PROVISIONAL ANSWER KEY

NAME OF THE POST : Asst. Director IT Directorate of ICT and E-Governerce, Class-I,(AUV)(Advt. No. : 67/2016-17)

Date of Preliminary Test : 29/01/2017

Subject : Concerned Subject (Que. 101 to 300)

101. Determine the maximum length of the cable (in km) for transmitting data at a rate of 500 Mbps in an Ethernet LAN with frames of size 10,000 bits. Assume the signal speed in the cable to be 2,00,000 km/s.

(A) 1 (B) 2

(C) 2.5 (D) 5

102. Consider a token ring network with a length of 2 km having 10 stations including a monitoring station. The propagation speed of the signal is 2×10^8 m/s and the token transmission time is ignored. If each station is allowed to hold the token for 2 μsec, the minimum time for which the monitoring station should wait (in μsec) before assuming that the token is lost is _____

(A) 28 to 30 (B) 20 to 22

(C) 0 to 2 (D) 31 to 33

103. How many 8-bit characters can be transmitted per second over a 9600 baud serial communication link using asynchronous mode of transmission with one start bit, eight data bits, two stops bits, and one parity bit?

(A) 600
(B) 800
(C) 876
(D) 1200

104. One of the header fields in an IP datagram is the Time to Live(TTL) field. Which of the following statements best explains the need for this field?

(A) It can be used to prioritize packets
(B) It can be used to reduce delays
(C) It can be used to optimize throughput
(D) It can be used to prevent packet looping

105. Which of the following assertions is FALSE about the Internet Protocol (IP)?

(A) It is possible for a computer to have multiple IP address
(B) IP packets from the same source to the same destination can take different routes in the network
(C) IP ensures that a packet is discarded if it is unable to reach its destination within a given number of hops
(D) The packet source cannot set the route of an outgoing packets; the route is determined only by the routing tables in the routers on the way

106. In the network 200.10.11.144/27, the fourth octet (in decimal) of the last IP address of the network which can be assigned to a host is

(A) 158
(B) 255
(C) 222
(D) 223

107. In the TCP/IP protocol suite, which one of the following is NOT part of the IP header?

(A) Fragment Offset
(B) Source IP address
(C) Destination IP address
(D) Destination port number

108. If block contains 32 IP address which of the following is first address of the block?

(A) 10.0.0.5
(B) 10.0.0.16
(C) 10.0.0.32
(D) 10.0.0.160

109. The transport layer protocols used for real time multimedia, file transfer, DNS and e-mail, respectively are:

(A) TCP, UDP, UDP and TCP (B) UDP, TCP, TCP and UDP
(C) UDP, TCP, UDP and TCP (D) TCP, UDP, TCP and UDP

110. Which of the following is/are example(s) of stateful application layer protocols?

I) HTTP
II) FTP
III) TCP
IV) POP3

(A) I and II only (B) II and III only
(C) II and IV only (D) IV only

111. GSM is the digital standard for Europe; What do the letters GSM currently mean?

(A) Global Special Mobile
(B) Greater System's Mobile
(C) Global Systems for Mobile Communications
(D) None of the above

112. In cellular networks, simultaneous users over the same channel is achieved by:

I) Digital Technology
II) Frequency re-use
III) CDMA and TDMA
IV) Using VLRs in each area and the HLR in the network switching center.

(A) I and II (B) I and III
(C) II and III (D) IV only

113. Which of the following statement is true about spread spectrum:

(A) It uses a narrow band frequency
(B) Spread spectrum allocates disjoint resources (frequency or time slots depending on the access system) to each user
(C) Spread spectrum signals can be picked up by simple receivers
(D) Spread spectrum signals are hard to jam and identify

114. Fragment life cycle in android is _____

(A) onReceive()
(B) onCreate()
(C) onAttach()->onCreate() -> onCreateView() -> on ActivityCreated() -> onStart() -> onResume()
(D) None of the above

115. What are return types of startActivityForResult() in android?

(A) RESULT_OK
(B) RESULT_CANCEL
(C) RESULT_CRASH
(D) (A) and (B)

116. What is the 9 patch tool in android?

(A) Using with tool, we can redraw images in 9 sections
(B) image extension tool
(C) image editable tool
(D) Device feature

117. Base Adaptor in android is

(A) A common class for any adaptor, which can we use for both List view and spinner
(B) A kind of adapter
(C) Data storage space
(D) None of the above

