

BEL Computer Science – 100 MCQs with Answers

1. C Programming

1. Which of the following is a valid C identifier?

- A) 2var
- B) _value
- C) break
- D) int

Answer: B) _value

2. Which header file is required for printf() function?

- A) string.h
- B) stdio.h
- C) conio.h
- D) stdlib.h

Answer: B) stdio.h

3. What is the size of int in a 32-bit compiler?

- A) 2 bytes
- B) 4 bytes
- C) 8 bytes
- D) Depends on OS

Answer: B) 4 bytes

4. What is the output of printf("%d", 5/2);?

- A) 2.5
- B) 2
- C) 2.0
- D) 3

Answer: B) 2

5. Which keyword is used to exit from a loop in C?

- A) exit
- B) return
- C) break
- D) stop

Answer: C) break

2. C++

6. C++ is also called as:

- A) Procedural language
- B) Object-oriented language

- C) Functional language
- D) Scripting language

Answer: B) Object-oriented language

7. Which of the following supports runtime polymorphism?

- A) Function overloading
- B) Operator overloading
- C) Virtual functions
- D) Templates

Answer: C) Virtual functions

8. Which operator is used for dynamic memory allocation in C++?

- A) malloc
- B) alloc
- C) new
- D) create

Answer: C) new

9. Which feature of OOP indicates code reusability?

- A) Polymorphism
- B) Abstraction
- C) Inheritance
- D) Encapsulation

Answer: C) Inheritance

10. Destructor in C++ is defined using:

- A) ~classname()
- B) #classname()
- C) delete classname()
- D) destructor()

Answer: A) ~classname()

3. Java

11. JVM stands for:

- A) Java Virtual Machine
- B) Java Variable Machine
- C) Joint Virtual Machine
- D) None

Answer: A) Java Virtual Machine

12. Which keyword is used to inherit a class in Java?

- A) this

- B) super
- C) extends
- D) implements

Answer: C) extends

13. Which of these is not a Java access modifier?

- A) private
- B) protected
- C) internal
- D) public

Answer: C) internal

14. Which collection class allows duplicate elements?

- A) HashSet
- B) TreeSet
- C) ArrayList
- D) None

Answer: C) ArrayList

15. Garbage collection in Java is done by:

- A) delete keyword
- B) free()
- C) JVM
- D) programmer

Answer: C) JVM

4. Python

16. Python is a:

- A) Compiled language
- B) Interpreted language
- C) Machine language
- D) Assembly language

Answer: B) Interpreted language

17. Which of the following is immutable?

- A) List
- B) Dictionary
- C) Tuple
- D) Set

Answer: C) Tuple

18. Which keyword is used for function definition in Python?

- A) def
- B) func
- C) define
- D) function

Answer: A) def

19. What will len("BEL") return?

- A) 2
- B) 3
- C) 4
- D) 1

Answer: B) 3

20. Which symbol is used for comments in Python?

- A) //
- B) #
- C) /* */
- D) %

Answer: B) #

5. Data Structures

21. Which data structure uses FIFO order?

- A) Stack
- B) Queue
- C) Linked List
- D) Tree

Answer: B) Queue

22. Which sorting algorithm has best average performance?

- A) Bubble sort
- B) Quick sort
- C) Insertion sort
- D) Selection sort

Answer: B) Quick sort

23. Which traversal of binary search tree gives sorted order?

- A) Preorder
- B) Postorder
- C) Inorder

D) Level order

Answer: C) Inorder

24. Which data structure is used for recursion?

A) Queue

B) Heap

C) Stack

D) Linked List

Answer: C) Stack

25. Graph with no cycles is called:

A) Directed graph

B) Tree

C) Cyclic graph

D) Flowchart

Answer: B) Tree

6. DBMS

26. SQL stands for:

A) Structured Query Language

B) Simple Query Language

C) Sequential Query Language

D) None

Answer: A) Structured Query Language

27. Which SQL command is used to remove a table?

A) DELETE

B) REMOVE

C) DROP

D) CLEAR

Answer: C) DROP

28. Which normal form removes partial dependency?

A) 1NF

B) 2NF

C) 3NF

D) BCNF

Answer: B) 2NF

29. Which key uniquely identifies a record?

A) Foreign Key

B) Primary Key

C) Candidate Key

D) Super Key

Answer: B) Primary Key

30. Which SQL function is used to count rows?

A) COUNT()

B) SUM()

C) AVG()

D) LENGTH()

Answer: A) COUNT()

7. Operating System

31. Which OS is developed by Linus Torvalds?

A) Windows

B) Linux

C) Unix

D) MacOS

Answer: B) Linux

32. Which scheduling algorithm is non-preemptive?

A) Round Robin

B) Priority

C) Shortest Job First (SJF)

D) Multilevel Queue

Answer: C) SJF

33. Thrashing occurs due to:

A) High CPU usage

B) High paging activity

C) Low I/O operations

D) File system error

Answer: B) High paging activity

34. Which system call creates a new process in Unix?

A) exec()

B) fork()

C) wait()

D) create()

Answer: B) fork()

35. Deadlock requires which condition?

A) Mutual exclusion

- B) Hold and wait
- C) No preemption
- D) Circular wait
- E) All of the above

Answer: E) All of the above

8. Networking

36. IP address is of how many bits in IPv4?

- A) 16
- B) 32
- C) 64
- D) 128

Answer: B) 32

37. Which layer in OSI model deals with routing?

- A) Data link
- B) Transport
- C) Network
- D) Application

Answer: C) Network

38. TCP is a:

- A) Connection-oriented protocol
- B) Connectionless protocol
- C) Both
- D) None

Answer: A) Connection-oriented protocol

39. Which command is used to test connectivity in network?

- A) check
- B) netstat
- C) ping
- D) telnet

Answer: C) ping

40. Port number of HTTP is:

- A) 20
- B) 21
- C) 80
- D) 25

Answer: C) 80

9. Software Engineering

41. The first step in SDLC is:

- A) Design
- B) Requirement analysis
- C) Coding
- D) Testing

Answer: B) Requirement analysis

42. Which model is also known as linear sequential model?

- A) Waterfall model
- B) Spiral model
- C) Prototype model
- D) V-model

Answer: A) Waterfall model

43. Agile methodology emphasizes:

- A) Rigid planning
- B) Iterative development
- C) Documentation only
- D) Sequential design

Answer: B) Iterative development

44. Black box testing is based on:

- A) Internal code logic
- B) External behavior
- C) White box
- D) Debugging

Answer: B) External behavior

45. Which is NOT a software quality attribute?

- A) Reliability
- B) Usability
- C) Portability
- D) Profitability

Answer: D) Profitability

10. Cybersecurity

46. A program that replicates itself is called:

- A) Worm
- B) Trojan
- C) Virus

D) Spyware

Answer: C) Virus

47. Which attack involves overwhelming a server with requests?

A) SQL Injection

B) DoS

C) Phishing

D) Brute force

Answer: B) DoS

48. SSL is used for:

A) Secure web communication

B) Encrypting files

C) Database transactions

D) None

Answer: A) Secure web communication

49. Firewall works on which layer?

A) Application

B) Network

C) Data link

D) Transport

Answer: B) Network

50. Strong password should contain:

A) Only letters

B) Only numbers

C) Combination of letters, numbers & symbols

D) Only lowercase letters

Answer: C) Combination of letters, numbers & symbols

11. Algorithms

51. Time complexity of binary search is:

A) $O(n)$

B) $O(n \log n)$

C) $O(\log n)$

D) $O(1)$

Answer: C) $O(\log n)$

52. Best case of bubble sort:

A) $O(n^2)$

B) $O(n \log n)$

C) $O(n)$

D) $O(1)$

Answer: C) $O(n)$

53. Dijkstra's algorithm is used for:

A) Sorting

B) Shortest path

C) Minimum spanning tree

D) Searching

Answer: B) Shortest path

54. Which is a divide-and-conquer algorithm?

A) Quick sort

B) Insertion sort

C) Bubble sort

D) Selection sort

Answer: A) Quick sort

55. Dynamic programming is based on:

A) Greedy method

B) Backtracking

C) Overlapping subproblems

D) Brute force

Answer: C) Overlapping subproblems

12. Computer Architecture

56. Which register holds the address of next instruction?

A) Accumulator

B) Program Counter

C) MAR

D) MDR

Answer: B) Program Counter

57. Which memory is volatile?

A) ROM

B) RAM

C) Hard Disk

D) CD-ROM

Answer: B) RAM

58. Cache memory is placed between:

A) CPU and RAM

- B) RAM and Hard Disk
- C) Input and CPU
- D) Output and CPU

Answer: A) CPU and RAM

59. Which addressing mode uses value directly?

- A) Immediate
- B) Direct
- C) Indirect
- D) Indexed

Answer: A) Immediate

60. RISC architecture stands for:

- A) Reduced Instruction Set Computer
- B) Random Instruction Set Computer
- C) Required Instruction Simple Code
- D) None

Answer: A) Reduced Instruction Set Computer

13. Digital Logic

61. Binary of $(13)_{10}$ is:

- A) 1100
- B) 1101
- C) 1110
- D) 1011

Answer: B) 1101

62. Which gate is known as universal gate?

- A) AND
- B) OR
- C) NAND
- D) XOR

Answer: C) NAND

63. Half adder consists of:

- A) XOR and AND gate
- B) OR and AND gate
- C) NAND gate only
- D) XOR and OR gate

Answer: A) XOR and AND gate

64. How many flip-flops are required for a 4-bit counter?

- A) 2
- B) 3
- C) 4
- D) 5

Answer: C) 4

65. Gray code is used to:

- A) Detect errors
- B) Prevent spurious output
- C) Encryption
- D) Reduce memory

