DO NOT BREAK THE SEAL OF THE BOOKLET UNTIL YOU ARE TOLD TO DO SO

QUESTION BOOKLET   SERIES II

Subjects : General English & Computer Science

BOOKLET SERIAL NO. 160058

Marks : 300
Time : $2\frac{1}{2}$ hours

Read the following instructions carefully before you
begin to answer the questions.

INSTRUCTIONS TO CANDIDATES

1. This booklet contains **150 questions** to be answered in a separate OMR Answer Sheet using Black Ball Pen in following two parts:

   Part-A-General English : 50 questions, Part-B- Computer Science : 100 questions

2. All Questions are compulsory.

3. You will be supplied the Answer sheet separately by the invigilator. You must complete the details of particulars asked for.

4. Answers must be shown by completely blackening the corresponding circles in the Answer Sheet against the relevant question number by Black Ball Pen. OMR Answer Sheet without marking series/ double series marking shall not be evaluated.

Example :

   Supposing the following question is asked :-

   The Capital of Meghalaya is-
   A. Guwahati
   B. Kohima
   C. Shillong
   D. Delhi

   You will have four alternatives in the Answer Sheet for your response corresponding to each question of the Question Booklet as below :-

   Ⓐ Ⓑ Ⓒ Ⓓ

   In the above illustration, if your chosen response is alternative C i.e. Shillong, then the same should be marked on the Answer Sheet by blackening the relevant circle with a Black Ball Point Pen only as below :-

   Ⓐ Ⓑ ⬤ Ⓓ

WHICH IS THE ONLY CORRECT METHOD OF ANSWERING

5. Answer the questions as quickly and as carefully as you can. Some questions may be difficult and others easy. Do not spend too much time on any one question.

6. There will be NOT be any negative marking for wrong answers.

7. The Answer Sheet must be handed over to the invigilator before you leave the Examination Hall.

8. No rough work is to be done on the Answer Sheet. Space for rough work has been provided in the question booklet.

PART - A -GENERAL ENGLISH

Marks :100

Each question carries 2 marks :

Directions : Choose the correct meaning of the idioms from the options provided :

1. To fight tooth and nail
a) to fight bravely
b) to fight cowardly
c) to make every possible effort to win
d) None of the above

2. To read between the lines
a) to do useless things
b) to suspect
c) to understand the hidden meaning of the word
d) to read carefully

3. To rise like the phoenix
a) to rise with anger
b) to get up with a start
c) to rise with a new life
d) None of the above

4. A snake in the grass
a) a hidden enemy
b) a reliable person
c) unrecognizable danger
d) crossing danger

5. From hand to mouth
a) consuming food
b) to survive without saving
c) hitting someone by hand on the mouth
d) to detect length

6. A white elephant
a) a costly but useless thing
b) a costly and useful thing
c) a costly thing
d) None of the above

7. Through thick and thin
a) big and small
b) thin and fat
c) under all conditions
d) in some measures

8. Sitting on the fence
a) between two opinions

b) unbalanced
c) uncomfortable
d) None of the above

9. Out and out
a) basically
b) surely
c) thoroughly
d) carefully

10. Beside the mark
a) beyond imagination
b) irrelevant
c) beyond reach
d) None of the above

Directions : Choose the word which is similar in meaning from the given options :

11. DILIGENT
a) Industrious   b) Modest
c) Intelligent   d) Energetic

12. PROLIFIC
a) Plenty   b) Fertile
c) Competent   d) Lazy

13. FALLACY
a) Dream   b) False opinion
c) Deep fall   d) Death

14. INFER
a) To attack   b) To deduce
c) To conceive   d) To ruin

15. BLITZ
a) News   b) Happiness
c) Violent attack   d) Fall

16. LAUD
a) Praise   b) Scold
c) Scream   d) Criticize

17. COMMEMORATE
a) Boast   b) Remember
c) Manipulate   d) Harmonize

18. EXORBITANT
a) Odd   b) Excessive

c) Ridiculous   d) Threatening

19. LETHAL
a) Unlawful   b) Sluggish
c) Deadly   d) Smooth

20. BOUNTY
a) Donation   b) Gift
c) Pleasure   d) Reward

Directions : Choose the word which is nearly opposite in meaning from the given options :

