

पेपर कोड (Paper Code) : 431

भारत संचार निगम लिमिटेड

(भारत सरकार का उद्यम)

BHARAT SANCHAR NIGAM LIMITED

0200

(A Govt. of India Enterprise)

गुजरात परिमंडल, अहमदाबाद - 6

Gujarat Telecom Circle, Ahmedabad -6

कनिष्ठ दूरसंचार अधिकारी (टेलिकॉम) की लिमिटेड आंतरिक विभागीय प्रतियोगिता परीक्षा - 35% & 15% कोटा

Limited Internal Competitive Examination for JTO - 35% & 15% Quota

दिनांक: 02.06.2013

अधिकतम अंक: 150

समय: 10.00AM to 01.00 PM. (तीन घंटे)

Date: 02.06.2013

Maximum Marks: 150

Time : 10.00 AM to 01.00PM (Three Hours)

Please read the following instruction carefully: कृपया निम्नलिखित सूचनाएं ध्यानपूर्वक पढ़ें।

1. Verify that this question paper booklet contains 150 questions.
कृपया जाँच लें कि प्रश्नपत्र के कुल 150 प्रश्न हैं।
2. There are Two Parts in this question paper-Part I with 50 questions(Q.No. 1 to 50) and Part II with 100 questions (Q.No. 51 to 150) इस प्रश्नपत्र के कुल दो भाग हैं - पार्ट-I 50 प्रश्नों का और पार्ट-II 100 प्रश्नों का है।
3. All answers are to be marked only in the OMR Answer Sheet.
सभी उत्तर ओ एम आर उत्तर पुस्तिका में ही मार्क किए जाए।
4. Every question has 4 choice (A), (B), (C) and (D) for the answer and only ONE of them is the most appropriate answer. Darken only one bubble, which you consider to be the correct answer.
सभी प्रश्नों के उत्तर के लिए चार विकल्प हैं (क), (ख), (ग) और (घ) और उनमें से एक ही सर्वाधिक उचित है। केवल एक ही गोले को डार्क करें जिसे आप सही मानते हैं।
5. The OMR Answer Sheet must be handed over to the invigilator before leaving the examination hall. The question booklet can be taken by the candidate only at the end of the examination hours.
परीक्षा हॉल छोड़ने से पहले उत्तर पुस्तिका अनिवार्य रूप से निरीक्षक को सौंप दे। उम्मीदवार प्रश्न पुस्तिका परीक्षा समाप्त होने पर ही ले जा सकते हैं।
6. Blank papers, clip boards, Log tables, slide rulers Calculators, Cellular Phones, Pager and Electronics gadget in any form are NOT allowed. However, scientific non programmable calculator is allowed.
कोर वकफ़, क्लिप बोर्ड्स, लॉग टेबल, स्लाइड रूलर, कैलकुलेटर, सेल्यूलर फोन, पेजर और किसी भी प्रकार के इलेक्ट्रॉनिक साधन के लिए अनुमति नहीं दी जाएगी। फिर भी, साइंटिफिक नॉन-प्रोग्रामेबल कैलकुलेटर के लिए अनुमति है।
7. Using good quality Black Ball Point Pen only, write your name, Roll Number and a small statement with your signature, there under in the boxes provided on the OMR answer sheet and darken the appropriate bubble under each digit.
अच्छी क्वालिटी की ब्लैक पॉइंट पेन का उपयोग करें। आपका नाम, रोल नंबर एवं छोटा सा विवरण हस्ताक्षर के साथ ओ एम आर उत्तर पुस्तिका में दिए गए बॉक्स में लिखें और प्रत्येक डिजिट के नीचे उचित गोले को डार्क करें।
8. Candidate should not write anything except as directed in the OMR Answer Sheet.
उम्मीदवार ओ एम आर उत्तर पुस्तिका में दिए गए निर्देश के अतिरिक्त कुछ न लिखें।
9. In case of doubt please refer English version. संदेह की स्थिति में अंग्रेजी पाठ देखें।

Marking Scheme: मार्किंग पद्धति -

- (a) All the questions in the Part I and II carry 1(one) mark each. 25% mark of each question would be deducted for each wrong answer.
पार्ट-I और II में प्रत्येक प्रश्न एक अंक का है। गलत उत्तर के लिए प्रत्येक प्रश्न का 25% अंक भी कटौत की जाएगी।
- (b) In case you have not darkened any bubble for a question, you will be awarded Zero(0) mark for that question.
यदि आपने किसी भी उत्तर के गोले को डार्क नहीं किया तो, उस उत्तर के लिए शून्य (0) मार्क दिया जाएगा।

