ..... through contact with infected animals.  
(a) transferred (b) transported (c) transmitted (d) transplanted.
- Q.8. Traders and businessmen from Japan have ..... the world markets of electronic goods by adopting low cost strategy.  
(a) exhausted (b) captured (c) arranged (d) grasped.

Q.9. The shirt is not expensive, I bought it very .....

- ☒ (a) cheaply    (b) low    (c) dearly    (d) cheap.

Q.10. They are refugees in need of .....

- (a) restoration    ☒ (b) rehabilitation    (c) recapitulation    (d) renovation.

*Directions: each of the following words printed in bold is followed by four options. Pick out the right choice from them, which is close to its meaning.*

Q.11. **PARAGON**

- (a) square    (b) beauty    (c) model    (d) virtue.

Q.12. **TIMID**

- ☒ (a) fearful    (b) veteran    (c) plucky    (d) tasteless.

Q.13. **SUPERB**

- (a) questionable    ☒ (b) majestic    (c) wretched    (d) dismal.

Q.14. **FORECAST**

- (a) devise    (b) rustic    (c) coarse    ☒ (d) predict.

Q.15. **SIMULATE**

- (a) pretend    (b) stimulate    (c) devoid    ☒ (d) calculate

*Directions: The following questions have a statement followed by four words. Select the word which is closest in meaning to the statements.*

Q.16. Man having many wives at one and the same time -

- (a) polyandrous    (b) polygamous    (c) matrimony    ☒ (d) pseudonym

Q.17. murder of father -

- ☒ (a) patricide    (b) homicide    (c) fratricide    (d) illegal.

Q.18. One who thinks only of oneself -

- (a) egotist    (b) selfless    ☒ (c) egoist    (d) panacea.

Q.19. The biography of a man written by himself -

- (a) bibliography    (b) preface    (c) euphoria    ☒ (d) autobiography.

Q.20. A long distance race -

- (a) run    ☒ (b) marathon    (c) martyr    (d) running.

*Directions: Look at the underlined part of each sentence. Below each sentence are given below four possible substitutions for underlined part. Choose the better one and indicate your response on answer sheet.*

Q.21. If he would have tried, he would have succeeded.

- (a) is tried    (b) was tried    ☒ (c) has tried    (d) No improvement suggested.

Q.22. He was fined for careless driving.

- (a) got fined (b) fined (c) was to be fined ☒ (d) No improvement suggested.

Q.23. I will not go to the school if it shall rain tomorrow.

- (a) it would rain tomorrow (b) it will rain tomorrow  
☒ (c) it rains tomorrow (d) No improvement suggested.

Q.24. I have lived in Delhi since I was four.

- ☒ (a) am living (b) lived (c) has lived (d) No improvement suggested.

Q.25. Johan had told me that he hasn't done it yet.

- ☒ (a) told (b) tells (c) was telling (d) No improvement suggested.

General studies – 25 Marks

Q. (26-31) A.K. Publishers is conducting a seminar of seven engineering subjects, name Civil engg. (CE), Mechanical engg. (ME), Electrical engg. (EE), Electronics and Communication (EC), Mining and Machinery (MM), Industrial engg. (IE), and Petroleum engg. (PE) from 3<sup>rd</sup> January to 10<sup>th</sup> January. 4<sup>th</sup> January is a holiday.

The seminar should end with ME. IE should be previous day of PE. EE should be immediately after holiday. There should be a gap of exactly one day between MM and PE. There should be a gap of exactly two days between CE and MM, with CE occurring before MM. On the basis of these, choose the correct answer:

Q.26. The seminar will start with:

- (a) CE (b) IE (c) EC (d) MM.

Q.27. Which subject will be on 6<sup>th</sup> January?

- (a) CE (b) MM (c) IE (d) EE.

Q.28. Which subject precedes EC?

- (a) CE (b) EE (c) PE (d) IE.

Q.29. How many days gap is there between CE and EC?

- (a) 2 (b) 3 (c) 4 (d) 5.

Q.30. Which subjects follows by EE?

- (a) CE (b) MM (c) ME (d) EC.

Q.31. How many days gap is there between EC and ME?

- (a) 1 day (b) 2 days (c) no gap (d) either (a) or (b).

Q.32. Who is present vice president of India?

- (a) Mr. Salman Khurshid ☒ (b) Mr. Hamid Ansari  
(c) Mr. A.P.J. Abul kalam (d) Mr. Farooq Abdulla

Q.33. 'Golden Temple' is situated in which city of India?