21. FOLLY
a) Mistake   b) Wisdom
c) Exact   d) Action

22. LETHARGIC
a) Unpleasant   b) Indolent
c) Immobile   d) Hyperactive

23. CLANDESTINE
a) Dim   b) Clear
c) Open   d) Congested

24. SCARCE
a) Sacred   b) Transpire
c) Abundant   d) Excellent

25. FLIMSY
a) Firm   b) Frail
c) Filthy   d) Flippant

26. DWINDLE
a) Profane   b) Lessen
c) Pollute   d) Increase

27. LIBERATE
a) Conceal   b) Imprison
c) Emancipate   d) Clean

28. OPPONENT
a) Rival   b) Sincere
c) Ally   d) Champion

29. OVERT
a) Hidden`   b) Shy
c) Curious   d) Soft

30. NOXIOUS
a) Unhealthy   b) Hurtful
c) Harmless   d) Helpful

Directions : Choose the correct option to fill in the gaps :

31. In many countries, people drive _____ the left.
a) in   b) at
c) on   d) by

32. It is risky to enter _____ partnership with people you do not know very well.
a) to   b) into
c) with   d) on

33. His parents were transferred to Tura _____ he was five years old.
a) when   b) since
c) while   d) until

34. John has been waiting here _____ morning.
a) for   b) since
c) at   d) from

35. We don't know what _____ him to resign from his job.
a) prompted   b) roused
c) attracted   d) excited

36. Gold is _____ useful metal.
a) the   b) an
c) a   d) Zero article

37. _____ milk is good for health.
a) the   b) an
c) a   d) Zero article

38. You are going home tomorrow, _____ ?
a) aren't you   b) isn't it
c) won't you   d) wouldn't you

39. Share this _____ the five of you.
a) between   b) among
c) with   d) for

40. The bridge _____ this river was built in the year 2000.
a) at   b) over
c) above   d) on

Directions : Choose the correct one-word substitution for the phrases from the alternatives provided below :

41. Using more words than wanted
a) verbose
b) verbal
c) venial
d) seamless

42. Occurring at the same time
a) recurrent
b) divergent
c) simultaneous
d) continuance

43. Who knows all
a) efficient
b) omniscient
c) omnipotent
d) None of the above

44. One who spends money lavishly
a) extravagant
b) thrifty
c) miserly
d) enormous

45. Belonging to the same time
a) friends
b) colleagues
c) contemporary
d) people

46. Lying inactive as in sleep
a) dormant
b) extinct
c) aware
d) awake

47. Likely to break
a) tensile
b) brittle
c) ductile
d) None of the above

48. Of doubtful classification
a) ambiguous
b) petty
c) ignorant
d) clear

49. A person who comes as settler
a) immigrant
b) emigrant
c) vagrant
d) None of the above

50. Born after the death of father
a) orphan
b) vagabond
c) posthumous
d) None of the above

PART - B - COMPUTER SCIENCE

Marks : 200

Each question carries 2 marks :

51. Reusability is a desirable feature of a language as it
a) Decreases the testing time
b) Lowers the maintenance cost
c) Reduces the compilation time
d) Both (a) and (b)

52. The following C++ code results in
```
# include "iostream.h"
void main( )
{
count <<(int i=5)<<(int j=6);
}
```
a) Compilation error
b) Run time error
c) Link time error
d) None of the above

53. Which of the following operator cannot be overloaded ?
a) >>
b) ?:
c) +
d) No such operator

54. For a method to be an interface between the outside world and a class, it has to be declared
a) Private
b) Protected
c) Public
d) External

55. Overloading is otherwise called as
a) Virtual polymorphism
b) Transient polymorphism
c) Pseudo polymorphism
d) Ad-hoc polymorphism

56. One of the disadvantages of pass-by reference is that the called function may inadvertently corrupt the caller's data. This can be avoided by
a) Passing pointers
b) Declaring the formal parameters constant
c) Declaring the actual parameters constant
d) All of the above