PART A- GENERAL ENGLISH & GENERAL STUDIES

Q. Identify the word nearly similar in meaning to the key word

1. Admonish

- a) Ignore
- b) scold
- c) Refuse
- d) Control

+ 2. Trauma

- a) Point of no return
- b) violent pain
- c) emotional shock
- d) Drama

Q. Identify the word that is nearly opposite in meaning to the key word.

+ 3 Frank

- a) Clear
- b) Open minded
- c) Reserved
- d) Cunning

+ 4 Hope

- a) Regret
- b) Expect
- c) Despair
- d) Lament

+ 5 Waive

- a) Demand
- b) Persue
- c) Supply
- d) Repeat

+ 6 Dismantle

- a) Ignite
- b) Assemble
- c) Condone
- d) Reconcile

Q.

PASSAGE

The hypothesis of an expanding Earth has never attracted notable support and if it were not for the historical example of continental drift, such indifference might be legitimate response to an apparently improbable concept. It should be remembered. However, that drift too was once regarded as illusory, but the idea was kept alive until evidence from physicists compelled geologists to reinterpret their data.

Of course, it would be as dangerous to overreact to history by concluding that the majority must now be wrong about expansion as it would be to re-enact the response that greeted the suggestion that the continents had drifted. The cases are not precisely analogous. There were serious problems with the predrift worlds! View that a drift theory could help to resolve, where as Earth expansion appears to offer no comparable advantages. If however, physicists could show that the Earth's gravitational force has decreased with time, expansion would have to be reconsidered and accommodated.

+ 7 It can be deduced from the passage that the gravitational force at a point on the Earth's is

- a) Representative of the geologic age of the Earth
- b) Analogous to the movement of land masses
- c) Similar to optical phenomena such as mirages
- d) Proportional to the size of the earth

8 In developing his argument, the author warns against

- a) Relying on incomplete measurements
- b) Making unwarranted comparisons
- c) Introducing irrelevant information
- d) Rejecting corroborative evidence

9 The passage indicates that one reason why the expansion hypothesis has attracted little support is that it will not

- a) Overcome deficiencies in current geologic hypothesis
- b) Clarify theories concerning the Earth's gravitational forces
- c) Complement the theory of continental drift
- d) Accommodate relevant theories from the field of physics

10 The final acceptance of drift theory could best be used to support the argument that

- a) Physicists are reluctant to communicate with other scientists
- b) Improbable hypotheses usually turn out to be valid
- c) There should be cooperation between different fields of science
- d) There is a need for governmental control of scientific research

Q. Find the appropriate word that is similar in meaning to the given expression.

+ 11 A person who rarely speaks the truth

- a) Liar
- b) Scoundrel
- c) Rascal
- d) Hypocrite



12 A letter that does not bear the name of writer

- a) Posthumous
- b) dead letter
- c) anonymous
- d) stateless

13 List of references used in a report

- a) Biography
- b) Bibliography
- c) Listography
- d) Demography

+ 14 A disease which spreads by contact

- a) Fatal
- b) Contagious
- c) Infectious
- d) Transparent

Q. Fill in the blanks with appropriate words.

15 The _____ of guitar are usually made of nylon.

- a) Chords
- b) Cards
- c) Carts
- d) Cords ✓

16 I have been ill _____ twelve days.

- ✓ a) Since
- b) By
- c) For ✓
- d) for the

Q. Identify the word that is plural of the given word.

17 Axis

- a) Axisse
- ✓ b) axes
- c) axes ✓
- d) exes

18 Sister-in law

- ✓ a) Sisters-in-law
- b) sister-in-laws
- c) sisters-in-law
- d) sister-in-law

Q. Find suitable word for the blank in the sentences below:

19 . If you won't go _____ I will, and _____ you'll be sorry.

- a) then.....then ✓
- b) than.....than
- c) than....then
- ✓ d) then.....than

20 . Please give those _____ books _____ me _____

- a) too, two, to
- b) to, too, two
- ✓ c) two, to, too ✓
- d) two, too, to

21 . Not only the officer _____ also the soldiers _____ laughing

- a) and....were
- b) but...was
- c) and....is
- ✓ d) but...were ✓

22 . His guilt is apparent _____ every act _____ all observers.

- a) into, after
- b) with, form
- c) upon, to
- ✓ d) in, to ✓

- 376
716
1606
9/6
- 14
- 18
17
150
- + (23) Because of the poor _____ the singer's voice could barely be heard.
- a) matrix
 - b) reduction
 - c) acoustics ✓
 - d) performance

Q. Each question below consist of an idiom or a phrase, followed by four lettered expressions.

24. The olive branch
- a) to win a prize
 - b) to be silent
 - c) offer of peace ✓
 - d) to be given away

25. A square deal
- a) an unfair deal
 - b) a deal with disproportionate terms
 - c) complete failure of discussion
 - d) a bargain characterized by fairness and honesty. ✓

Q. Find the missing numbers.

26. (2,3), (5,7), (11,13), (17,19),.....