- (a) Chandigarh ☒ (b) Amritsar (c) Gurdaspur (d) New Delhi.

Q.34. 'Bihu' is celebrated in which part of India?

- ☒ (a) Assam (b) Punjab (c) Orissa (d) Maharashtra.

## PART – B

### Technical Paper-(Specialization)- 100 marks

(Choose the correct answer)

Q.1. A byte is:

- (a) a group of 2 bits (b) a group of 4 bits ☒ (c) a group of 8 bits (d) a group of 16 bits.

Q.2. The input units of a computer:

- ☒ (a) feeds the data in CPU (b) retrieves data from CPU  
(c) directs all other units (d) all of these.

Q.3. Which of the following storage devices can be carried around?

- ☒ (a) Floppy disks (b) Main Memory (c) Registers (d) Core memory.

Q.4. Computer software consists of:

- (a) System programme (b) Application programme  
(c) Operating System programme ☒ (d) All of the these.

Q.5. 'C' language can be used on:

- (a) Only MS-DOS operating system (b) Only UNIX operating system  
(c) Only Xenix operating system (d) All of these.

Q.6. ARP (Address Resolution Protocol) is:

- (a) A TCP/IP protocol used to dynamically bind a high level IP address to a low level physical hardware address. (b) A TCP/IP high level protocol for transferring files from one machine to another. (c) A protocol used to monitor computers (d) A protocol that handles error and control messages.

Q.7. Which of the following TCP/IP protocol is used for transferring files from one machine to another?

- (a) RARP (b) ARP ☒ (c) TCP (d) FTP.

Q.8. In IPv4, how many bit internet addressing is used?

- (a) 16 bit (b) 32 bit (c) 64 bit (d) 128 bit.

Q.9. Full duplex operation:

- (a) requires two pairs of cable ☒ (b) can transfer data in both direction at once  
(c) requires modems at both end of the circuit ☒ (d) all of these.

Q.10. These are privately owned networks within a single building or campus:

- (a) LAN ☒ (b) WAN (c) MAN (d) none of these.

Q.11. Which of the following is an operating system?

- (a) MS WORD (b) GOOGLE (c) JAVA ☒ (d) WINDOWS.

Q.12. Match List I and List II and give the answer using the code:

| List I                               | List II                     |
|--------------------------------------|-----------------------------|
| (Symbol in JAVA comparison operator) | (Meaning)                   |
| A. ==                                | 1. Greater than or equal to |

- B.  $\neq$  2. Equal  
 C.  $>=$  3. Not equal

Codes:

|     | A | B | C |
|-----|---|---|---|
| (a) | 1 | 2 | 3 |
| (b) | 3 | 2 | 1 |
| (c) | 1 | 3 | 2 |
| (d) | 2 | 3 | 1 |

Q.13. How many layers are there in TCP/IP model?

- (a) 7 (b) 4 (c) 2 (d) 12.

Q.14. A MEGGAR is used for measuring:

- (a) Voltage (b) Resistance (c) Current (d) Power.

Q.15. A Multi-meter is used to measure:

- (a) Resistance (b) Current (c) Voltage (d) All of these.

Q.16. Digital instruments are those which:

- (a) have numerical read-out (b) use LED or LCD display  
 (c) have a circuitry of digital design (d) use deflection type meter movement.

Q.17. A Voltmeter using thermocouples measures:

- (a) RMS value (b) peak value (c) average value (d) peak to peak value.

Q.18. A radio frequency voltage is measured by:

- (a) Rectifying the voltage (b) Amplifying the D.C. output voltage (c) measuring the D.C. output voltage of amplifier (d) by combined operation in (a), (b), and (c).

Q.19. The storage battery used in power stations and substations is generally:

- (a) Nickel Cadmium battery (b) Lead acid battery  
 (c) Zinc Carbon Battery (d) Zinc carbon or Lead Acid Battery.

Q.20. In storage battery, cells are connected in series to increase:

- (a) Current rating (b) both Voltage and Current rating (c) the life of cell (d) Voltage rating.

Q.21. The capacity of a battery is expressed in terms of:

- (a) Current (b) Voltage (c) AH (Ampere-Hour) (d) current and voltage.

Q.22. The resistance of 230 V, 100 W lamp is:

- (a) 529  $\Omega$  (Ohm) (b) 2300  $\Omega$  (c) 5290  $\Omega$  (d) 23  $\Omega$

Q.23. An A.C. circuit has two branches in parallel. The current in one branch is 5A. Then the current source:

- (a) must be less than 5A (b) must be more than 5A  
 (c) may be equal to or more or less than 5A (d) 5A.