57. Which of the following is not a primitive data type ?
a) Boolean
b) Byte
c) String
d) Double

58. What is the output of the following ?
```
Public class TestFirstApp{
 Public static void main(String[] args) {
   System.out.printIn((1==1?(7==8)?5:6:4);
    }
}
```
a) 4
b) 6
c) 5
d) 1

59. The finally block is executed
a) Only when a checked exception is thrown
b) Only when a unchecked exception is thrown
c) Only when an exception is thrown
d) Irrespective of whether an exception is thrown or not

60. Is null an object ?
a) Yes
b) No
c) Sometimes yes
d) None of these

61. Let m be a variable of datatype byte. The value of m<<4 is same as
a) $mx2^4$
b) 4m
c) m^4
d) 4 + m

62. Which of the following doesn't have a superclass ?
a) System
b) Object
c) Lang
d) Exception

63. Which of the following codes needs 7 bit to represent a character ?
a) ASCII
b) BCD
c) EBCDIC
d) GRAY

64. The binary equivalent of the decimal number 0.4375 is
a) 0.0111
b) 0.1011
c) 0.1100
d) 0.1010

65. $(10110011100011110000)_2$ in base 32 is
a) 22 14 7 17
b) 11 9 23 31
c) 11 9 7 16
d) 11 14 23 16

66. On receiving an interrupt from an I/O device, the CPU
a) Halts for a predetermined time

b) Hands over control of address bus and data bus to the interrupting device

c) Branches off to the interrupt service routine immediately

d) Branches off to the interrupt service routine after completion of the current instruction

67. Which of the following is volatile ?
a) Bubble memory   b) RAM
c) ROM   d) Magnetic disc

68. The minimum number of temporary variables needed to swap the contents of two integer variables is
a) 1   b) 2
c) 3   d) 0

69. Consider the function
        find (int x, int y)
        {return ((x > y) ? 0 : x - y));}
Let a.b be two non-negative integers. Which of the following calls finds the positive difference of a and b ?
a) find (a, b) + find (b, a)
b) find (a, find (a, b))
c) a + find (a, b)
d) b + find (a, b)

70. printf ("%c",100);
a) prints 100
b) prints the ASCII equivalent of 100
c) prints garbage
d) none of the above

71. The following program fragment
        for (i = 3;i<15;i+=3);
        printf("%d", i);
results in
a) syntax error
b) an execution error
c) printing of 12
d) printing of 15

72. If the sequence of operations - push(1), push(2), pop, push(1), push(2), pop,pop,pop,push(2),pop, are performed on a stack, the sequence of popped out values are
a) 2,2,1,1,2   b) 2,2,1,2,2
c) 2,1,2,2,1   d) 2,1,2,2,2,

73. The depth of a complete binary tree in which very non-leaf node has non-empty left and right subtrees is called a strictly binary tree. Such a tree with 10 leaves
a) Cannot have more than 19 nodes
b) Has exactly 19 nodes
c) Has exactly 17 nodes
d) Cannot have more than 17 nodes

74. The depth of a complete binary tree with n nodes is(log is to the base two)
a) Log(n+1)-1   b) Log(n)
c) Log(n-1)+1   d) Long(n)+1

75. Preorder is same as
a) Depth-first order   b) Breath-first order
c) Topological order   d) Linear order

76. Which of the following traversal techniques lists the nodes of a binary search tree in ascending order ?
a) Post-order   b) In-order
c) Pre-order   d) None of the above

77. A hash function f is defined as f(key)=key mod 7, with linear probing, is used to insert the keys 37,38,72,48,98,11,56, into a table indexed from 0 to 6. What will be the location of key 11?
a) 3   b) 4
c) 5   d) 6

78. Which of the following is an example of a SPOOLED device ?
a) The terminal used to enter the input data for a program being executed
b) The secondary memory device in a virtual memory system
c) A line printer used to print the output of a number of jobs
d) None of the above

79. Determine the number of page faults when references to pages occur in the order- 1,2,4,5,2,1,2,4. Assume that the main memory can accommodate 3 pages and the main memory already has the pages 1 and 2 with page 1 having been brought earlier than page 2(assume LRU algorithm is used)
a) 3   b) 5
c) 4   d) None of the above