- a) (26,28)
- b) (22,24)
- c) (23,25) ✓
- d) (23,29)

+ (27) 1, 2, 3, 5, 8, 13, 21,.....

- a) 30
- b) 37
- c) 34 ✓
- d) 39

28. 1, 8, 9, 64, 25,.....

- a) 132
- b) 188
- c) 200
- d) 216 ✓

Q. Variation of position of the letters.

+ (29) AZ, BY, CX, DW

- a) EU
- b) EV ✓
- c) EW
- d) FW

+ (30) DF, GJ, KM, NQ, RT,.....

- a) WV
- b) UX ✓
- c) XZ
- d) YZ

Q. Choose the same relationship from given four choices as given in original pair.

- 31. Visitor : Welcome
 - a) Warrior : Conquer
 - b) Worship : God
 - c) Beggar : Hungry ✓
 - d) Criminal : Prosecute

- 32. Teeth : Chew
 - a) Eyes : Flicker
 - b) Sweater : Heat
 - c) Food : Taste ✓
 - d) Mind : Think

Q. Letter coding.

- 33. If BEAUTY is coded as TVZFGB, then CHARM is coded as
 - a) XSINZ ✓
 - b) XSZIN X
 - c) ZINSX
 - d) BGZQL

Q. Choose the correct answer :

- 34. The Indian city famous for glass bangle industry, is
 - a) Lucknow
 - b) Secunderabad
 - c) Ferozabad ✓ X
 - d) Agra

- 35. Army Tanks are manufactured at
 - a) Kanpur
 - b) Chittaranjan
 - c) Perambur
 - d) Avadi

- 36. The Rajasthan canal (now called the Indira Gandhi Canal) draws its water from the river
 - a) Yamuna
 - b) Chambal ✓ X
 - c) Sutlej
 - d) Sutlej & Beas

- 37. In India, diamonds are found at
 - a) Panna (M.P) ✓
 - b) Golkonda (A.P)
 - c) Khetri (Rajasthan)
 - d) None of these

- 38. The Indian state not having a common boundary with Bangladesh is
 - a) Meghalaya
 - b) Mizoram
 - c) Tripura
 - d) Arunachal Pradesh

+ ✓ 39. Which of the following is correctly paired ?

- a) Bharatnatyam : Tamil Nadu
- b) Kathakali : Karnataka
- ✓ c) Kuchipudi : Andhra Pradesh
- d) All of these



+ 40. Choose the correct option :

Which of the following is a vector quantity ?

- a) Momentum ✓
- b) Pressure
- c) Energy
- d) Work

41. A block of ice is floating in a glass containing water. When the ice melts completely, the level of the water in the glass will :

- a) Rise
- b) Fall
- c) not change ✓
- d) none of these

+ 42. How can boiling point of a liquid be reduced ?

- a) By adding a solid of lower melting point
- b) By dissolving a soluble solid in it
- ✓ c) By increasing the pressure on the liquid
- d) By decreasing the pressure on the liquid

43. What are two examples of freeware ?

- a) Winzip and Linux
- b) Shareware & File sharing
- c) Microsoft word & the Google toolbar
- d) Instant messaging and the google toolbar

+ 44. Electromagnetic radiation with maximum wavelength is -

- a) Ultraviolet
- ✓ b) radio waves
- c) X-rays
- d) infrared

+ 45. Which has the highest electron negativity -

- a) F
- ✓ b) Cl
- c) Br
- d) I

+ 46. The process of sudden cooling is known as -

- a) Annealing
- b) Diffusion
- ✓ c) Quenching
- d) Sedimentation

- † 47. Which director got the best director Oscar award for "The life of PI"
- a) Ang Lee
 - b) Steven Spielberg
 - c) George Lucas
 - d) Jackie chan
48. Who was elected the new pope, the new head of the Roman Catholic Church
- a) Pope Benedict
 - b) Pope Francis
 - c) Pope John Paul
 - d) Pope Leo
49. Which South African differently abled sport star has been recently accused of murder of his girl friend Reeva Steenkamp
- a) Oscar Pistorius
 - b) Sebastian Coe
 - c) Sebastian Vettel
 - d) Micheal Jordan
50. In the manufacture of safety matches, we use --
- a) White phosphorus
 - b) black phosphorus ✗
 - c) violet phosphorus
 - d) red phosphorus