Q.24. The current rating of a cable depends on:

- (a) length of cable (b) diameter of cable  
 (c) both length and diameter of cable (d) None of these.



Q.25. A capacitor having capacitance  $C$  is raised to voltage  $V$ , the energy stored will be:  
(a)  $CV^2$  (b)  $V^2/C$  (c)  $0.5 CV^2$  (d)  $0.5 C^2V$

Q.26. A sinusoidal voltage has peak to peak value of 100 V. The RMS value is:  
(a) 50 V (b) 70.7 V (c) 35.35 V (d) 141.41 V.

Q.27 The purpose of earthing electric appliances is:

- (a) to provide safety against shock (b) to ensure that appliances work satisfactorily  
(c) to ensure that appliances get full voltage (d) None of these.

Q.28. The (Voltage, Frequency) of single phase supply to residential consumers in India is:  
(a) 440 V, 60 Hz (b) 230 V, 50 Hz (c) 230 V, 60 Hz (d) 11KV, 50 Hz.

Q.29. If a fuse of higher than required current rating is employed in a circuit, it will:  
(a) blow more frequently since it carries more current (b) afford better protection to the circuit  
(c) seriously overload the circuit (d) lead to larger maintenance cost.

Q.30. An active network has:

- (a) an e.m.f. source (b) a current source (c) neither of these (d) either (a) or (b).

Q.31. Poor power factor:

- (a) reduces load handling capability of electrical system (b) results in more power losses in the electrical system  
(c) overloads alternators, transformers and distribution lines (d) all.

Q.32. For maximum transfer of power, internal resistance of source should be:

- (a) equal to load resistance (b) less than the load resistance  
(c) greater than the load resistance (d) none of these.

Q.33. Need of D.C. power supply for telecommunication equipment- due to following reason:

- (a) Harmonics of A.C. may affect the speech signals  
(b) Transistors and ICs etc. being unidirectional devices, the use of D.C. has become necessary  
(c) arranging stand-by source to A.C. is difficult compare to D.C. for which secondary cells can be used as stand-by source  
(d) all of the above.

Q.34. Positive logic in a logic circuit is one in which:

- (a) logic '0' and '1' are represented by zero and positive voltage respectively.  
(b) logic '0' and '1' are represented by positive and negative voltage respectively.  
(c) logic '0' voltage level is higher than logic '1' voltage level.  
(d) logic '0' voltage level is lower than logic '1' voltage level.

Q.35. Which of the following is not a type of flip-flop:

- (a) J-K (b) R-S (c) D (d) PLA.

Q.36. The MOSFET switch in its On State - may be considered as:

- (a) resistor (b) inductor (c) capacitor (d) battery.

Q.37. Which of the following is not a type of digital logic family:

- (a) ADC (b) DTL (c) TTL (d) CMOS.

Q.38. Decimal number '10' is equal to binary number:

- (a) 1110      ☒ (b) 1010      (c) 1001      (d) 1000

Q.39. A XOR gate has inputs A and B and output Y, then the output equation is:

- (a)  $Y=AB$       (b)  $Y=AB + \bar{A}B$       ☒ (c)  $Y= \bar{A}B + A\bar{B}$       (d)  $Y= A\bar{B} + \bar{A}\bar{B}$ .

Q.40. Which of these are universal gates:

- (a) only NOR      ☒ (b) only NAND      (c) both NOR and NAND      (d) NOR, NAND and OR.

Q.41. In a K-map (Karnaugh map), for an expression having "don't care terms" the don't care can be treated as:

- (a) 0      (b) 1      (c) 1 or 0      (d) none of these.

Q.42. The output of a full adder is:

- (a) SUM      (b) CARRY      ☒ (c) SUM and CARRY      (d) None of these

Q.43. The number of comparators required in a 3-bit comparator type ADC is:

- (a) 7      (b) 2      (c) 3      (d) 8.

Q.44. One Megabyte is equivalent to:

- ☒ (a)  $2^{10}$  bytes      (b)  $2^{20}$  bytes      (c)  $2^{30}$  bytes      (d) none of these.

Q.45. Which of the following is an example of volatile memory:

- (a) ROM      ☒ (b) RAM      (c) PROM      (d) Hard disk.