80. The page replacement policy that sometimes leads to more page faults when the size of the memory is increased is
a) FIFO   b) LRU

c) No such policy exist
d) None of the above

81. The following program fragment
        int a = 4, b = 6;
        printf("%d",a==b);
a) outputs an error message
b) prints 0
c) prints 1
d) none of the above

82. Consider the following type definition
        typedef char x[10];
        x myarray[5];
what will size of(myarray) be ? (Assume one character takes one byte)
a) 15 bytes   b) 10 bytes
c) 50 bytes   d) 30 bytes

83. The expression 4 + 6 / 3 * 2 - 2 + 7 % 3 evaluates to
a) 3   b) 4
c) 6   d) 7

84. Consider the following program
main( )
{
        char x[10], *ptr=x;
scanf("%s",x);
change(&x[4]);
}
change(char a[])
{puts(a);}
If abcdefg is input, the output will be
a) abcd   b) abc
c) efg   d) garbage

85. Consider the following program segment.
char *a, *b, c[10], d[10];
a=b;
b=c;
c=d;
d=a;
Choose the statement having errors
a) no error
b) a=b; and b=c;
c) c=d; and d=a;
d) a=b; and d=a;

86. The statement printf("%d",++5); prints
a) 5   b) 6
c) An error message   d) Garbage

87. The number of bytes in JAVA needed to store a number of datatype double is
a) Compiler dependent
b) JVM dependent
c) Operating system dependent
d) 8

88. Let *Root* be a class. Let branch be a sub-class of *Root*. Let *thisBranch* be a *Branch* object. The condition- *thisBranch instanceof Root,*
a) Evaluates to true
b) Evaluates to false
c) Results in compilation error
d) Results in an exception

89. Which of the following packages needs to be imported to use the StringTokenizer class ?
a) Java.io   b) Java.util
c) Java.lang   d) Java.net

90. Which of the following is invoked by the garbage collector ?
a) Destructor   b) Constructor
c) Finally   d) Finalize

91. Critical region is
a) A part of the operating system which is not allowed to be accessed by any process
b) A set of instructions that access common shared resource which exclude one another in time
c) The portion of the main memory which can be accessed only by one process at a time
d) None of the above

92. Necessary condition for deadlocks are
a) Non-preemption and circular wait
b) Mutual exclusion and partial allocation
c) Both (a) and (b)
d) None of the above

93. Disk scheduling involves deciding
a) Which disks should be accessed first
b) The order in which disk access request must be serviced
c) The physical location where files should be accessed
d) None of the above

94. Dirty bit is used to show the
a) Page with corrupted data
b) Wrong page in memory

c) Page that is modified after being loaded into memory
d) Page that is less frequently accessed

95. Suppose that a process is in BLOCKED state waiting for some I/O service. When the service is completed it goes to the
a) RUNNING state
b) READY state
c) SUSPENDED state
d) TERMINATED state

96. In which of the following page replacement policy, Belady's anomaly may occur ?
a) FIFO
b) Optimal
c) LRU
d) MRU

97. Which of the scheduling policy is well suited for a time-shared operating system ?
a) Shortest job first
b) Round robin
c) First-come-first-serve
d) Elevator

98. Which of the following are not filter programs ?
a) Date
b) Sort
c) Cat
d) Grep

99. The command cd ../../..
a) Serves no purpose
b) Is invalid
c) Is equivalent to cd ..
d) None of the above

100. The major difference between a Moore and a Mealy machine is that
a) The output of the former depends on the present state and the current input
b) The output of the former depends only on the present state
c) The output of the former depends only on the current input
d) None of the above

101. FSM can recognize
a) Any grammar
b) Only CFG
c) Any unambiguous grammar
d) Only regular grammar

102. Pumping lemma is generally used for proving

a) A given grammar is regular
b) A given grammar is not regular
c) Whether two given regular expressions are equivalent
d) None of the above

103. The following CFG
S->aB | bA
A->b | aS | bAA
B->b | bS | aBB
Generates strings of terminals that have
a) Equal number of a's and b's
b) Odd number of a's and odd number of b's
c) Even number of a's and even number of b's
d) Odd number of a's and even number of b's