Answer: B) Prevent spurious output

14. Compiler Design

66. Lexical analysis produces:

- A) Syntax tree
- B) Tokens
- C) Machine code
- D) Byte code

Answer: B) Tokens

67. Which parsing technique is top-down?

- A) LR
- B) SLR
- C) LL
- D) LALR

Answer: C) LL

68. Intermediate code is generated for:

- A) Debugging
- B) Portability
- C) Linking
- D) Tokenizing

Answer: B) Portability

69. Which optimization removes unused code?

- A) Loop unrolling
- B) Dead code elimination
- C) Constant folding

D) Strength reduction

Answer: B) Dead code elimination

70. YACC is used for:

- A) Code optimization
- B) Lexical analysis
- C) Parsing
- D) Code generation

Answer: C) Parsing

15. Operating System (Advanced)

71. Page replacement algorithm that is optimal:

- A) FIFO
- B) LRU
- C) Optimal
- D) Random

Answer: C) Optimal

72. Context switch occurs during:

- A) Interrupt
- B) System call
- C) Process scheduling
- D) All of the above

Answer: D) All of the above

73. Which scheduling gives minimum average waiting time?

- A) FCFS
- B) SJF
- C) Priority
- D) Round Robin

Answer: B) SJF

74. Semaphore is used to solve:

- A) Deadlock
- B) Synchronization
- C) Paging
- D) Fragmentation

Answer: B) Synchronization

75. Internal fragmentation occurs in:

- A) Paging
- B) Segmentation

- C) Contiguous allocation
- D) Both A & B

Answer: A) Paging

16. Networking (Advanced)

76. SMTP is used for:

- A) File transfer
- B) Email
- C) Web browsing
- D) Remote login

Answer: B) Email

77. IPsec provides:

- A) Security for IP packets
- B) Routing
- C) Switching
- D) Error correction

Answer: A) Security for IP packets

78. Which is not a class of IPv4 address?

- A) Class A
- B) Class B
- C) Class E
- D) Class F

Answer: D) Class F

79. MAC address length is:

- A) 32 bits
- B) 48 bits
- C) 64 bits
- D) 128 bits

Answer: B) 48 bits

80. Which protocol resolves IP to MAC?

- A) RARP
- B) ARP
- C) DNS
- D) DHCP

Answer: B) ARP

17. Cloud & Emerging Tech

81. SaaS stands for:

- A) Software as a Service
- B) Storage as a Service
- C) System as a Service
- D) None

Answer: A) Software as a Service

82. Virtualization is used in:

- A) Cloud Computing
- B) Database
- C) Networking only
- D) None

Answer: A) Cloud Computing

83. Example of NoSQL database:

- A) MySQL
- B) MongoDB
- C) Oracle
- D) SQL Server

Answer: B) MongoDB

84. Blockchain is based on:

- A) Centralized ledger
- B) Distributed ledger
- C) File system
- D) DNS

Answer: B) Distributed ledger

85. In IoT, RFID is used for:

- A) Identification
- B) Storage
- C) Routing
- D) Encryption

Answer: A) Identification

18. General Aptitude

86. If $2x + 3 = 11$, then $x = ?$

- A) 3
- B) 4
- C) 5

D) 6

Answer: B) 4

87. The average of 10, 20, 30 is:

A) 15

B) 20

C) 25

D) 30

Answer: B) 20

88. 15% of 200 is:

A) 20

B) 25

C) 30

D) 35

Answer: C) 30

89. Speed = 60 km/hr, time = 2 hrs → Distance = ?

A) 100 km

B) 110 km

C) 120 km

D) 150 km

Answer: C) 120 km

90. If 12 men can finish work in 6 days, 6 men will finish in:

A) 6

B) 12

C) 18

D) 24

Answer: B) 12

19. Logical Reasoning

91. Find the odd one out: 2, 3, 5, 7, 11, 13, 15

Answer: 15 (not prime)

92. Series: 2, 4, 8, 16, ?

A) 18

B) 20

C) 32

D) 64

Answer: C) 32

93. If CAT = 24, DOG = 26, then RAT = ?

- A) 35
- B) 38
- C) 36
- D) 40

Answer: C) 36

94. Which is different: Circle, Triangle, Square, Rectangle?

Answer: Circle (no sides)

95. If $1 \rightarrow A$, $2 \rightarrow B$, then $26 \rightarrow ?$

Answer: Z

20. General Knowledge / Current Tech

96. BEL headquarters is in:

- A) Mumbai
- B) Bengaluru
- C) Chennai
- D) Delhi

Answer: B) Bengaluru

97. Which company developed Windows OS?

- A) Google
- B) Apple
- C) Microsoft
- D) IBM

Answer: C) Microsoft

98. $1 \text{ GB} = ?$

- A) 1000 MB
- B) 1024 MB
- C) 1200 MB
- D) 2048 MB

Answer: B) 1024 MB

99. Father of C programming language:

- A) Bjarne Stroustrup
- B) Dennis Ritchie
- C) James Gosling
- D) Guido van Rossum

Answer: B) Dennis Ritchie

100. 5G technology mainly focuses on:

- A) Low latency & high speed
- B) Only high speed
- C) Only security
- D) Only IoT

Answer: A) Low latency & high speed

C Programming

101. Which function is used to allocate memory dynamically in C?

- A) malloc()
- B) alloc()
- C) new()
- D) create()

Answer: A) malloc()

102. Which keyword is used to return a value from a function?

- A) end
- B) return
- C) break
- D) stop

Answer: B) return

103. Which storage class has default value as zero?

- A) auto
- B) static
- C) register
- D) extern

Answer: B) static

104. sizeof(char) in C is:

- A) 1
- B) 2
- C) 4
- D) Compiler dependent

Answer: A) 1

105. What is the default return type of functions in C (if not specified)?

- A) void
- B) int
- C) float

D) double

Answer: B) int

106. Which operator is used to access structure members?

A) . (dot)

B) -> (arrow)

C) Both A & B

D) None

Answer: C) Both A & B

107. Which function terminates a C program immediately?

A) stop()

B) abort()

C) exit()

D) quit()

Answer: C) exit()

108. Which operator has highest precedence in C?

A) ++

B) *

C) ()

D) sizeof

Answer: C) ()

109. Which type of parameter passing copies actual value to function?

A) Call by reference

B) Call by value

C) Pointer passing

D) None

Answer: B) Call by value

110. Which loop is guaranteed to execute at least once?

A) for

B) while

C) do-while

D) nested loop

Answer: C) do-while

C++

111. Which of these supports compile-time polymorphism?

A) Virtual functions

B) Function overloading

C) Abstract classes

D) None

Answer: B) Function overloading

112. Which keyword prevents a class from being inherited?

A) abstract

B) sealed

C) final

D) protected

Answer: C) final

113. Default constructor has:

A) No parameters

B) One parameter

C) Return type

D) None of these

Answer: A) No parameters

114. Which operator cannot be overloaded in C++?

A) +

B) -

C) :: (scope resolution)

D) *

Answer: C) :: (scope resolution)

115. Pure virtual function is declared using:

A) virtual func(){}

B) virtual func()=0

C) abstract func()

D) static func()

Answer: B) virtual func()=0

116. Which concept hides internal implementation?

A) Inheritance

B) Abstraction

C) Encapsulation

D) Polymorphism

Answer: B) Abstraction

117. STL in C++ stands for:

A) Standard Template Library

B) Simple Template Library

C) System Template Library

D) Static Type Library

Answer: A) Standard Template Library

118. cin is an object of which class?

- A) ostream
- B) istream
- C) iostream
- D) ios

Answer: B) istream

119. Which is NOT a type of constructor?

- A) Default
- B) Copy
- C) Virtual
- D) Parameterized

Answer: C) Virtual

120. Friend function in C++:

- A) Cannot access private members
- B) Can access private members
- C) Must be defined inside class
- D) None

Answer: B) Can access private members

Java

121. Java does not support:

- A) Multiple inheritance using classes
- B) Multithreading
- C) Garbage collection
- D) Interfaces

Answer: A) Multiple inheritance using classes

122. Which package contains collection framework?

- A) java.io
- B) java.util
- C) java.sql
- D) java.lang

Answer: B) java.util

123. Wrapper class for int in Java:

- A) Int
- B) Integer

C) Number

D) Long

Answer: B) Integer

124. Which exception is unchecked?

A) IOException

B) SQLException

C) NullPointerException

D) FileNotFoundException

Answer: C) NullPointerException

125. final keyword in Java can be used with:

A) Variable

B) Method

C) Class

D) All of the above

Answer: D) All of the above

126. Which method is entry point of Java program?

A) init()

B) main()

C) start()

D) run()

Answer: B) main()

127. Which keyword is used to create an object in Java?

A) create

B) malloc

C) new

D) construct

Answer: C) new

128. Which thread is executed by JVM before shutdown?

A) Main thread

B) Daemon thread

C) User thread

D) Worker thread

Answer: B) Daemon thread

129. Which collection class allows unique elements only?

A) ArrayList

B) HashSet

C) Vector

D) Stack

Answer: B) HashSet

130. Which keyword is used for exception handling?

A) check-catch

B) try-catch

C) error-catch

D) throw-catch

Answer: B) try-catch

Python

131. Which function converts string to integer in Python?

A) str()

B) int()

C) chr()

D) ord()

Answer: B) int()

132. Which keyword is used to handle exceptions in Python?

A) catch

B) handle

C) except

D) error

Answer: C) except

133. Output of $2^{**}3$ in Python?

A) 6

B) 8

C) 9

D) 16

Answer: B) 8

134. Which is NOT a core data type in Python?

A) List

B) Dictionary

C) Tuple

D) Tree

Answer: D) Tree

135. Default argument in Python function is:

A) Passed by reference

B) Optional

C) Must be passed

D) None

Answer: B) Optional

136. Which module is used for regular expressions in Python?

A) regex

B) re

C) pyregex

D) search

Answer: B) re

137. Which operator is used for floor division in Python?

A) /

B) //

C) %

D) **

Answer: B) //

138. Python supports multiple inheritance?

A) Yes

B) No

C) Sometimes

D) Only in 3.x

Answer: A) Yes

139. What is the output of bool("")?

A) True

B) False

Answer: B) False

140. Which keyword defines anonymous functions?

A) def

B) func

C) lambda

D) return

Answer: C) lambda

BEL Trainee Engineer – Computer Science MCQs (101–300)

C Programming

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Answer: malloc()

102. Which keyword is used to return a value from a function?

Answer: return

103. Which storage class has default value as zero?

Answer: static

104. sizeof(char) in C is:

Answer: 1

105. Default return type of functions in C is:

Answer: int

106. Which operator is used to access structure members?

Answer: . and ->

107. Which function terminates a C program immediately?

Answer: exit()

108. Operator with highest precedence in C:

Answer: ()

109. Passing copy of actual value to function is called:

Answer: Call by value

110. Loop guaranteed to execute at least once:

Answer: do-while

111. Which header defines malloc?

Answer: stdlib.h

112. Which keyword is used to define constants?

Answer: const

113. What is a pointer to a pointer called?

Answer: Double pointer

114. Which format specifier is used for printing address?

Answer: %p

115. Which keyword is used to include header files?

Answer: #include

116. Null character in C is:

Answer: '\0'