118. What was the first phone released that ran Android OS?

(A) Google gPhone
(B) T-mobile G1
(C) Motorola Droid
(D) HTC Hero

119. Which of the following is NOT a part of Android native libraries?

(A) Webkit
(B) Dalvik
(C) OpenGL
(D) SQLite

120. Status data will be exposed to the rest of the Android system via:

(A) Intents
(B) A content provider
(C) Network receivers
(D) Altering permissions

121. If the User Interface (UI) begins to behave sluggishly or crash while making network calls, this is likely due to _____
(A) Network latency
(B) Hardware malfunctions
(C) Virus on the server
(D) Activity manager contains too much content

122. Which of these are not one of the three main components of the APK?
(A) Dalvik Executable
(B) Resources
(C) Native libraries
(D) Webkit

123. Which one of the following belong to Parent Class of activity
(A) Object
(B) Context
(C) Activity Group
(D) Context Theme Wrapper

124. Once installed on a device, each Android application lives in _____?
(A) device memory
(B) external memory
(C) security sandbox
(D) None of the above

125. The operating system used for Android stack is _____
(A) Linux
(B) Windows
(C) Java
(D) XML

126. Built-in database in Android _____
(A) SQLite
(B) DB2
(C) MySQL
(D) Oracle

127. What is the name of the program that converts Java byte code into Dalvik byte code?
(A) Android Interpretive Compiler (AIC)
(B) Dalvik Converter
(C) Dex Compiler
(D) Mobile Interpretive Compiler (MIC)

128. When an activity doesn't exist in memory it is in _____
(A) Starting state
(B) Running state
(C) Loading state
(D) Inexistent state

129. What does .apk stands for
(A) Application Package
(B) Application Program Kit
(C) Android Proprietary Kit
(D) Android Package

130. How does Google check for malicious software in the android market?
(A) Every new app is scanned by a virus scanner
(B) Users report malicious software to Google
(C) Google employees verify each new app
(D) A separate company monitors the Android Market for Google

131. Insertion of data into B-tree may cause
(A) Increase in height
(B) No change in height and no change in number of nodes
(C) Split of node
(D) Any of the above

132. Which of the following contains overflow pages
(A) B trees
(B) B^+ trees
(C) ISAM trees
(D) None of the above

133. The minimum and maximum number of keys in the internal nodes of B Tree, with order 4 is, respectively are
(A) 1,3
(B) 2,4
(C) 1,4
(D) 2,3

134. Minimum order of time required to interchange the m^{th} and n^{th} elements of a single linked list is
(A) Max(m, n)
(B) Min(m, n)
(C) m + n
(D) m + min(m, n)

135. The inorder and preorder traversals of a binary tree respectively are *dbeafcg* and *abdecfg*, then the postorder traversal of that binary tree is
(A) *debfgca*
(B) *edbgfca*
(C) *edbfgca*
(D) *defgbca*

136. If the numbers 10, 1, 3, 5, 15, 12, 16 are inserted into an empty binary search tree as per the order given, then the height of the binary search tree is
(A) 2
(B) 3
(C) 4
(D) 6

137. The recurrence relation formed for the complexity of binary search is
(A) T(n) = T(n/2) +k, k a constant
(B) T(n) = 2.T(n/2) +k, k is a constant
(C) T(n) = T(n/2) + log n
(D) T(n) = T(n/2) + n

138. Match the following pairs:

I. O(log n)	(M) Heap sort
II. O(n)	(N) DFS
III. (nlogn)	(O) Binary search
IV. $O(n^2)$	(P) Selecting K^{th} smallest elements

(A) I-P, II-M, III-N, IV-O
(B) I-O, II-P, III-M, IV-N
(C) I-O, II-N, III-M, IV-P
(D) I-O, II-N, III-P, IV-M

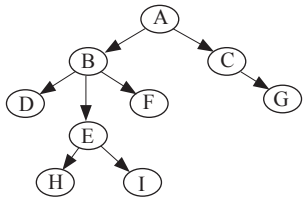
139. Find the solution for the following recurrence relation $a_n = 5n^2a_{n-1}$ with $a_0 = 5$

(A) $a_n = (n!)^2$
(B) $a_n = 5(n!)^2$
(C) $a_n = 5^n(n!)^2$
(D) $a_n = 5^{n+1}(n!)^2$

140. In a sorted set of n distinct elements we want to find the next higher element after some element y in the set using binary search. What is the runtime complexity of this operation?

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

141. Consider the following tree and locking sequences:



I. Lock-X(A), Lock-X(B), Lock-X(D), unlock(D), lock-X(F), unlock(F), unlock (B), unlock (A)
II. Lock-X(A), lock-X(E), lock-X(H), unlock (H), unlock(E), unlock (A)
III. Lock-X(B), lock-X(F), lock-X(E), unlock (F), unlock(E), unlock (B)

Which of the above is (are) the valid locking sequence(s) for tree-based protocol?