Q.46 Telephone traffic is measured:

- (a) with echo cancelers      (b) by the relative congestion  
(c) in terms of Grade of Service      ☒ (d) in erlangs.

Q.47. Identical telephone numbers in different parts of a country are distinguished by:

- (a) language digits      (b) access digits      ☒ (c) area codes      (d) central office codes.

✶ Q.48. The Nyquist rate of signal in samples/sec is:

- (a)  $f_{\max}$       (b)  $2 f_{\max}$       (c)  $1/ f_{\max}$       (d)  $1/2 f_{\max}$

✶ Q.49. In FM the carrier frequency deviation is determined by:

- (a) Modulating Voltage      (b) Modulating frequency  
(c) both modulating voltage and frequency      (d) none of these.

Q.50. In AM transmission- the frequency which is not transmitted, is:

- (a) Upper side band      ☒ (b) Lower side band      (c) Carrier frequency      (d) Audio frequency.

Q.51. PCM stands for:

- ☒ (a) Pulse Code Modulation      (b) Position Code Modulation  
(c) Position Carrier Modulation      (d) Pulse Carrier Modulation.

Q.52. FM broadcast band extends from:

- (a) 200 KHz to 1000 KHz      (b) 500KHz to 1600 KHz  
☒ (c) 3 MHz to 30 MHz      ☒ (d) 88 MHz to 108 MHz.



Q.53. Satellite earth station has:

- (a) only transmitting equipment (b) only receiving equipment  
(c) both receiving & transmitting equipment (d) none of these.

Q.54. The waiting time for telephonic conversation via communication satellite is of the order of:

- (a) 0.2 second (b) 0.54 second (c) 0.7 second (d) 0.96 second.

Q.55. Primary power source for satellite is:

- (a) nickel cadmium cells (b) solar cells (c) inverters (d) lead batteries.

Q.56. The range of a cordless telephone is about:

- (a) 1000 meter (b) 500 meter (c) 100 meter (d) 10 meter.

Q.57. A UPS contains:

- (a) rectifier (b) inverter (c) either rectifier or inverter (d) both rectifier and inverter

Q.58. In commercial FM broadcasting, a radio station is transmitting the signal at 98.3 MHz. It is:

- (a) Carrier frequency (b) modulation frequency  
(c) message frequency (d) channel frequency.

Q.59. In cell communication, cell stands for:

- (a) Geographical area (b) battery (c) location (d) no meaning.

Q.60. Nowadays almost all the telecom equipment works on:

- (a) 48 Volts A.C. (b) -48 Volts D.C. (c) 60 Volts A.C. (d) -60 Volts D.C.

Q.61. In optical fiber communication, following is used as source:

- (a) only LASER (b) only LED (c) LASER or LED (d) None of these.

Q.62. What can be used to extend transmission distance of fiber optic systems?

- (a) Electro-optical repeater (b) Optical fiber amplifier  
(c) Co-axial cable transmission (d) both (a) and (b) above.

Q.63. Unlike wires optical fiber are immune to:

- (a) Electromagnetic interference (b) signal losses  
(c) high frequency transmission (d) All of the above.

Q.64. In optical fiber communication signal are transmitted by:

- (a) light (b) sound (c) radio wave (d) none of these.

Q.65. LASER (Light Amplification by Stimulated Emission of Radiation) light is produced by:

- (a) stimulated emission (b) spontaneous emission (c) black magic (d) electricity.

Q.66. Intel 8086 is a:

- (a) 8 bit microprocessor (b) 16 bit microprocessor (c) 32 bit microprocessor (d) none of these

Q.67. Six bytes means:

- (a) 6 bits                      (b) 24 bits                      (c) 48 bits                      (d) 96 bits.

Q.68. A microprocessor contains:

- (a) most of the control and arithmetic logic function of a computer    (b) most of the RAM  
(c) most of ROM                      (d) peripheral drivers.

Q.69. A 32 bit microprocessor has the word length:

- (a) 2 bytes                      (b) 1 bytes                      (c) 4 bytes                      (d) 8 bytes.

Q.70. RAM stands for:

- (a) Relative Access Memory                      (b) Random Access Memory  
(c) Random Array Manager                      (d) Read Array Memory.

Q.71. At microwave frequencies the size of antenna becomes:

- (a) very large                      (b) large                      (c) small                      (d) very small.

Q.72. Due to curvature of earth, microwave repeaters are placed at a distance of about:

- (a) 10 KM                      (b) 50 KM                      (c) 150 KM                      (d) 250 KM.