41
21

5-25

Part (B) Technical (Specialization)
(All correct answers are marked as bold)

- † 51. Which one of the below is not a data model?
a. Relational
b. Network data model
✓ c. Algorithm data model
d. Hierarchical data model
- † 52. Which of the following is a term of DBMS
a. Tuple
b. Cardinality
c. Diversity
d. Attributes
- † 53. Which of the following is not a keys of DBMS ?
a. candidate key
b. Basic key
c. Foreign key
d. Alternate key
- † 54. Which of the following is not a user of DBMS Systems?
a. Remote user
✓ b. Application system
c. End user
d. Physical storage system analyst
55. Which one of the following is not a level Data base implementation?
a. Physical level
b. Conceptual level
c. View level
d. Link level
- † 56. Which is not one of the three sub languages of SQL ?
a. DDL(Data Definition language)
b. DML (Data Manipulation language)
c. DCL (Data Control language)
✓ d. DRL(Data Restore language)
- † 57. Which of the following is not a ANSI SQL data type ?
a. CHAR
b. FLOAT
c. NUMERIC
d. FALSE ✓
- † 58. A condition or check applicable on a field or set a field is called -
a. Constraint ✓
b. Tuple
c. Cardinality
d. Domain

59. A Key that can uniquely identify tuples within the relation across different table is called
a. candidate key
b. Primary key ✓
c. Alternate key
d. Foreign key

60. TCP stands for :
a. Telecommunication control protocol
b. Transmission communication protocol
c. Transmission control protocol ✓
d. Terrestrial communication protocol

61. Which one of the following is not a switching tech
a. circuit switching
b. Message switching ✓
c. Control switching ✓
d. Packet switching

62. CAT 5 gives a data grade transmission speed upto -
a. 10 mbps
b. 100 mbps ✓
c. 1000 mbps ✓
d. 1 Gbps ✓

63. Which of the following is guided media
a. Infrared
b. Laser
c. Microwave ✓
d. UTP

64. A network which connects different networks over large distances through a switching unit is called
a. LAN (local area network)
b. WAN (wide area network) ✓
c. MAN (Metropolitan area network)
d. PAN (Personal area network)

65. Which one of the following 1) Star 2) ring 3) bus 4) graph 5) mesh are network topologies
a. 1,2 & 3
b. 1,2,3 & 5 ✓
c. 1,2,3&4
d. All the above

66. Which one of the following is not an advantage of bus topology
a. Short cable length and simple wiring
b. Not single point of total failure ✓
c. Issue to extend
d. Easy fault diagnosis

67. RJ45 stands for -
- a. Radio jack 45
 - b. Registered jack 45 ✓
 - c. Resistance junction 45
 - d. Resistance jack 45
68. An intelligent device used to connect separate segments of a LAN & acting as a filter network traffic based on MAC addresses is known as -
- a. HUB
 - b. Repeater
 - c. Bridge ✓
 - d. Switch
69. A message sent by a remote server to reside in host machine and sent back to server when the browser requests a page from that server is called
- a. Cookie
 - b. Trojan
 - c. Worm
 - d. Malware
70. In a communications system, noise is most likely to affect the signal
- a. at the transmitter
 - b. in the channel ✓
 - c. in the information source
 - d. at the destination
71. Indicate the false statement. Modulation is used to
- a. reduce the bandwidth used ✓
 - b. separate differing transmissions
 - c. ensure that intelligence may be transmitted over long distances
 - d. allow the use of practicable antennas
72. Indicate which one of the following is not an advantage of FM over AM :
- a. Better noise immunity is provided ✓
 - b. Lower bandwidth is required
 - c. The transmitted power is more useful ✓
 - d. Less modulating power is required ✗
73. Frequencies in the UHF range normally propagate by means of
- a. Ground waves ✓
 - b. Sky waves ✓
 - c. Surface waves ✓
 - d. Space waves ✓
74. Tropospheric scatter is used with frequencies in the following range :
- a. HF
 - b. VHF
 - c. UHF
 - d. VLF