117. Which operator is used for conditional expression?

Answer: ?:

118. Array indexing in C starts with:

Answer: 0

119. Which keyword makes a variable value unchangeable?

Answer: const

120. Function without return type should use:

Answer: void

C++

121. Compile-time polymorphism is achieved by:

Answer: Function overloading

122. Keyword to prevent inheritance:

Answer: final

123. Default constructor has:

Answer: No parameters

124. Operator that cannot be overloaded:

Answer: :: (scope resolution)

125. Pure virtual function declaration:

Answer: virtual func()=0

126. Concept of hiding implementation:

Answer: Abstraction

127. STL stands for:

Answer: Standard Template Library

128. cin is object of:

Answer: istream

129. Which is not a constructor?

Answer: Virtual

130. Friend function can access:

Answer: Private members

131. Multiple inheritance supported in C++?

Answer: Yes

132. Default access specifier in a class:

Answer: private

133. Which operator releases memory in C++?

Answer: delete

134. Which OOP feature binds code and data together?

Answer: Encapsulation

135. Overloading of << is used for:

Answer: Output stream

136. Which concept allows function name reuse with different signatures?

Answer: Function overloading

137. Which inheritance problem is solved by virtual base classes?

Answer: Diamond problem

138. Which keyword creates an object dynamically?

Answer: new

139. RTTI stands for:

Answer: Run-Time Type Information

140. Which keyword refers to current object?

Answer: this

Java

141. Java does not support:

Answer: Multiple inheritance with classes

142. Package for collection framework:

Answer: java.util

143. Wrapper class for int:

Answer: Integer

144. Example of unchecked exception:

Answer: NullPointerException

145. final keyword can be applied to:

Answer: Variable, method, class

146. Entry point of Java program:

Answer: main()

147. Object creation keyword:

Answer: new

148. JVM executes background threads called:

Answer: Daemon threads

149. Collection class that stores only unique elements:

Answer: HashSet

150. Exception handling uses:

Answer: try-catch

151. Which keyword prevents method overriding?

Answer: final

152. Method overloading is:

Answer: Compile-time polymorphism

153. Method overriding is:

Answer: Runtime polymorphism

154. Which keyword is used to inherit a class?

Answer: extends

155. Which interface is used for lambda expressions?

Answer: Functional Interface

156. String in Java is:

Answer: Immutable

157. Which class is parent of all classes?

Answer: Object

158. Which keyword is used to implement an interface?

Answer: implements

159. Which keyword is used to call parent class constructor?

Answer: super

160. Which class is used for threads?

Answer: Thread

Python

161. Function to convert string to int:

Answer: int()

162. Keyword to handle exceptions:

Answer: except

163. Output of $2^{**}3$:

Answer: 8

164. Non-core datatype in Python:

Answer: Tree

165. Default argument in functions is:

Answer: Optional

166. Module for regex in Python:

Answer: re

167. Operator for floor division:

Answer: //

168. Python supports multiple inheritance?

Answer: Yes

169. `bool("")` gives:

Answer: False

170. Anonymous functions use:

Answer: lambda

171. Which function returns length of list?

Answer: len()

172. Dictionary is a collection of:

Answer: Key-value pairs

173. Which keyword exits loop prematurely?

Answer: break

174. Function to read input:

Answer: input()

175. Indexing in Python starts at:

Answer: 0

176. Which method adds element to list?

Answer: append()

177. Which operator checks object identity?

Answer: is

178. Which function converts to string?

Answer: str()

179. Which data type is mutable?

Answer: List

180. Python is:

Answer: Interpreted language

Operating System

181. Which algorithm is preemptive?

Answer: Round Robin

182. Which system call loads program into memory?

Answer: exec()

183. Page replacement giving minimum page faults:

Answer: Optimal

184. Which is deadlock prevention technique?

Answer: Avoid hold and wait

185. Which OS is multitasking?

Answer: Linux

186. Process control block contains:

Answer: Process information

187. Thrashing is caused by:

Answer: Excessive paging

188. Which memory allocation causes external fragmentation?

Answer: Contiguous

189. Banker's algorithm is used for:

Answer: Deadlock avoidance

190. Critical section problem occurs in:

Answer: Multiprocessing

DBMS

191. Which normal form removes transitive dependency?

Answer: 3NF

192. Which SQL command retrieves data?

Answer: SELECT

193. Which SQL keyword combines rows from two tables?

Answer: JOIN

194. Which is NOT a DML command?

Answer: CREATE

195. Which key refers to primary key in another table?

Answer: Foreign key

196. Which ensures no two rows have same value?

Answer: UNIQUE

197. SQL command to modify table structure:

Answer: ALTER

198. ACID in DBMS means:

Answer: Atomicity, Consistency, Isolation, Durability

199. Which indexing improves retrieval time?

Answer: B+ Tree

200. Command to remove all rows but keep table:

Answer: TRUNCATE

Computer Networks

201. DNS works on which layer?

Answer: Application

202. Which protocol is connectionless?

Answer: UDP

203. Port for HTTPS:

Answer: 443

204. Protocol used for remote login:

Answer: Telnet/SSH

205. Addressing used by routers:

Answer: IP address

206. Network device to connect LAN segments:

Answer: Switch

207. Which layer provides reliable delivery?

Answer: Transport

208. IPv6 address size:

Answer: 128 bits

209. Which is not a routing algorithm?

Answer: Token passing

210. Protocol for file transfer:

Answer: FTP

Cybersecurity

211. Attack by injecting malicious code in SQL:

Answer: SQL Injection

212. Which encrypts using public/private key?

Answer: RSA

213. Symmetric encryption example:

Answer: AES

214. Protocol for secure email:

Answer: S/MIME

215. Spyware is:

Answer: Malicious software collecting data

216. Firewall works at:

Answer: Network layer

217. CAPTCHA prevents:

Answer: Automated bots

218. Digital signature provides:

Answer: Authentication

219. Virus attached to programs is:

Answer: File infector virus

220. Phishing is:

Answer: Fraudulent attempt to get info

Computer Architecture

221. CPU speed is measured in:

Answer: GHz

222. Register storing instruction being executed:

Answer: IR (Instruction Register)

223. Von Neumann architecture uses:

Answer: Single memory for code & data

224. Harvard architecture uses:

Answer: Separate memory for code & data

225. ALU performs:

Answer: Arithmetic & Logic operations

226. Pipeline increases:

Answer: Throughput

227. Memory hierarchy is:

Answer: Registers → Cache → RAM → Disk

228. Which memory is non-volatile?

Answer: ROM

229. Cache uses:

Answer: SRAM

230. Which unit controls execution of instructions?

Answer: Control unit

Digital Logic

231. Boolean algebra was introduced by:

Answer: George Boole

232. NOT gate output is:

Answer: Complement

233. Which gate outputs 1 only when inputs are different?

Answer: XOR

234. Binary equivalent of decimal 25:

Answer: 11001

235. Octal base:

Answer: 8

236. Hexadecimal base:

Answer: 16

237. Which flip-flop has a toggle input?

Answer: T flip-flop

238. Full adder has:

Answer: 3 inputs, 2 outputs

239. 2's complement of 1010:

Answer: 0110

240. Which code detects single-bit error?

Answer: Parity

Compiler Design

241. First phase of compiler:

Answer: Lexical analysis

242. Symbol table stores:

Answer: Identifier info

243. Parser checks:

Answer: Syntax

244. Intermediate code improves:

Answer: Portability

245. Code optimization aims to:

Answer: Improve performance

246. Infix to postfix uses:

Answer: Stack

247. DFA is used in:

Answer: Lexical analysis

248. Shift-reduce is:

Answer: Bottom-up parsing

249. LL parser is:

Answer: Top-down

250. YACC tool is for:

Answer: Parser generation

Aptitude

251. 25% of 240 = ?

Answer: 60

252. Average of 5, 10, 15 = ?

Answer: 10

253. If speed = 60 km/hr, distance = 120 km, time = ?

Answer: 2 hours

254. If CP = 100, SP = 120 → Profit % = ?

Answer: 20%

255. Ratio 2:3 equals ?%

Answer: 66.67% and 33.33%

256. $12 \times 15 = ?$

Answer: 180

257. Square root of 144:

Answer: 12

258. LCM of 12 and 18:

Answer: 36

259. If $x=5$, $2x+3=?$

Answer: 13

260. Simple interest on 1000 at 10% for 2 yrs = ?

Answer: 200

Logical Reasoning

261. Odd one: Apple, Mango, Banana, Potato

Answer: Potato

262. Series: 2, 4, 8, 16 → next?

Answer: 32

263. If CAT=24, DOG=26, then RAT=?

Answer: 36

264. Mirror image of 3 looks like:

Answer: Backward 3

265. Which is different: Circle, Triangle, Square

Answer: Circle

266. Code: A=1, Z=26 → code of CAT=?

Answer: 3+1+20=24

267. Statement: All humans are mortal → Socrates is human → ?

Answer: Socrates is mortal

268. If 2=6, 3=12, 4=20 → 5=?

Answer: 30

269. Find missing: 1, 4, 9, 16, ?

Answer: 25

270. Odd: 2, 3, 5, 7, 9

Answer: 9

General Knowledge / Tech

271. BEL HQ located in:

Answer: Bengaluru

272. Year BEL established:

Answer: 1954

273. Which is India's space agency?

Answer: ISRO

274. Founder of C language:

Answer: Dennis Ritchie

275. Java invented by:

Answer: James Gosling

276. Python developed by:

Answer: Guido van Rossum

277. First computer virus:

Answer: Creeper

278. 1 KB = ?