104. Which of the following CFG's cannot be simulated by an FSM ?
a) S->Sa | a
b) S->abX
   X->cY
   Y->d | aX
c) S->aSb | ab
d) None of the above

105. CFG is not closed under
a) Union
b) Kleene star
c) Complementation
d) Product

106. A PDM behaves like a TM when the number of auxiliary memory it has is
a) 0
b) 1 or more
c) 2 or more
d) None of the above

107. The statement - "A TN cannot solve halting problem" is
a) True
b) False
c) Still an open question
d) None of the above

108. Which of the following results in an error ?
a) expr 4+5
b) expr 9-3
c) expr 2*3
d) expr 7/5

109. If 7 terminals are currently logged on, then the command
date ; who | wc -I, displays
a) date followed by 7
b) date followed by 8
c) date followed by 1
d) an error message

110. The mv command changes
a) only the directory entry
b) only the directory entry and i-node
c) only the i-node number
d) none of the above

111. If every non-key attribute is functionally dependent on the primary key, then the relation will be in
a) first normal form
b) second normal form
c) third normal form
d) fourth normal form

112. The E-R diagram ellipses represent
a) entity sets
b) relationship among entity sets
c) attributes
d) link between attributes and entity sets

113. A data model is a collection of conceptual tools for describing
a) data and data relationships
b) data semantics and consistency constraints
c) data, data relationship, data semantics and consistency constraints
d) none of the above

114. E-R modelling technique is a
a) Top-down approach
b) Bottom-up approach
c) Left-right approach
d) None of the above

115. A primary key if combined with a foreign key creates
a) A parent child relationship between tables that connects them
b) Many-to-many relationship between tables that connects them
c) Network model between tables that connects them
d) None of the above

116. Generally speaking for a weak entity to be meaningful it must be a part of a
a) One-to-one relationship
b) One-to-many relationship
c) Many-to-many relationship
d) None of the above

117. Assuume transaction A holds a shared lock R. If transaction B also request for a shared

lock on R, it will
a) Results in a deadlock situation
b) Immediately be granted
c) Immediately be rejected
d) Be granted as soon as it is released by A

118. The SELECT statement
SELECT 'Hi' FROM DUAL WHERE 1 = NULL;
outputs
a) Hi   b) FALSE
c) TRUE   d) Nothing

119. Which of the following joins is also called as inner join ?
a) Non-Equijoin   b) Self-join
c) Equijoin   d) None of the above

120. If a query involves NOT, AND, OR with no parenthesis
a) NOT will evaluated first; AND will be evaluated second; OR will be evaluated last
b) NOT will evaluated first; OR will be evaluated second; AND will be evaluated last
c) AND will evaluated first; OR will be evaluated second; NOT will be evaluated last
d) The order of occurrence determines the order of evaluation

121. S-> aSa | bSb | a | b
The language generated by the above grammar over the alphabet {a,b} is the set of
a) All palindromes
b) All odd length palindromes
c) Strings that begin and end with the same symbol
d) All even length palindromes

122. Which of the following languages over the alphabet {0,1} is described by the regular expression : (0+1)*0(0+1)*0(0+1)*
a) The set of all strings containing the substring 00
b) The set of all strings containing at most two 0's
c) The set of all strings containing at least two 0's
d) The set of all strings that begin and end with either 0 or 1

123. The period of time between an allocation and its subsequent disposal is called
a) Scope

b) (dynamic) binding
c) Lifetime
d) Longevity

124. Cross-compiler is a compiler
a) Which is written in language that is different from the source language
b) That generates object code for its host machine
c) Which is written in language that is same as the source language
d) That runs on one machine but produces object code for another machine

125. In a compiler, grouping of characters into tokens is done by the
a) Scanner   b) Parser
c) Code generator   d) Code optimizer

126. Which of the following grammars are not phrase-structured ?
a) Regular   b) Context-free
c) Context sensitive d) None of the above

127. CFG can be recognized by
a) Push-down automata
b) 2-way linear bounded automata
c) Finite state automata
d) None of the above