75. An antenna that is circularly polarized is the
- a. Helical
 - b. Small circular loop
 - c. Parabolic reflector
 - d. Yagi-Uda
76. The output from a laser is monochromatic : this means that it is
- a. infrared
 - b. polarized
 - c. narrow-beam
 - d. single-frequency
77. The most common modulation system used for telegraphy is
- a. Frequency-shift keying
 - b. Two-code modulation
 - c. Pulse-code modulation
 - d. Single-tone modulation
78. Indicate which of the following systems is digital
- a. Pulse-position modulation
 - b. Pulse-code modulation
 - c. Pulse-width modulation
 - d. Pulse-frequency modulation
79. Full duplex operation
- a. Requires two pairs of cables
 - b. Can transfer data in both directions at once
 - c. Requires modems at both ends of the circuit
 - d. All of the above.
80. Microwave links are generally preferred to coaxial cable for television transmission because
- a. They have less overall phase distortion
 - b. They are cheaper
 - c. Of their greater bandwidths
 - d. Of their relative immunity to impulse noise
81. Telephone traffic is measured
- a. With echo cancellers
 - b. By the relative congestion
 - c. In terms of the grade of service
 - d. In erlangs
82. The baud rate
- a. Is always equal to the bit transfer rate
 - b. Is equal to twice the bandwidth of an ideal channel
 - c. Is not equal to the signaling rate
 - d. Is equal to one-half the bandwidth of an ideal channel
83. In active region operation of a transistor
- a. Both junctions are reverse biased
 - b. Both junctions are forward biased
 - c. Emitter junctions is forward biased while collector junction is reverse biased
 - d. Emitter junctions is reverse biased while collector junction is forward biased

84. Where J_E and J_C are respectively the emitter and collector junctions, in the cutoff region operation of a transistor

- a. Both J_E and J_C are forward biased
- b. Both J_E and J_C are reverse biased
- c. J_E is forward biased while J_C is reverse biased
- d. J_E is reverse biased while J_C is forward biased

Where J_E and J_C are respectively the emitter and collector junctions

+ 85. In saturation region operation of a transistor

- a. Both J_E and J_C are forward biased
- b. Both J_E and J_C are reverse biased
- c. J_E is forward biased while J_C is reverse biased
- d. J_E is reverse biased while J_C is forward biased

f 86. Avalanche break down results basically due to

- a. impact ionization
- b. strong electric field across the junction
- c. emission of electrons
- d. oscillator

+ 87. The three terminals of IGBT

- a. Collector, emitter, base
- b. Drain, source, base
- c. Drain, source, gate
- d. Collector, emitter, gate

88. Which one of the following statement is true

- a. Both MOSFET and BJT are voltage controlled devices
- b. Both MOSFET and BJT are current controlled devices
- c. MOSFET is a voltage controlled device and BJT is current controlled device
- d. MOSFET is a current controlled device and BJT is voltage controlled device

89. Algorithm is used

- a) To bring itself into desired state by its own action
- b) To perform logarithmic operations
- c) To describe a set of procedure by which given result is obtained
- d) None of these

90. The language which a computer can understand is

- a. high level language
- b. assembly language
- c. machine language
- d. All of the above

91. FORTRAN programming language is commonly used for

- a. Mathematical problem solving
- b. Business data processing
- c. Both mathematical problem solving and business data processing
- d. Real time and system application

92. A bus connected between the CPU and the main memory that permits transfer of information between main memory and the CPU is known as
- a. DMA bus
 - b. Memory bus
 - c. Address bus
 - d. Control bus
93. In C programming language, which of the following types of operators have the highest precedence?
- a. Relational operators
 - b. Equality operators
 - c. Logical operators
 - d. Arithmetic operators
94. Mnemonic codes and variable names are used in
- a. A machine language
 - b. An assembly language
 - c. A high level language
 - d. All of the above
95. An instruction cycle is made up of
- a. One or more execute cycles
 - b. One or more fetch cycles
 - c. One opcode and one execute cycle
 - d. None of the above
96. The register which holds address of the location to or from which data are to be transferred is known as
- a. Index register
 - b. Instruction Register
 - c. Memory address Register
 - d. Memory data register
97. The stack pointer in the 8085 microprocessor is a
- a. 16 bit register which points to stack memory locations
 - b. 16 bit accumulator
 - c. Memory location in the stack
 - d. Flag register used for the stack
98. Program counter is used to
- a. Store address of the next instruction to be executed
 - b. Store temporary data to be used in arithmetic operations
 - c. Store the status of the microprocessor
 - d. None of the above
99. A USART chip provides
- a. Half duplex operation
 - b. Full duplex operation
 - c. Duplex operation
 - d. Full duplex operation but cannot work in asynchronous mode