Answer: 1024 bytes

279. ASCII stands for:

Answer: American Standard Code for Information Interchange

280. HTTP stands for:

Answer: HyperText Transfer Protocol

281. Port for DNS:

Answer: 53

282. Linux is:

Answer: Open-source OS

283. Which is not a search engine:

Answer: WhatsApp

284. Cloud service provider:

Answer: AWS

285. IoT stands for:

Answer: Internet of Things

286. 5G provides:

Answer: Low latency, high speed

287. World's first computer:

Answer: ENIAC

288. HTML used for:

Answer: Web page design

289. AI stands for:

Answer: Artificial Intelligence

290. SQL is used for:

Answer: Database management

Extra GK / Current Tech

291. IPv6 uses how many bits?

Answer: 128

292. BEL is a:

Answer: Navratna PSU

293. Linux kernel written in:

Answer: C

294. First search engine:

Answer: Archie

295. Google CEO (2025):

Answer: Sundar Pichai

296. Bluetooth uses:

Answer: Radio waves

297. Wi-Fi standard IEEE:

Answer: 802.11

298. Cybersecurity Day is observed on:

Answer: 30 November

299. Which is a NoSQL DB?

Answer: MongoDB

300. India's supercomputer in 2025:

Answer: PARAM Siddhi-AI

Section A: Computer Fundamentals & Programming (20 Questions)

1. Which of the following is not a high-level language?

- A) C
- B) Assembly
- C) Python
- D) Java

Answer: B

2. Which of the following is not a feature of OOP?

- A) Encapsulation
- B) Polymorphism
- C) Inheritance
- D) Pipelining

Answer: D

3. In C, which operator has the highest precedence?

- A) *
- B) ++
- C) +
- D) =

Answer: B

4. What is the default return type of a function in C if not specified?

- A) int
- B) float
- C) void
- D) double

Answer: A

5. Which of these is not a storage class in C?

- A) auto
- B) register
- C) volatile
- D) extern

Answer: C

6. Java is platform independent because of:

- A) Compiler
- B) JVM
- C) Bytecode
- D) Both B and C

Answer: D

7. Which of the following is not a valid identifier in C?

- A) _temp
- B) temp1
- C) 1temp
- D) temp_var

Answer: C

8. Which data structure is used in recursion?

- A) Queue
- B) Stack
- C) Linked List
- D) Array

Answer: B

9. Which sorting algorithm has the best average case complexity?

- A) Bubble sort
- B) Merge sort
- C) Quick sort
- D) Insertion sort

Answer: B

10. The time complexity of binary search is:

- A) O(n)
- B) O(log n)
- C) O(n log n)
- D) O(1)

Answer: B

11. In DBMS, which normal form removes partial dependency?

- A) 1NF

- B) 2NF
- C) 3NF
- D) BCNF

Answer: B

12. In C, the size of int (on 32-bit machine) is:

- A) 8 bytes
- B) 4 bytes
- C) 2 bytes
- D) 1 byte

Answer: B

13. Which of the following is a non-linear data structure?

- A) Array
- B) Linked List
- C) Tree
- D) Stack

Answer: C

14. Which operator is used for bitwise AND in C?

- A) &&
- B) &
- C) |
- D) %

Answer: B

15. What does SQL stand for?

- A) Structured Query Language
- B) Sequential Query Language
- C) Standard Query Language
- D) Simplified Query Language

Answer: A

16. Deadlock occurs when:

- A) Processes share resources without dependency
- B) Circular wait happens
- C) Resources are unlimited
- D) CPU utilization is maximum

Answer: B

17. In OS, which scheduling algorithm may cause starvation?

- A) FCFS
- B) SJF
- C) Round Robin

D) Priority

Answer: D

18. In networking, which layer ensures reliable communication?

A) Application

B) Transport

C) Network

D) Data Link

Answer: B

19. Which IP address is reserved for loopback testing?

A) 127.0.0.1

B) 192.168.1.1

C) 255.255.255.255

D) 0.0.0.0

Answer: A

20. Which of the following is not a NoSQL database?

A) MongoDB

B) Cassandra

C) MySQL

D) CouchDB

Answer: C



BEL Trainee Engineer (CS) – 100 MCQs with Answers

Section A: Programming & Computer Fundamentals (Q1–20)

1. Which of the following is not a high-level language?

A) C

B) Assembly

C) Python

D) Java

Answer: B

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A) Encapsulation

B) Polymorphism

C) Inheritance

D) Pipelining

Answer: D

3. In C, which operator has the highest precedence?

- A) *
- B) ++
- C) +
- D) =

Answer: B

4. Default return type of a C function if not specified?

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- B) float
- C) void
- D) double

Answer: A

5. Which is not a storage class in C?

- A) auto
- B) register
- C) volatile
- D) extern

Answer: C

6. Java is platform independent because of:

- A) Compiler
- B) JVM
- C) Bytecode
- D) Both B and C

Answer: D

7. Invalid C identifier?

- A) _temp
- B) temp1
- C) 1temp
- D) temp_var

Answer: C

8. Recursion uses which data structure?

- A) Queue
- B) Stack
- C) Linked List
- D) Array

Answer: B

9. Sorting with best average case complexity?

- A) Bubble

- B) Merge
- C) Quick
- D) Insertion

Answer: B

10. Binary search complexity?

- A) $O(n)$
- B) $O(\log n)$
- C) $O(n \log n)$
- D) $O(1)$

Answer: B

11. Normal form removing partial dependency?

- A) 1NF
- B) 2NF
- C) 3NF
- D) BCNF

Answer: B

12. Size of int in 32-bit system?

- A) 8 bytes
- B) 4 bytes
- C) 2 bytes
- D) 1 byte

Answer: B

13. Non-linear data structure?

- A) Array
- B) Linked List
- C) Tree
- D) Stack

Answer: C

14. Bitwise AND operator in C?

- A) `&&`
- B) `&`
- C) `|`
- D) `%`

Answer: B

15. SQL stands for?

- A) Structured Query Language
- B) Sequential Query Language
- C) Standard Query Language

D) Simplified Query Language

Answer: A

16. Deadlock occurs when:

- A) No dependency
- B) Circular wait
- C) Unlimited resources
- D) Max CPU use

Answer: B

17. Scheduling algorithm causing starvation?

- A) FCFS
- B) SJF
- C) Round Robin
- D) Priority

Answer: D

18. Reliable communication layer?

- A) Application
- B) Transport
- C) Network
- D) Data Link

Answer: B

19. Loopback IP address?

- A) 127.0.0.1
- B) 192.168.1.1
- C) 255.255.255.255
- D) 0.0.0.0

Answer: A

20. Which is not a NoSQL DB?

- A) MongoDB
- B) Cassandra
- C) MySQL
- D) CouchDB

Answer: C

Section B: Data Structures & Algorithms (Q21–40)

21. Which data structure is used for BFS?

- A) Stack
- B) Queue

C) Linked List

D) Tree

Answer: B

22. Height of a complete binary tree with n nodes?

A) $O(1)$

B) $O(\log n)$

C) $O(n)$

D) $O(n \log n)$

Answer: B

23. Average time complexity of quicksort?

A) $O(n)$

B) $O(\log n)$

C) $O(n \log n)$

D) $O(n^2)$

Answer: C

24. Worst-case time complexity of linear search?

A) $O(1)$

B) $O(\log n)$

C) $O(n)$

D) $O(n \log n)$

Answer: C

25. Which traversal is used for expression tree evaluation?

A) Inorder

B) Preorder

C) Postorder

D) Level order

Answer: C

26. Hash table collision resolution using chaining requires?

A) Array

B) Queue

C) Linked list

D) Stack

Answer: C

27. Which data structure is best for implementing LRU cache?

A) Array

B) Queue

C) Stack

D) LinkedHashMap

Answer: D

28. Time complexity to access element in array?

- A) O(1)
- B) O(log n)
- C) O(n)
- D) O(n^2)

Answer: A

29. A graph with no cycles is called?

- A) Complete
- B) Tree
- C) DAG
- D) Bipartite

Answer: C

30. Prim's algorithm is used for?

- A) Shortest path
- B) Minimum spanning tree
- C) Maximum flow
- D) All pairs path

Answer: B

31. Worst-case height of AVL tree?

- A) O(n)
- B) O(log n)
- C) O(n log n)
- D) O(\sqrt{n})

Answer: B

32. Which sorting algorithm is stable?

- A) Quick sort
- B) Merge sort
- C) Heap sort
- D) Selection sort

Answer: B

33. In hash tables, load factor = ?

- A) n/m
- B) m/n
- C) $n \times m$
- D) $n+m$

Answer: A

(where n = elements, m = table size)

34. Dijkstra's algorithm fails if graph has?

- A) Negative edges
- B) Cycles
- C) Self-loops
- D) Undirected edges

Answer: A

35. Stack overflow occurs when?

- A) Queue is full
- B) Heap is full
- C) Stack pointer exceeds bound
- D) None

Answer: C

36. Which DS uses FIFO?

- A) Stack
- B) Queue
- C) Tree
- D) Graph

Answer: B

37. Best case complexity of bubble sort?

- A) $O(n^2)$
- B) $O(n)$
- C) $O(\log n)$
- D) $O(1)$

Answer: B

38. Infix to postfix conversion uses?

- A) Queue
- B) Stack
- C) Tree
- D) Array

Answer: B

39. A binary tree of height h has maximum nodes = ?

- A) 2^h
- B) $2^{(h+1)} - 1$
- C) h^2
- D) $h \log h$

Answer: B

40. Minimum number of edges in a connected graph with n nodes?

- A) n
- B) n-1
- C) n+1
- D) n^2

Answer: B

Section C: Operating System & DBMS (Q41–60)

41. Page replacement algorithm with minimum page faults?

- A) FIFO
- B) LRU
- C) Optimal
- D) Clock

Answer: C

42. Which is not a type of OS?

- A) Batch
- B) Time-sharing
- C) Real-time
- D) Linking

Answer: D

43. Critical section problem relates to:

- A) Memory mgmt
- B) CPU scheduling
- C) Process synchronization
- D) Deadlock recovery

Answer: C

44. Banker's algorithm is used for:

- A) Deadlock avoidance
- B) Deadlock prevention
- C) Deadlock detection
- D) Context switching

Answer: A

45. Thrashing occurs due to:

- A) High CPU utilization
- B) Excessive paging
- C) Disk failure

D) Stack overflow

Answer: B

46. In DBMS, ACID “I” stands for?

- A) Isolation
- B) Integrity
- C) Indexing
- D) Inheritance

Answer: A

47. B+ tree is preferred over B-tree because?

- A) Faster search
- B) All records at leaf
- C) Balanced structure
- D) All above

Answer: D

48. SQL command to remove table completely?

- A) DELETE
- B) DROP
- C) TRUNCATE
- D) REMOVE

Answer: B

49. Which level of DBMS architecture provides physical storage details?

- A) Internal
- B) External
- C) Conceptual
- D) Relational

Answer: A

50. Dirty read occurs in?

- A) Lost update
- B) Uncommitted dependency
- C) Phantom read
- D) Consistent read