Q.73. Following is primarily not used in microwave system:

- (a) TWT                      (b) Klystron Amplifier                      (c) Magnetron                      (d) p-n Junction diode.

Q.74. In n-type semiconductor:

- (a)  $n = p$                       (b)  $n < p$                       (c)  $n \gg p$                       (d)  $n \ll p$ .

Q.75. Telephone instrument uses:

- (a) carbon microphones                      (b) condenser microphone  
(c) ribbon microphone                      (d) crystal microphone

Q.76. The reception generally employed for reception of local Television signal is a:

- (a) half wave dipole    (b) Yagi antenna                      (c) rhombic antenna    (d) horn antenna.

Q.77. CDMA stands for:

- (a) Character Division Multiple Access                      (b) Code Division Multiple Access  
(c) Carrier Division Multiple Access                      (d) Class Division Multiple Access.

Q.78. Following is/are semiconductor:

- (a) both Germanium and Silicon    (b) only Germanium    (c) only silicon    (d) none of these.

Q.79. Which of the following is not a type of diode?

- (a) p-n junction                      (b) n-p-n                      (c) Zener                      (d) Tunnel

Q.80. When a diode is not conducting, its bias is:

- (a) forward                      (b) zero                      (c) reverse                      (d) zero or reverse.

Q.81. At room temperature, the current in an intrinsic semiconductor is due to:

- (a) holes                      (b) electrons                      (c) ions                      (d) holes and electrons

Q.82. In bipolar junction transistor, the possible configurations are:

- (a) only common emitter (b) only common base (c) only common collector (d) all (a), (b), (c)

Q.83. Which of the following is not a type of Field Effect Transistor?

- (a) n- type JFET (b) p- type JFET (c) MOSFET (d) SCHOTTKY.

Q.84. Light Emitting Diode (LED) is not used in:

- (a) Digital watches (b) Rectifier (c) Calculator (d) Display devices.

Q.85. Which of the following amplifier circuit has highest input impedance?

- (a) Circuit using BJT (b) Circuit using JFET  
(c) Circuit using MOSFET (d) either (a), or, (b), or (c).

Q.86. Following is not a type of Oscillator:

- (a) phase shift oscillator (b) LC oscillator  
(c) Operational Amplifier oscillator (d) crystal oscillator

Q.87. An OP-AMP has:

- (a) low input and low output impedance  
(b) low input impedance and high output impedance  
(c) low output impedance and high input impedance  
(d) high output and high input impedance.

Q.88. Which of the following IC series is an Operation Amplifier:

- (a) 741 (b) 8086 (c) 8279 (d) 8088

Q.89. VSWR stands for:

- (a) Voltage Standing Wide Ratio (b) Voltage Standing Wave Ratio  
(c) Voltage Standing Wave Range (d) Voltage Standing Wave Reactance.

Q.90. Which of the following is not related terminology of Data Structure and Algorithms:

- (a) Array stacks and queues (b) Linked lists  
(c) searching and sorting (d) domain name system.

Q.91. Which of the following is a database management system?

- (a) Ethernet (b) Oracle (c) PASCAL (d) JAVA script.

Q.92. OOP stands for:

- (a) Object Operation Programming (b) Object Operation Process  
(c) Object Oriented Programming (d) Object Original Programming.

Q.93. Capacity of A.C. package unit reg. air- conditioning of telephone exchanges are termed as:

- (a) TR (b) PR (c) CR (d) RR.

Q.94. Following chemical is mainly used in fire fighting cylinder in telephone exchanges:

- (a) CO<sub>2</sub> (b) Oxygen (c) CFC (d) Ammonia.

Q.95. In broadband services over copper lines, Triple Play does not include:

- (a) Voice (b) Internet (c) Telegram (d) Video.

Q.96. Type of Integrated circuits (IC) as per construction is /are:  
(a) only monolithic (b) only thin film (c) only hybrid (d) all of these.

Q.97. Diode is primarily not used in following analog circuits:  
(a) Oscillator (b) Rectifier (c) Clipping circuits (d) Clamping circuits.

Q.98. In a parallel resonant circuit, components are:  
(a) only Inductance (b) only Capacitance  
(c) only Resistance (d) Inductance, capacitance & Resistance.

Q.99. A transistor has how many p-n junctions?  
(a) 1 (b) 2 (c) 3 (d) 4.

Q.100. Resistivity of semiconductors:  
(a) lies in between conductors and insulators (b) more than insulators  
(c) less than conductors (d) none of these.

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