- + (100.) Which of the following is an example of a spooled device?
 a. A line printer used to print the output of a number of jobs
 b. A terminal used to enter input data to a running program
 c. A secondary storage device in a virtual memory system
 d. A graphic display device
- + (101.) The number of bits needed to address 4 K memory is
 a. 6
 b. 8
 c. 12
 d. 16
- + (102.) In a transformer maximum efficiency occurs when _____
 a. Iron loss is equal to copper loss
 b. Iron loss is less than copper loss
 c. Iron loss is more than copper loss
 d. None of the above
- + (103.) An induction motor consists of main parts _____
 a. A stator
 b. A rotor
 c. A stator and a rotor
 d. None of the above
- + (104.) A.C generator or alternator operate on the principle of _____
 a. Faraday's law of electromagnetic induction
 b. Newton's laws of motion
 c. Ohm's law
 d. Kirchhoff's law
- + (105.) The unit which indicates the rate at which energy is expended?
 a. Watt
 b. Ampere-hour
 c. Coulomb
 d. Volt
- + (106.) The peak voltage in an ac wave is always
 a. greater than the average voltage
 b. less than the average voltage
 c. greater than or equal to average voltage
 d. less than or equal to the average voltage
- + (107.) At resonance, the RLC series circuit behaves as a
 A. Purely resistive circuit
 B. Purely inductive circuit
 C. Capacitive circuit
 D. Reactive Circuit
- + (108.) In RLC circuit, the phase of current with respect to the circuit voltage will
 A. leading
 B. same
 C. lagging
 D. depends on L & C values

109. Which of the following is same in all part of the series circuit?
 A. Voltage ✓
 B. Current ✓
 C. Power ✓
 D. Resistance
110. The form factor of a ac voltage is
 A. RMS value/ Average value ✓
 B. Average Value/ RMS Value ✓
 C. Instantaneous Value/ Average value
 D. Average value/ Instantaneous value
111. A BJT has
 A. Three PN junctions
 B. Three semiconductor layers ✓
 C. Two N type layers around a P type layer ✓
 D. A low avalanche voltage
112. The two windings of a transformer is
 a. Conductively linked.
 b. Inductively linked. ✓
 c. Not linked at all.
 d. Electrically linked.
113. A hysteresis motor
 a. Is not a self-starting motor.
 b. Is a constant speed motor.
 c. Needs dc excitation.
 d. Cannot be run in reverse speed.
114. A ceiling fan uses _____ to give starting torque and to maintain speed.
 a. Split-phase motor.
 b. Capacitor start and capacitor run motor.
 c. Universal motor.
 d. Capacitor start motor.
115. A stepper motor is
 a. A dc motor.
 b. A single-phase ac motor. ✓
 c. A multi-phase motor.
 d. A two phase motor.
116. The drive motor used in a mixer-grinder is a
 a. DC motor.
 b. Induction motor.
 c. Synchronous motor.
 d. Universal motor. ✓
117. A hot-wire ammeter
 a. Can measure ac as well as dc ✓
 b. Registers current changes very fast
 c. Can indicate very low voltages
 d. Measures electrical energy

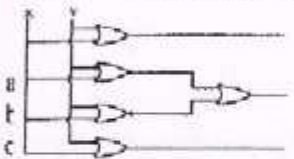
- + (118) The device used to indicate the presence of an electric current is
 a. Electrometer
 b. Galvanometer ✓
 c. Voltmeter
 d. Coulometer
- + (119) A watt-hour meter measures
 a. Voltage
 b. Current
 c. Energy ✓
 d. Power
- + (120) A voltmeter should have
 a. Low internal resistance
 b. High internal resistance ✓
 c. Electrostatic plates
 d. A sensitive amplifier
- + (121) An oscilloscope cannot be used to indicate
 a. Frequency
 b. Peak signal voltage
 c. Energy ✓
 d. Wave shape
- + (122) Which is not function of the fuse?
 a. ✓ To ensure there is enough current available for and appliance to work right
 b. To make sure the current drawn by an appliance can not exceed a certain
 c. To limit the amount of power that a device can draw from the electrical c
 d. To make it impossible to use appliances that are too large for a given cir
123. A typical frequency counter
 a. Works by indirectly measuring voltage
 b. Is accurate to six digits or more
 c. Works by indirectly measuring current
 d. Has an analog readout
- + 124. Which one of the following statement is true
 a. ✓ Both MOSFET and BJT are voltage controlled devices
 b. Both MOSFET and BJT are current controlled devices
 c. MOSFET is a voltage controlled device and BJT is current controlled dev
 d. MOSFET is a current controlled device and BJT is voltage controlled dev
- + 125. A semiconductor photo-diode uses
 a. ✓ Photo-emissive effect
 b. Photovoltaic effect
 c. Photoconductive effect
 d. None of these
- + (126) Zener breakdown results basically due to
 a. Impact ionization
 b. ✓ Strong electric field across the junction
 c. Emission of electrons
 d. High thermal energy of the electrons

127

- Karnaugh map is used to
- Minimize the number of flip-flops in a digital circuit
 - Minimize the number of gates only a digital circuit
 - Minimize the number of gates and fan-in of a digital circuit
 - Design gates