Answer: B

51. Round robin scheduling time complexity depends on?

- A) Time quantum
- B) Burst time
- C) Priority
- D) Arrival time

Answer: A

52. Fragmentation occurs in?

- A) DBMS only
- B) Memory management only
- C) Both
- D) None

Answer: C

53. RAID-5 provides?

- A) Mirroring only
- B) Striping only
- C) Striping + Parity
- D) None

Answer: C

54. Which SQL clause groups rows?

- A) GROUP BY
- B) HAVING
- C) ORDER BY
- D) WHERE

Answer: A

55. Starvation solution in OS?

- A) Priority aging
- B) Deadlock detection
- C) Paging
- D) Segmentation

Answer: A

56. In DBMS, candidate key is?

- A) Unique + Not null
- B) Only unique
- C) Only not null
- D) Superkey with redundancy

Answer: A

57. Context switch occurs when?

- A) Process terminates
- B) Process changes state
- C) I/O request
- D) All of above

Answer: D

58. SQL command used to change structure of table?

- A) UPDATE

- B) MODIFY
- C) ALTER
- D) CHANGE

Answer: C

59. In DBMS, view is?

- A) Virtual table
- B) Physical table
- C) Schema
- D) Index

Answer: A

60. Which scheduling is preemptive?

- A) FCFS
- B) Round robin
- C) Priority (non-preemptive)
- D) None

Answer: B

Section D: Networking & Security (Q61–80)

61. OSI model has how many layers?

- A) 5
- B) 6
- C) 7
- D) 8

Answer: C

62. Protocol for email?

- A) HTTP
- B) SMTP
- C) FTP
- D) SNMP

Answer: B

63. IP address length in IPv6?

- A) 32 bits
- B) 64 bits
- C) 128 bits
- D) 256 bits

Answer: C

64. Port number of HTTP?

- A) 20
- B) 21
- C) 25
- D) 80

Answer: D

65. Which is not a routing algorithm?

- A) Distance vector
- B) Link state
- C) Flooding
- D) Paging

Answer: D

66. CRC is used for?

- A) Encryption
- B) Error detection
- C) Routing
- D) Compression

Answer: B

67. In subnetting, /24 means subnet mask?

- A) 255.255.255.0
- B) 255.255.0.0
- C) 255.0.0.0
- D) 255.255.255.255

Answer: A

68. Which uses 3-way handshake?

- A) UDP
- B) TCP
- C) ICMP
- D) ARP

Answer: B

69. Which is a connectionless protocol?

- A) TCP
- B) UDP
- C) HTTP
- D) FTP

Answer: B

70. Firewall works at which OSI layer?

- A) Network

- B) Data link
- C) Transport
- D) Application

Answer: A

71. SSL is used for?

- A) Secure communication
- B) File sharing
- C) Load balancing
- D) Routing

Answer: A

72. DNS translates?

- A) IP → MAC
- B) Name → IP
- C) Port → Protocol
- D) IP → Domain

Answer: B

73. ARP is used for?

- A) Resolve IP → MAC
- B) MAC → IP
- C) Port → IP
- D) DNS mapping

Answer: A

74. Which is not a private IP?

- A) 10.0.0.1
- B) 172.16.0.1
- C) 192.168.1.1
- D) 8.8.8.8

Answer: D

75. FTP default ports are?

- A) 20 & 21
- B) 21 & 22
- C) 25 & 110
- D) 80 & 443

Answer: A

76. SNMP is used for?

- A) File transfer
- B) Email
- C) Network management

D) Routing

Answer: C

77. Which algorithm is used in RSA?

A) Symmetric

B) Asymmetric

C) Hashing

D) Block cipher

Answer: B

78. Public key encryption means?

A) Same key for enc/dec

B) Different key for enc/dec

C) No key

D) Random key

Answer: B

79. Example of symmetric encryption?

A) AES

B) RSA

C) ECC

D) Diffie-Hellman

Answer: A

80. IDS is used for?

A) Intrusion Detection

B) Internet Data Service

C) Image Delivery System

D) Input Device Scan

Answer: A

Section E: Aptitude & General Awareness (Q81–100)

81. If 12 men finish a work in 18 days, 6 men will finish in?

A) 36

B) 24

C) 18

D) 12

Answer: A

82. Simplify: $(3/5) \div (15/25) = ?$

A) 1

B) 5/9

C) 1/2

D) 9/5

Answer: C

83. Average of 10, 20, 30, 40, 50 = ?

A) 20

B) 25

C) 30

D) 35

Answer: C

84. Compound interest is always ____ than simple interest for >1 year.

A) Equal

B) Less

C) Greater

D) None

Answer: C

85. Ratio of 2:3 equivalent to?

A) 20:30

B) 6:9

C) 4:6

D) All

Answer: D

86. If speed = 60 km/h, time = 2h, distance = ?

A) 100

B) 110

C) 120

D) 130

Answer: C

87. 2, 6, 12, 20, ?

A) 28

B) 30

C) 32

D) 34

Answer: B

(pattern: $n^2 + n \rightarrow 2, 6, 12, 20, 30$)

88. Which is largest prime < 100?

A) 97

B) 89

C) 83

D) 91

Answer: A

89. If $A:B = 2:3$, $B:C = 4:5 \rightarrow A:C?$

A) 8:15

B) 2:5

C) 3:5

D) 4:15

Answer: A

90. If 40% of $x = 200$, then $x = ?$

A) 400

B) 450

C) 500

D) 600

Answer: C

91. BEL HQ is located at?

A) Delhi

B) Bangalore

C) Hyderabad

D) Pune

Answer: B

92. BEL founded in which year?

A) 1952

B) 1954

C) 1964

D) 1971

Answer: B

93. BEL is a?

A) Maharatna

B) Navratna

C) Miniratna

D) None

Answer: B

94. BEL comes under which ministry?

A) Home

B) Defence

C) Science & Tech

D) Communications

Answer: B

95. Current CMD of BEL (2025)?

- A) Anandi Ramalingam
- B) Bhanu Prakash Srivastava
- C) Rakesh Sharma
- D) Ajit Doval

Answer: B

96. BEL primarily makes?

- A) Cars
- B) Consumer Electronics
- C) Defence Electronics
- D) Heavy Machinery

Answer: C

97. BEL has how many factories in India?

- A) 3
- B) 6
- C) 9
- D) 12

Answer: C

98. BEL tagline is?

- A) Quality Electronics
- B) Quality, Technology, Innovation
- C) Electronics for Nation's Defence
- D) Empowering Defence

Answer: B

99. BEL is a ___ company.

- A) Private
- B) Public sector (PSU)
- C) Startup
- D) Cooperative

Answer: B

100. BEL shares are listed on?

- A) NSE & BSE
- B) NYSE
- C) Only BSE
- D) None

Answer: A

Section A: Computer Science Fundamentals

1. Which scheduling algorithm may cause starvation?

- A) FCFS
- B) Round Robin
- C) Priority Scheduling
- D) Shortest Job First

Answer: C & D

2. Which normal form removes partial dependency?

- A) 1NF
- B) 2NF
- C) 3NF
- D) BCNF

Answer: B

3. TCP works at which OSI layer?

- A) Application
- B) Transport
- C) Network
- D) Data Link

Answer: B

4. Which data structure is used in recursion?

- A) Queue
- B) Stack
- C) Linked List
- D) Graph

Answer: B

5. Thrashing occurs due to?

- A) CPU overload
- B) Excessive paging
- C) Disk failure
- D) Cache miss

Answer: B

Section B: Programming

6. What is the default return type of a function in C if not specified?

- A) void
- B) int
- C) float

D) double

Answer: B

7. Which keyword is used in Java for inheritance?

- A) implements
- B) extends
- C) inherits
- D) super

Answer: B

8. Python is a ___ language.

- A) Compiled
- B) Interpreted
- C) Assembly
- D) Machine

Answer: B

9. Which of the following is NOT a feature of OOP?

- A) Encapsulation
- B) Abstraction
- C) Polymorphism
- D) Fragmentation

Answer: D

10. In C++, which operator cannot be overloaded?

- A) +
- B) ::
- C) []
- D) ()

Answer: B

Section C: Data Structures & Algorithms

11. Time complexity of binary search?

- A) $O(n)$
- B) $O(\log n)$
- C) $O(n \log n)$
- D) $O(1)$

Answer: B

12. Which sorting is stable?

- A) Quick sort
- B) Merge sort

- C) Heap sort
- D) Selection sort

Answer: B

13. Graph traversal using Queue is?

- A) DFS
- B) BFS
- C) Both
- D) None

Answer: B

14. Hashing is used for?

- A) Searching
- B) Sorting
- C) Traversing
- D) Encryption

Answer: A

15. Height of a complete binary tree with N nodes?

- A) $\log_2 N$
- B) N
- C) N^2
- D) \sqrt{N}

Answer: A

Section D: Digital & Microprocessors

16. Binary of -5 in 8-bit 2's complement?

- A) 11111011
- B) 11111101
- C) 00000101
- D) 10000101

Answer: A

17. 8086 microprocessor is a?

- A) 8-bit
- B) 16-bit
- C) 32-bit
- D) 64-bit

Answer: B

18. Which logic gate is called a Universal Gate?

- A) AND

- B) OR
- C) NAND
- D) XOR

Answer: C

19. Which memory is volatile?

- A) ROM
- B) Hard Disk
- C) RAM
- D) Flash

Answer: C

20. Which bus carries the address in microprocessor?

- A) Control bus
- B) Data bus
- C) Address bus
- D) System bus

Answer: C

Section E: Aptitude & Reasoning

21. If A = 2, B = 4, then value of (A² + B²)?

- A) 18
- B) 20
- C) 22
- D) 24

Answer: B

22. Train 120m long crosses a pole in 10s. Speed?

- A) 12 km/h
- B) 36 km/h
- C) 43.2 km/h
- D) 72 km/h

Answer: C

23. Ratio 2:3 equivalent to?

- A) 20:30
- B) 8:10
- C) 6:9
- D) All of these

Answer: D

24. Odd one out: 2, 6, 12, 20, 30

- A) 6
- B) 12
- C) 20
- D) 30

Answer: D

25. Next in series: 3, 9, 27, 81, ?

- A) 162
- B) 243
- C) 324
- D) 729

Answer: B

Section A: Computer Science Fundamentals (Contd.)

26. Deadlock avoidance uses which algorithm?

- A) Banker's algorithm
- B) Round robin
- C) FIFO
- D) Multilevel queue

Answer: A

27. Which protocol is used for email retrieval?

- A) SMTP
- B) POP3
- C) HTTP
- D) FTP

Answer: B

28. Which SQL command is used to remove a table permanently?

- A) DELETE
- B) TRUNCATE
- C) DROP
- D) CLEAR

Answer: C

29. Primary key in a table must be:

- A) Unique
- B) Not Null
- C) Both A & B

D) None

Answer: C

30. Fragmentation in DBMS means?

- A) Splitting relation into smaller parts
- B) Repeating tuples
- C) Redundant attributes
- D) None

Answer: A

Section B: Programming (Contd.)