128. The coupling between different modules of a software is categorized as follows
i) Content coupling
ii) Common coupling
iii) Control coupling
iv) Stamp coupling
v) Data coupling

Coupling between modules can be ranked in the order of strongest (least desirable) to weakest (most desirable) as follows
a) (i), (ii), (iii), (iv), (v)
b) (v), (iv), (iii), (ii), (i)
c) (i), (iii), (v), (ii), (iv)
d) (iv), (ii), (v), (iii), (i)

129. The hamming distance between 001111 and 010011 is
a) 1   b) 2
c) 3   d) 4

130. Bit stuffing refers to
a) Inserting a '0' in user data stream to differ-

entiate it with a flag
b) Inserting a '0' in a flag stream to avoid ambiguity
c) Appending a nibble to the flag sequence
d) Appending a nibble to the user data stream

131. The method of network routing where every possible path between transmitting and receiving DTE is used is called
a) Random routing
b) Packet flooding
c) Directory routing
d) Message switching

132. The network topology that supports bi-directional links between each possible node is
a) Ring   b) Star
c) Tree   d) Mesh

133. Which of the following ISO level is more closely related to the physical communications facilities ?
a) Application   b) Session
c) Network   d) Data link

134. Which of the following is not a client-server application ?
a) Internet chat
b) Web browsing
c) E-mail
d) Ping

135. Distributed system should
a) Meet prescribed time constraints
b) Aim better resource sharing
c) Aim better system utilization
d) Aim low system overhead

136. A bottom-up parser generates
a) Left-most derivation
b) Right-most derivation
c) Right-most derivation in reverse
d) Left-most derivation in reverse

137. A given grammar is said to be ambiguous if
a) Two or more productions have the same nonterminal on the left hand side
b) A derivation tree has more than one associated sentence
c) There is a sentence with more than one derivation tree corresponding to it
d) Parenthesis are not present in the grammar

138. Two finite state machines are said to be equivalent if they
a) Have the same number of states
b) Have the same number of edges
c) Have the same number of states and edges
d) Recognize the same set of tokens

139. Which of the following symbol table implementations is best suited if access time is to be minimum
a) Linear list
b) Search list
c) Hash table
d) Self-organization list

140. Shift-reduce parsers are
a) Top-down parsers
b) Bottom-up parsers
c) May be top-down or bottom-up parsers
d) None of the above

141. YACC builds
a) SLR parsing table
b) Canonical LR parsing table
c) LALR parsing table
d) None of the above

142. Software engineering aims on developing
a) Reliable software
b) Cost effective software
c) Reliable and cost effective
d) None of the above

143. Design phase includes
a) Data, architectural and procedural designs only
b) Architectural, procedural and interface designs only
c) Data, architectural and interface designs only
d) Data, architectural, interface and procedural designs

144. Data structure suitable for the application is discussed in
a) Data design
b) Architectural design
c) Procedural design
d) Interface design

145. The data flow model of an application mainly shows
a) The underlying data and the relationship among them
b) Processing requirements and the flow of data
c) Decision and control information
d) Communication network structure

146. Which of the following statements are not true ?
a) Content coupling in a module is desirable
b) Logical cohesion in a module is desirable
c) Stamp coupling is preferred over functional coupling
d) All of the above

147. Configuration management is not concerned with
a) Controlling changes to the source code
b) Choice of hardware configuration for an application
c) Controlling documentation changes
d) Maintaining versions of software

148. Which of the following graph theoretic concept will be useful in software testing ?
a) Cyclomatic complexity number
b) Hamiltonian circuit
c) Eulerian cycle
d) None of the above

149. Which of the following statements are TRUE ?
i) The context diagram should the system as a single bubble
ii) External entities should be identified clearly at all levels of DFDs
iii) Control information should not be represented in a DFD
iv) A data store can be connected either to another data store or an external entity
a) (ii) and (iii)   b) (i), (ii) and (iv)
c) (i) and (iii)   d) (i), (ii) and (iii)

150. Software testing techniques are most effective if applied immediately after
a) Requirement specification
b) Design
c) Coding
d) Integration

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