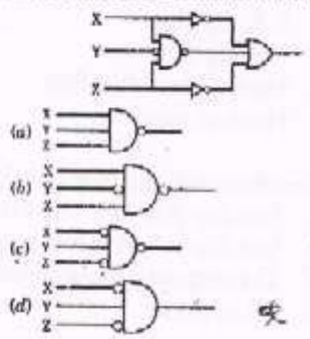


128. The circuit shown in the given figure is



- An adder circuit
- A subtractor circuit
- A comparator circuit
- A parity generator circuit

129. The minimized logic circuit for the circuit shown in figure is



Handwritten notes for question 129:

$$\frac{x}{x+y+z}$$

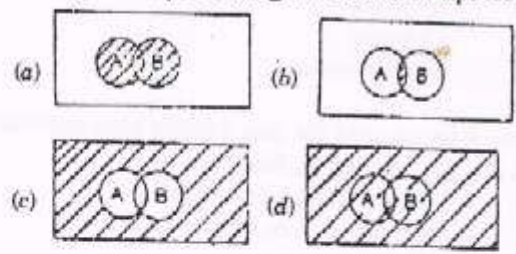
$$\overline{x+y+z}$$

$$x^1 + y^1 + z^1$$

$$(x^1 + y^1 + z^1)'$$

B-C

130. The Venn diagram representing the Boolean expression $A+(A.B)$ is



Handwritten notes for question 130:

$$(A+A) \cdot (A+B)$$

$$A \cdot (A+B)$$

$$A \cdot A + A \cdot B$$

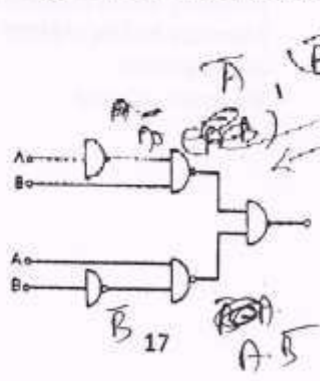
$$A + AB$$

$$A \cdot (A+B)$$

Ans- A

31. The circuit shown in the figure is functionally equivalent to

- NOR gate
- OR gate
- X-OR gate
- NAND gate



Handwritten notes for question 31:

$$A \cdot (A+B)$$

$$A \cdot A + A \cdot B$$

$$A + AB$$

W
+ 11

+ 132. Which is not an application of shift register

- a) Serial-to-parallel converter
- b) Parallel-to-serial converter
- c) Schmitt trigger
- d) Twisted-ring counter

+ 133. Full adder circuit can be implemented by

- a. Multiplexers
- b. Half adders
- c. AND & OR gates
- d. Decoders

+ 134. Which one of the following can be used as parallel to series converter?

- a. Decoder
- b. Digital counter
- c. Multiplexer
- d. De multiplexer

135. Which of the following flip-flop cannot be converted to D-type (delay) flip-flop?

- a. S-R flip flop
- b. J-K flip flop
- c. Master slave flip-flop
- d. None of these

+ 136. The characteristic of a flip-flop is

- a. The flip-flop is a bistable device with only two stable states
- b. The flip-flop has two output signals
- c. The outputs are complement of each other
- d. All of these

137. A ring counter consisting of five flip-flop will have

- a. 5 states
- b. 10 states
- c. 32 states
- d. Infinite states

138. The scheme used for data transfer between microprocessor and I/O device

- a. Synchronous data transfer
- b. Asynchronous data transfer
- c. Interrupt driven data transfer
- d. All the above

139. The register which keeps track of the sequences of instruction execution

- a. Memory address register
- b. Memory buffer register
- c. Stack pointer
- d. Program counter

64
61
5
140.

The address bus of Intel 8085 is 16 bit and hence the memory which can be accessed by this address bus is

- a. 1k byte
- b. 16 k bits
- c. 32 k bits
- d. 64 bytes

64 KB

141.

The flag which is not used for branching in a microprocessor is

- a. Carry flag
- b. Auxiliary carry flag
- c. Overflow flag
- d. Parity flag

142.

Which type of error detection uses binary division?

- a. Parity
- b. Longitudinal redundancy checking
- c. Checksum checking
- d. Cyclic redundancy checking

143.

Telnet, FTP, SMTP, DNS, HTTP are examples of protocols that are used in

- a. application layer of OSI reference model
- b. presentation layer of OSI reference model
- c. session layer of OSI reference model
- d. data link layer of OSI reference model

144.

_____ is a technique which transforms an analogue telephone circuit into a digital signal, and involves three consecutive processes: sampling, quantization and encoding.