31. In C, size of int in most 32-bit compilers?

- A) 1 byte
- B) 2 bytes
- C) 4 bytes
- D) 8 bytes

Answer: C

32. Which is faster in Java?

- A) Interface
- B) Abstract class
- C) Final class
- D) None

Answer: C

33. Which symbol is used for comments in Python?

- A) //
- B) /* */
- C) #
- D) %

Answer: C

34. Which function in C is used to allocate memory dynamically?

- A) malloc()
- B) alloc()
- C) calloc()
- D) realloc()

Answer: A

35. In Java, garbage collection is done by?

- A) JVM
- B) Compiler

- C) Programmer
- D) OS

Answer: A

Section C: Data Structures & Algorithms (Contd.)

36. Which data structure uses FIFO?

- A) Stack
- B) Queue
- C) Linked list
- D) Tree

Answer: B

37. Which traversal is used for expression trees?

- A) Preorder
- B) Inorder
- C) Postorder
- D) Level order

Answer: C

38. Worst-case time complexity of QuickSort?

- A) $O(n \log n)$
- B) $O(\log n)$
- C) $O(n^2)$
- D) $O(n)$

Answer: C

39. Heap is used for which sorting?

- A) Merge
- B) Quick
- C) Selection
- D) Heap

Answer: D

40. Which graph has all vertices connected?

- A) Tree
- B) Complete Graph
- C) Directed Graph
- D) Sparse Graph

Answer: B

Section D: Digital & Microprocessors (Contd.)

41. Which flip-flop is called a "universal flip-flop"?

- A) SR
- B) D
- C) JK
- D) T

Answer: C

42. Decimal 255 in hexadecimal is?

- A) FF
- B) 1F
- C) F0
- D) OF

Answer: A

43. Which register holds the address of next instruction?

- A) MAR
- B) PC
- C) IR
- D) MDR

Answer: B

44. Cache memory works on the principle of:

- A) Locality of reference
- B) FIFO
- C) Multithreading
- D) Random access

Answer: A

45. ALU performs:

- A) Only arithmetic
- B) Only logic
- C) Both arithmetic and logic
- D) Only comparison

Answer: C

Section E: Aptitude & Reasoning (Contd.)

46. If 12 men can build a wall in 10 days, 6 men will build it in?

- A) 10 days
- B) 20 days
- C) 15 days

D) 5 days

Answer: B

47. **The average of 10, 20, 30, 40, 50 is?**

A) 25

B) 30

C) 35

D) 40

Answer: B

48. **Find the missing number: 7, 14, 28, 56, ?**

A) 84

B) 100

C) 112

D) 128

Answer: C

49. **If 'BEL' = 15, then 'DEF' = ? (Alphabetical sum)**

A) 12

B) 18

C) 21

D) 24

Answer: B

50. **Two dice are thrown. Probability of sum = 7?**

A) 1/6

B) 1/12

C) 1/36

D) 1/18

Answer: A

Section F: Software Engineering & General CS

51. **Waterfall model is also called?**

A) Sequential model

B) Spiral model

C) Agile model

D) Incremental model

Answer: A

52. **Which diagram shows system interactions?**

A) Class diagram

B) Sequence diagram

C) ER diagram

D) DFD

Answer: B

53. Testing done without program execution is?

A) Black box testing

B) White box testing

C) Static testing

D) Dynamic testing

Answer: C

54. Agile methodology is based on:

A) Iterations

B) Sequential phases

C) Prototype

D) Waterfall

Answer: A

55. Which one is NOT an SDLC phase?

A) Requirement analysis

B) Design

C) Coding

D) Debugging only

Answer: D

Section G: Computer Networks

56. IPV4 address size is?

A) 16 bits

B) 32 bits

C) 64 bits

D) 128 bits

Answer: B

57. Which is NOT a routing algorithm?

A) Distance vector

B) Link state

C) Flooding

D) Paging

Answer: D

58. Switch works at which OSI layer?

A) Physical

- B) Data Link
- C) Network
- D) Transport

Answer: B

59. Default port of HTTP?

- A) 20
- B) 21
- C) 25
- D) 80

Answer: D

60. Which protocol provides reliable delivery?

- A) UDP
- B) TCP
- C) IP
- D) ICMP

Answer: B

Section H: General Knowledge (BEL/Electronics focus)

61. BEL headquarters is at?

- A) Hyderabad
- B) Bengaluru
- C) Pune
- D) Ghaziabad

Answer: B

62. BEL is a ___ Navratna company.

- A) Mini-Ratna
- B) Maharatna
- C) Navratna
- D) PSU

Answer: C

63. Year of establishment of BEL?

- A) 1954
- B) 1960
- C) 1971
- D) 1982

Answer: A

64. BEL mainly works in the field of:

- A) Food
- B) Electronics & Defence
- C) Automobiles
- D) Power

Answer: B

65. BEL's first product was?

- A) Radios
- B) Radar
- C) Transmitter
- D) TV

Answer: A

Remaining Mixed Questions

66. SQL full form?

- A) Structured Query Language
- B) Simple Query Language
- C) System Query Language
- D) Sequential Query Language

Answer: A

67. Binary 1011 = ? decimal

- A) 9
- B) 10
- C) 11
- D) 12

Answer: C

68. O(log n) complexity is better than O(n).

- A) True
- B) False

Answer: A

69. Semaphore is used for?

- A) Synchronization
- B) Memory allocation
- C) Deadlock
- D) Paging

Answer: A

70. OSI has how many layers?

- A) 5
- B) 6
- C) 7
- D) 8

Answer: C

More Aptitude

71. Square root of 1764?

- A) 40
- B) 41
- C) 42
- D) 44

Answer: C

72. Find odd: 8, 27, 64, 125, 216, 343

- A) 27
- B) 64
- C) 125
- D) 216

Answer: B

73. If speed = distance/time, then time = ?

- A) distance × speed
- B) speed/distance
- C) distance/speed
- D) none

Answer: C

74. Ratio of 45 minutes to 2 hours?

- A) 3:8
- B) 3:4
- C) 3:2
- D) 3:6

Answer: B

75. LCM of 12 and 18?

- A) 36
- B) 54
- C) 72

D) 108

Answer: A

Final 25 (Quick Fire)

76. FAT stands for? → **File Allocation Table**

77. Java was developed by? → **James Gosling**

78. In OS, paging avoids? → **External fragmentation**

79. Example of DBMS software? → **Oracle**

80. IPv6 address size? → **128 bits**

81. Which protocol transfers files? → **FTP**

82. Primary memory is? → **RAM**

83. In C, printf belongs to? → **stdio.h**

84. HTML is a? → **Markup language**

85. Full form of CSS? → **Cascading Style Sheets**

86. In binary, 2's complement of 1100? → **0100**

87. Stack uses which principle? → **LIFO**

88. Example of NoSQL DB? → **MongoDB**

89. Default subnet mask of Class C? → **255.255.255.0**

90. 1 KB = ? → **1024 bytes**

91. In graph theory, Euler path visits? → **Every edge once**

92. Python uses indentation instead of? → **Braces**

93. C++ invented by? → **Bjarne Stroustrup**

94. Example of open-source OS? → **Linux**

95. IP address uniquely identifies? → **A device in network**

96. 8085 microprocessor is? → **8-bit**

97. SQL command to extract records? → **SELECT**

98. SSL works at which layer? → **Transport**

99. Odd one: Chrome, Firefox, Windows, Safari → **Windows**

100. ASCII stands for? → **American Standard Code for Information Interchange**

Section A: Computer Networks

101. **Which of the following is NOT a wireless communication technology?**

- A) Bluetooth
- B) Wi-Fi
- C) Ethernet
- D) ZigBee

Answer: C

102. **DNS is used for?**

- A) Encrypting data
- B) Translating domain names to IP addresses
- C) Email transfer
- D) File transfer

Answer: B

103. **Default port of HTTPS is?**

- A) 21
- B) 22
- C) 443
- D) 8080

Answer: C

104. **Which is a connectionless protocol?**

- A) TCP
- B) UDP
- C) FTP
- D) SMTP

Answer: B

105. **Maximum length of IPv4 address in dotted decimal form?**

- A) 12 characters
- B) 15 characters
- C) 20 characters
- D) 10 characters

Answer: B

106. **Which topology has a single point of failure?**

- A) Star
- B) Bus
- C) Ring

D) Mesh

Answer: A

107. **Which layer handles encryption in OSI?**

- A) Presentation
- B) Session
- C) Transport
- D) Application

Answer: A

108. **SMTP works at which OSI layer?**

- A) Application
- B) Transport
- C) Session
- D) Network

Answer: A

109. **Which device separates LANs?**

- A) Switch
- B) Router
- C) Hub
- D) Repeater

Answer: B

110. **Which is NOT an application layer protocol?**

- A) HTTP
- B) FTP
- C) ARP
- D) DNS

Answer: C

Section B: Operating Systems

111. **Round robin scheduling uses which parameter?**

- A) Burst time
- B) Quantum time
- C) Priority
- D) Deadline

Answer: B

112. **In paging, page table maps:**

- A) Logical to physical address
- B) Process to I/O

- C) Virtual memory to CPU
- D) None

Answer: A

113. **Critical section problem is related to?**

- A) Synchronization
- B) Paging
- C) Deadlock
- D) Scheduling

Answer: A

114. **Which is NOT a disk scheduling algorithm?**

- A) FCFS
- B) SSTF
- C) SCAN
- D) FIFO queue

Answer: D

115. **Thrashing is controlled by?**

- A) Scheduler
- B) Page fault rate
- C) Deadlock detector
- D) Context switching

Answer: B

116. **In Unix, which command lists files?**

- A) list
- B) ls
- C) show
- D) display

Answer: B

117. **Which file system is used in Windows?**

- A) ext3
- B) FAT32
- C) NTFS
- D) Both B & C

Answer: D

118. **Which memory has the fastest access?**

- A) Cache
- B) Main memory
- C) Virtual memory

D) Hard disk

Answer: A

119. **Context switch is needed in?**

- A) Multiprogramming
- B) Multitasking
- C) Process scheduling
- D) All of these