- a. Frequency Modulation (FM)
- b. Pulse Code Modulation (PCM)
- c. Amplitude Modulation (AM)
- d. Phase Modulation (PM)

145.

An elliptically (arbitrarily) polarized wave can be broken up into

- a. Two circularly polarized components rotating in same direction
- b. Two circularly polarized components rotating in opposite directions
- c. Two stationary circularly polarized components
- d. None of these

146.

Klystron operation is based on the principle of

- a. Velocity modulation
- b. Amplitude modulation
- c. Frequency modulation
- d. Phase modulation

147.

The following register holds the instruction before it goes to the decoder:

- a. Control register
- b. Accumulator
- c. Address register
- d. Data register

148. Match List I with List II and select the correct answer using the code given lists:

List I		List II	
a.	A. Tuned circuits	1.	Schottky diode
b.	B. Voltage reference	2.	Varactor diode
c.	C. High frequency switch	3.	PIN diode
d.	D. Current controlled attenuator	4.	Zener diode

Code:

	A	B	C	D
a.	2	4	1	3
b.	3	4	1	2
c.	2	1	4	3
d.	3	1	4	2

149. The highest speed counter is .
a. Asynchronous counter
b. Synchronous counter
c. Ripple counter
d. Ring counter

150. In which of the following type of A/D converter does the conversion time double for every bit added to the device?
a. Counter type A/D converter
b. Tracking type A/D converter
c. Single-slope integrating type A/D converter
d. Successive approximation type A/D converter

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No. Exam/JTO(T)/LICE/2013/68 dated at Ahmedabad the 06. 06.2013

Sub : Provisional Answer key to the paper of Junior Telecom Officer (T) Exam under 35% & 15% quota held on 02.06.2013.

In connection with the above mentioned examination ,the provisional answer key of JTO(T) 35% & 15% quota held on 02.06.2013 uploaded on administrative website on 10.72.24.12 .

Any discrepancy in the answer key may be brought to the notice of the Examination Cell , Circle Office Ahmedabad by the candidates, by sending only through e-mail to kkbheda@rediffmail.com by dated 15.06.2013 . No such e-mail received after 15.06.2013 shall be entertained by this office.

KB

(K. K. Bheda)
Asstt. General Manager(DI)
O/o CGMT Ahmedabad-380006.

Copy to :

1. All SSA Head ,Gujarat Telecom Circle for information please.
2. All Sr.GMs/GMs Circle Office Ahmedabad for information please.

**ANSWER KEY FOR "LICE FOR PROMOTION TO THE GRADE OF JTO(T) -
35% & 15% HELD ON 02.06.2013"**

PART-(A) GENERAL ENGLISH AND GENERAL STUDIES

1 - B		11 - B		21 - D		31 - D		41 - C
2 - B		12 - C		22 - D		32 - D		42 - D
3 - C		13 - B		23 - C		33 - B		43 - D
4 - C		14 - B		24 - B		34 - C		44 - B
5 - A		15 - A		25 - C		35 - D		45 - A
6 - B		16 - C		26 - D		36 - D		46 - C
7 - D		17 - C		27 - C		37 - A		47 - A
8 - B		18 - A		28 - D		38 - D		48 - B
9 - A		19 - A		29 - B		39 - C		49 - A
10 - C		20 - C		30 - B		40 - A		50 - D

PART-(B) TECHNICAL (SPECIALIZATION)

51 - C		71 - A		91 - A		111 - B		131 - C
52 - C		72 - B		92 - B		112 - B		132 - C
53 - B		73 - D		93 - D		113 - B		133 - A
54 - A		74 - C		94 - B		114 - B		134 - C
55 - D		75 - A		95 - A		115 - D		135 - D
56 - D		76 - D		96 - C		116 - D		136 - D
57 - D		77 - A		97 - A		117 - A		137 - A
58 - A		78 - B		98 - A		118 - B		138 - D
59 - B		79 - D		99 - B		119 - C		139 - D
60 - C		80 - A		100 - A		120 - B		140 - D
61 - C		81 - D		101 - C		121 - C		141 - B
62 - C		82 - B		102 - A		122 - A		142 - D
63 - D		83 - C		103 - C		123 - B		143 - A
64 - B		84 - B		104 - A		124 - C		144 - B
65 - D		85 - A		105 - A		125 - C		145 - B
66 - D		86 - A		106 - C		126 - B		146 - A
67 - B		87 - D		107 - A		127 - B		147 - D
68 - D		88 - C		108 - D		128 - C		148 - A
69 - A		89 - C		109 - B		129 - C		149 - B
70 - B		90 - C		110 - A		130 - A		150 - A

For HINDI Version A = क B = ख C = ग D = घ

KZ