Answer: D

120. **Which OS is real-time?**

- A) MS Windows
- B) RTOS
- C) Unix
- D) Linux

Answer: B

Section C: Database Management

121. **Which key is used to uniquely identify a row?**

- A) Foreign key
- B) Primary key
- C) Candidate key
- D) Alternate key

Answer: B

122. **SQL command to modify structure of a table?**

- A) UPDATE
- B) MODIFY
- C) ALTER
- D) CHANGE

Answer: C

123. **Entity-Relationship model was proposed by?**

- A) Codd
- B) Chen
- C) Dijkstra
- D) Knuth

Answer: B

124. **ACID properties in DBMS: A = ?**

- A) Accuracy
- B) Atomicity

C) Availability

D) Access

Answer: B

125. **Which normal form removes transitive dependency?**

A) 2NF

B) 3NF

C) BCNF

D) 4NF

Answer: B

126. **SQL command for removing all rows but keeping structure?**

A) DELETE

B) DROP

C) TRUNCATE

D) CLEAR

Answer: C

127. **Which join returns only matching rows?**

A) Inner join

B) Left join

C) Right join

D) Full join

Answer: A

128. **Stored procedures are used in?**

A) Application layer

B) DBMS

C) Operating system

D) None

Answer: B

129. **Which index type is fastest?**

A) Dense index

B) Sparse index

C) B+ Tree

D) Hash index

Answer: D

130. **In SQL, COUNT(*) returns?**

A) Sum of column

B) Max value

C) Number of rows

D) Avg value

Answer: C

Section D: Data Structures & Algorithms

131. **Which data structure is used in BFS?**

A) Stack

B) Queue

C) Array

D) Tree

Answer: B

132. **Which is NOT a balanced tree?**

A) AVL tree

B) Red-Black tree

C) B-tree

D) Binary search tree

Answer: D

133. **Best case of insertion sort is?**

A) $O(n \log n)$

B) $O(n^2)$

C) $O(n)$

D) $O(1)$

Answer: C

134. **Which sorting has worst-case $O(n \log n)$?**

A) Merge sort

B) Quick sort

C) Heap sort

D) Bubble sort

Answer: A

135. **Which graph representation uses less memory?**

A) Adjacency list

B) Adjacency matrix

C) Both

D) None

Answer: A

136. **Stack overflow occurs when?**

A) Stack is empty

B) Stack is full

C) Queue is full

D) None

Answer: B

137. **Hash collision resolution method?**

A) Linear probing

B) Chaining

C) Double hashing

D) All of these

Answer: D

138. **DFS uses which data structure?**

A) Stack

B) Queue

C) Array

D) Hash

Answer: A

139. **Height of binary search tree in worst case?**

A) $\log n$

B) n

C) \sqrt{n}

D) $n \log n$

Answer: B

140. **Which is NOT an application of stack?**

A) Recursion

B) Undo operation

C) Queue implementation

D) Expression evaluation

Answer: C

Section E: Programming

141. **In C, sizeof(char) = ?**

A) 1

B) 2

C) 4

D) 8

Answer: A

142. **Which loop executes at least once in C?**

A) for

- B) while
- C) do-while
- D) None

Answer: C

143. **Which is not a valid variable name in Python?**

- A) var1
- B) _temp
- C) 1value
- D) value_1

Answer: C

144. **In Java, int is of size?**

- A) 2 bytes
- B) 4 bytes
- C) 8 bytes
- D) 16 bytes

Answer: B

145. **In C++, cin is used for?**

- A) Input
- B) Output
- C) File handling
- D) None

Answer: A

146. **Python is case-sensitive.**

- A) True
- B) False

Answer: A

147. **Which is not a Java keyword?**

- A) static
- B) class
- C) public
- D) main

Answer: D

148. **Which operator has highest precedence in C?**

- A) *
- B) ()
- C) ++
- D) %

Answer: B

149. **NULL in C means?**

- A) 0
- B) Empty
- C) Undefined
- D) Both A & B

Answer: D

150. **Which is NOT a primitive data type in Java?**

- A) int
- B) char
- C) String
- D) boolean

Answer: C

Section F: Aptitude & Reasoning

151. **Simplify: $(144 \div 12) \times 3$**

- A) 24
- B) 36
- C) 48
- D) 18

Answer: B

152. **A train 200m long runs at 60 km/h. Time to cross a pole?**

- A) 12s
- B) 15s
- C) 20s
- D) 25s

Answer: C

153. **If A:B = 3:4 and B:C = 5:6, then A:C = ?**

- A) 15:24
- B) 5:6
- C) 3:6
- D) 2:3

Answer: A

154. **Average of first 10 natural numbers?**

- A) 5
- B) 5.5
- C) 6

D) 6.5

Answer: B

155. **Simple Interest on ₹1000 at 5% for 2 years?**

A) ₹50

B) ₹100

C) ₹200

D) ₹150

Answer: B

156. **Next in series: 2, 6, 12, 20, 30, ?**

A) 36

B) 40

C) 42

D) 44

Answer: C

157. **Odd one out: 31, 37, 41, 43, 51**

A) 31

B) 37

C) 41

D) 51

Answer: D

158. **Find HCF of 24 and 36.**

A) 6

B) 12

C) 18

D) 24

Answer: B

159. **Solve: 25% of 200 + 50% of 400 = ?**

A) 200

B) 250

C) 300

D) 350

Answer: C

160. **Square of 99?**

A) 9801

B) 9901

C) 9999

D) 10001

Answer: A

Section G: Digital & Microprocessors

161. Which is volatile?

- A) ROM
- B) PROM
- C) RAM
- D) EEPROM

Answer: C

162. Which logic family is fastest?

- A) TTL
- B) CMOS
- C) ECL
- D) RTL

Answer: C

163. Full adder has how many inputs?

- A) 2
- B) 3
- C) 4
- D) 5

Answer: B

164. Gray code is used for?

- A) Error detection
- B) Minimizing errors in digital circuits
- C) Encryption
- D) Sorting

Answer: B

165. 8086 microprocessor has how many address lines?

- A) 16
- B) 20
- C) 24
- D) 32

Answer: B

166. Instruction cycle consists of?

- A) Fetch + Decode + Execute
- B) Fetch + Store
- C) Execute only

D) None

Answer: A

167. **Which is NOT sequential logic?**

A) Flip-flop

B) Counter

C) Register

D) Decoder

Answer: D

168. **Cache memory acts between?**

A) CPU and RAM

B) RAM and HDD

C) CPU and I/O

D) ROM and CPU

Answer: A

169. **EEPROM can be erased by?**

A) UV rays

B) Electrical signals

C) Both A & B

D) None

Answer: B

170. **1's complement of 1010 = ?**

A) 0101

B) 1111

C) 0101

D) 1001

Answer: A

Section H: General Awareness & BEL

171. **BEL is under which ministry?**

A) Ministry of IT

B) Ministry of Defence

C) Ministry of Electronics

D) Ministry of Power

Answer: B

172. **BEL manufactures?**

A) Radars

B) Sonars

- C) Communication equipment
- D) All of these

Answer: D

173. **BEL's first factory was set up in?**

- A) Bengaluru
- B) Ghaziabad
- C) Pune
- D) Hyderabad

Answer: A

174. **BEL is a ___ sector company.**

- A) Private
- B) Public
- C) Joint venture
- D) Startup

Answer: B

175. **BEL slogan is?**

- A) Quality, Technology, Innovation
- B) Quality, Technology, Innovation for Defence
- C) Powering Defence
- D) None

Answer: B

Final 25 Quick-fire

- 176. Protocol for remote login → **TELNET**
- 177. Full form of IP → **Internet Protocol**
- 178. Which layer breaks messages into segments → **Transport layer**
- 179. LRU stands for → **Least Recently Used**
- 180. Compiler converts source to → **Object code**
- 181. Example of open-source DBMS → **MySQL**
- 182. Stack is used in function calls → **Yes**
- 183. OOP pillar that hides data → **Encapsulation**
- 184. Linux is → **Open source OS**
- 185. Firewall works at → **Network layer**

186. SQL command to sort → **ORDER BY**
 187. Decimal 64 = binary? → **1000000**
 188. Java is → **Platform independent**
 189. 1 MB = ? → **1024 KB**
 190. Odd one: NAND, NOR, XOR, RAM → **RAM**
 191. SMTP full form → **Simple Mail Transfer Protocol**
 192. CPU scheduling is done by → **Short-term scheduler**
 193. Default port of MySQL → **3306**
 194. Queue uses principle → **FIFO**
 195. BCD stands for → **Binary Coded Decimal**
 196. Example of OS kernel → **Monolithic kernel**
 197. DNS uses port → **53**
 198. Decimal 15 in octal → **17**
 199. HTML stands for → **HyperText Markup Language**
 200. C language developed by → **Dennis Ritchie**
-

 **Set 2 (Q101–200) complete.**

Would you like me to now continue with **Set 3 (Q201–300, the final set)**, or should I prepare a **combined PDF of Set 1 + Set 2 first** before moving on?

You said:

set 3

ChatGPT said:

Perfect  Let's complete the package with **Set 3 (Q201–300)** for BEL Trainee Engineer – Computer Science.

This is the **final 100 questions** to make a total of **300 MCQs with answers**.

Set 3: 100 MCQs with Answers (Q201–300)

Section A: Computer Networks

201. **Which of these is NOT an IP addressing class?**

- A) Class A
- B) Class D
- C) Class E
- D) Class F

Answer: D

202. **ARP is used for?**

- A) Resolving IP to MAC address
- B) Mapping domain names
- C) File transfer
- D) Error detection

Answer: A

203. **Which protocol provides error reporting?**

- A) ICMP
- B) IP
- C) TCP
- D) UDP

Answer: A

204. **Bandwidth is measured in?**

- A) Hertz
- B) Bits per second
- C) Bytes per second
- D) Seconds

Answer: B

205. **Which is NOT a guided transmission medium?**

- A) Coaxial cable
- B) Fiber optic
- C) Radio wave
- D) Twisted pair

Answer: C

206. **Which multiplexing technique is used in telephone lines?**

- A) FDM
- B) TDM
- C) WDM
- D) CDM

Answer: A

207. **Which device works at the physical layer?**

- A) Switch

- B) Repeater
- C) Router
- D) Bridge

Answer: B

208. **Full form of URL?**

- A) Uniform Resource Locator
- B) Universal Resource Locator
- C) Unified Resource Locator
- D) Unique Resource Locator

Answer: A

209. **IPv4 loopback address is?**

- A) 127.0.0.1
- B) 192.168.0.1
- C) 0.0.0.0
- D) 255.255.255.255

Answer: A

210. **Which protocol is used in VPNs?**

- A) PPTP
- B) HTTP
- C) FTP
- D) SMTP

Answer: A

Section B: Operating Systems

211. **Spooling is used for?**

- A) CPU scheduling
- B) I/O operations
- C) Paging
- D) Deadlock prevention

Answer: B

212. **Which is NOT a real-time OS?**

- A) VxWorks
- B) Windows XP
- C) QNX
- D) RTLinux

Answer: B

213. **Deadlock necessary condition NOT required:**

- A) Mutual exclusion
- B) Hold and wait
- C) Circular wait
- D) Preemption

Answer: D

214. **LRU is used in?**

- A) CPU scheduling
- B) Page replacement
- C) Disk scheduling
- D) Deadlock recovery

Answer: B

215. **Page fault occurs when?**

- A) Page is not in memory
- B) Process terminates
- C) CPU idle
- D) Disk full

Answer: A

216. **Which OS uses inode structure?**

- A) Windows
- B) Linux/Unix
- C) MacOS
- D) Android

Answer: B

217. **Zombie process means?**

- A) Terminated but entry exists in process table
- B) Running in background
- C) Suspended process
- D) Deadlock process

Answer: A

218. **Virtual memory is implemented using?**

- A) Paging
- B) Segmentation
- C) Demand paging
- D) All of these

Answer: D

219. **Semaphore introduced by?**

- A) Dijkstra

- B) Codd
- C) Knuth
- D) Turing

Answer: A

220. **DMA stands for?**

- A) Direct Memory Access
- B) Data Memory Allocation
- C) Dynamic Memory Access
- D) Direct Machine Access

Answer: A

Section C: DBMS

221. **Relational algebra operator for filtering rows?**

- A) σ (Selection)
- B) π (Projection)
- C) \times (Cartesian product)
- D) \cup (Union)

Answer: A

222. **In SQL, HAVING clause is used with?**

- A) ORDER BY
- B) WHERE
- C) GROUP BY
- D) JOIN

Answer: C

223. **Normalization avoids?**

- A) Redundancy
- B) Indexing
- C) Integrity
- D) Performance

Answer: A

224. **Foreign key ensures?**

- A) Referential integrity
- B) Domain integrity
- C) Redundancy
- D) Security

Answer: A

225. **Which DB language is used for queries?**

- A) DDL
- B) DML
- C) DCL
- D) TCL

Answer: B

226. **Which command rolls back a transaction?**

- A) CANCEL
- B) UNDO
- C) ROLLBACK
- D) REVOKE

Answer: C

227. **ER diagrams represent?**

- A) Relationships
- B) Data structure
- C) Programs
- D) Memory

Answer: A

228. **SQL aggregate function?**

- A) SUM
- B) AVG
- C) COUNT
- D) All of these

Answer: D

229. **Which level describes how data is stored?**

- A) Physical level
- B) Logical level
- C) View level
- D) Conceptual level

Answer: A

230. **Transaction property ensuring all-or-nothing execution?**

- A) Atomicity
- B) Consistency
- C) Durability
- D) Isolation

Answer: A

Section D: Data Structures & Algorithms

231. Which searching works on sorted data?

- A) Linear search
- B) Binary search
- C) DFS
- D) BFS

Answer: B

232. Which is NOT a sorting algorithm?

- A) Quick sort
- B) Merge sort
- C) Radix sort
- D) Floyd's algorithm

Answer: D

233. Which is amortized O(1)?

- A) Stack push
- B) Queue enqueue
- C) Hash table insert
- D) Binary search

Answer: C

234. Which graph algorithm finds shortest path?

- A) Prim's
- B) Kruskal's
- C) Dijkstra's
- D) Floyd's

Answer: C

235. DFS of a tree is equivalent to?

- A) Level order
- B) Postorder/Preorder/Inorder
- C) BFS
- D) None

Answer: B

236. Which algorithm uses divide and conquer?

- A) Merge sort
- B) Quick sort
- C) Binary search
- D) All of these

Answer: D

237. **Circular queue overcomes?**

- A) Overflow
- B) Underflow
- C) Wastage of space
- D) None

Answer: C

238. **Priority queue is implemented using?**

- A) Heap
- B) Stack
- C) Queue
- D) Linked list

Answer: A

239. **Kruskal's algorithm is used for?**

- A) Shortest path
- B) Minimum spanning tree
- C) Searching
- D) Sorting

Answer: B

240. **Postfix expression evaluation uses?**

- A) Stack
- B) Queue
- C) Array
- D) Tree

Answer: A

Section E: Programming

241. **Which is NOT a feature of C?**

- A) Low-level access
- B) Platform independence
- C) Pointer manipulation
- D) Structured language

Answer: B

242. **Java compiler produces?**

- A) Machine code
- B) Bytecode
- C) Source code

D) Executable

Answer: B

243. **Python keyword to define function?**

- A) func
- B) def
- C) function
- D) declare

Answer: B

244. **Which header is required for printf in C?**

- A) stdio.h
- B) conio.h
- C) string.h
- D) math.h

Answer: A

245. **In Java, array index starts from?**

- A) 0
- B) 1
- C) -1
- D) Depends on JVM

Answer: A

246. **C++ supports multiple inheritance.**

- A) True
- B) False

Answer: A

247. **Python uses which loop for iteration?**

- A) for
- B) while
- C) Both
- D) None

Answer: C

248. **Which symbol is used for address in C?**

- A) *
- B) &
- C) %
- D) \$

Answer: B

249. Which is NOT a storage class in C?

- A) auto
- B) static
- C) public
- D) extern

Answer: C

250. Java Virtual Machine ensures?

- A) Security
- B) Portability
- C) Automatic memory management
- D) All of these

Answer: D

Section F: Aptitude & Reasoning

251. Simplify: $(36 \div 6) + (81 \div 9)$

- A) 15
- B) 17
- C) 18
- D) 20

Answer: C

252. A person spends 1/3 of salary on rent, 1/5 on food, balance = 12000.

Salary = ?

- A) 18000
- B) 24000
- C) 30000
- D) 36000

Answer: C

253. Average of 20 numbers = 25. Sum = ?

- A) 400
- B) 450
- C) 500
- D) 550

Answer: C

254. Next in series: 5, 11, 23, 47, ?

- A) 95
- B) 97
- C) 99

D) 101

Answer: A

255. **HCF of 18, 24, 36?**

- A) 6
- B) 12
- C) 18
- D) 24

Answer: A

256. **Probability of getting head in coin toss?**

- A) 1
- B) 0.5
- C) 0.25
- D) 0

Answer: B

257. **If 12 men do a job in 15 days, work done by 6 men = ?**

- A) 15 days
- B) 20 days
- C) 30 days
- D) 40 days

Answer: C

258. **Square of 111?**

- A) 12321
- B) 12121
- C) 12221
- D) 12311

Answer: A

259. **Simplify: $\sqrt{225} + \sqrt{81}$**

- A) 24
- B) 25
- C) 26
- D) 27

Answer: C

260. **Cube of 15?**

- A) 3375
- B) 3370
- C) 3575
- D) 3275

Answer: A

Section G: Digital & Microprocessors

261. 8085 has how many pins?

- A) 40
- B) 20
- C) 16
- D) 8

Answer: A

262. Instruction MOV A,B means?

- A) Copy contents of B to A
- B) Copy contents of A to B
- C) Add A and B
- D) None

Answer: A

263. Binary 10101 = decimal?

- A) 20
- B) 21
- C) 22
- D) 23

Answer: B

264. JK flip-flop removes?

- A) Race around condition
- B) Deadlock
- C) Starvation
- D) Paging

Answer: A

265. Which memory is permanent?

- A) RAM
- B) Cache
- C) ROM
- D) Register

Answer: C

266. Decoder converts?

- A) Binary to decimal
- B) Decimal to binary
- C) Hex to binary

D) ASCII to binary

Answer: A

267. **Which bus carries data?**

- A) Control bus
- B) Address bus
- C) Data bus
- D) System bus

Answer: C

268. **SR latch made of?**

- A) NAND/NOR gates
- B) XOR gates
- C) NOT gates
- D) Buffers

Answer: A

269. **Microprocessor is a?**

- A) CPU on a chip
- B) Input device
- C) Output device
- D) Storage device

Answer: A

270. **Decimal 100 = binary?**

- A) 1100100
- B) 1100101
- C) 1100110
- D) 1100111

Answer: A

Section H: General Awareness (BEL)

271. **BEL has how many manufacturing units (2025)?**

- A) 7
- B) 9
- C) 12
- D) 15

Answer: C

272. **BEL's main R&D facility is in?**

- A) Pune
- B) Bengaluru

- C) Hyderabad
- D) Ghaziabad

Answer: B

273. **BEL supplies equipment to?**

- A) Indian Army
- B) Indian Navy
- C) Indian Air Force
- D) All of these

Answer: D

274. **BEL exports to?**

- A) Asia
- B) Africa
- C) Europe
- D) All of these

Answer: D

275. **BEL is listed on?**

- A) NSE
- B) BSE
- C) Both
- D) None

Answer: C

Final 25 Quick-fire

276. Compiler translates → **Source to Object code**

277. Interpreter executes → **Line by line**

278. Default port of FTP → **21**

279. SMTP used for → **Sending emails**

280. POP3 used for → **Receiving emails**

281. Ternary operator in C → **?:**

282. SQL DCL command → **GRANT/REVOKE**

283. Example of dynamic memory function in C → **malloc**

284. OOP concept of many forms → **Polymorphism**

285. Linux creator → **Linus Torvalds**

- 286. HTML attribute for link → **href**
- 287. CSS used for → **Styling webpages**
- 288. Javascript runs on → **Browser**
- 289. Cloud model: AWS → **IaaS/PaaS**
- 290. OSI model layer 3 → **Network**
- 291. Firewall prevents → **Unauthorized access**
- 292. Odd one: RAM, ROM, EEPROM, CPU → **CPU**
- 293. Even number of 1's check → **Parity bit**
- 294. Compiler of Java → **javac**
- 295. Binary search needs → **Sorted data**
- 296. Odd one: BFS, DFS, Merge sort, Dijkstra → **Merge sort**
- 297. IP address 255.255.255.255 is → **Broadcast**
- 298. SQL keyword for removing duplicates → **DISTINCT**
- 299. Decimal 8 = octal? → **10**
- 300. World Wide Web invented by → **Tim Berners-Lee**