(A) II and III only
(B) I only
(C) I and III only
(D) II only

142. The number of different locks used in multi-version two phase locking, is equal to

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

143. Locks held for a short duration are termed as _____

(A) Shared locks
(B) Exclusive locks
(C) Latches
(D) Certify locks

144. Multiple granularity level protocol is especially suited when processing _____ transactions.

(A) short transactions that access only a few items(records)
(B) long transaction that access entire files
(C) Both (A) and (B)
(D) None of the above

145. Consider the transactions T1, T2, T3 with the following schedule S:

S : T1: Read (x); T2: Read (z); T1:Read(z);
T3:Read(x);T3:Read(y); T1:Write(x);
T3:Write (y);T2:Read(y);
T2:Write(z); T2:Write(y)

If the schedule S is serializable, the equivalent serial schedule is ____.

(A) it cannot be decided
(B) T1,T2,T3
(C) T2,T1,T3
(D) T3,T2,T1

146. Which of the following is a false statement?

(A) A schedule which is allowed under strict 2PL is always allowed under Basic 2PL
(B) A schedule which is allowed under Basic Timestamp protocol is always allowed under Thomas write rule
(C) A schedule which is allowed under basic 2PL is always allowed under multi-version 2PL
(D) A schedule which is allowed under multi-version 2PL is always allowed under multi-version timestamp protocol

147. What is true about Thomas's Write rule?

(A) Thomas's write rule provides lesser concurrency than time stamp order protocol
(B) Thomas's write rule and time stamp order protocol provides same concurrency
(C) No comparison between Thomas's write rule time stamp order protocol
(D) Thomas's write rule provides greater concurrency than time stamp order protocol

148. Match the following:

P. Recoverable	1. T_j reads data items written by T_i, the T_j commits after T_i commits
Q. Cascadeless	2. Reading uncommitted data
R. Dirty read	3. T_j reads data items written by T_i, the T_i commits after T_j commits
S. Non recoverable	4. T_j reads data items written by T_i, the commit operation of T_i appears before the read operation of T_j

(A) P-2, Q-1, R-4, S-3
(B) P-3, Q-4, R-2, S-1
(C) P-2, Q-3, R-4, S-1
(D) P-1, Q-4, R-2, S-3

149. Consider the schedule:
T1: R(X) ; T2: R(Y) ; T3:W(X) ; T2:R(X) ; T1:R(Y)
The schedule T1 is
(A) Not conflict and not view serializable
(B) Conflict and view serializable
(C) Not conflict, but view serializable
(D) Conflict, but not view serializable

150. Problem of testing view serializability is
(A) P Problem
(B) NP problem
(C) NP hard
(D) NP complete

151. Which of the following is false?
(A) Ensuring durability is the responsibility of recovery management component
(B) Ensuring isolation is the responsibility of concurrency management
(C) Ensuring atomicity or consistency is the responsibility of recovery management component
(D) None of the above

152. Consider the following scenario:
T1 consists of 5 operations and T2 consists of 4 operations, then the number of concurrent schedules possible is
(A) 9!
(B) 126
(C) 5!*4!
(D) None of the above

153. Which of the following is true?

(A) Schedules which are allowed under Thomas write rule are also allowed under basic timestamp protocol

(B) All the schedules which are allowed under basic timestamp are also allowed under multi-version timestamp protocol

(C) All the schedules which are allowed under multi-version timestamp protocol are also allowed under Thomas write rule

(D) All of the above are true

154. If transaction T1 is holding an intension exclusive lock (IX) on data item 'A', then which of the following locks requested on data item 'A' by another transaction T2 cannot be granted in multiple granularity protocol?

(A) Intension shared (IS)

(B) Intension Exclusive (IX)

(C) Shared (S)

(D) Both (B) & (C)

155. Which of the following is a correct statement

(A) Every subordinate entity is a weak entity

(B) Every weak entity is a subordinate entity

(C) Relations produced from an E-R model will always be in BCNF

(D) All of the above

156. Identify the correct statement regarding 'view' in SQL:

(A) View provides automatic security for hidden data

(B) Views allow the same data to be seen by different users in different ways at the same time

(C) Views can provide logical data independence

(D) All of the above

157. Suppose an undirected graph with n vertices and e edges are represented by an adjacency matrix. Then the time required to determine the degree of any vertex is

(A) O(e)

(B) O(n)

(C) $O(n^2)$

(D) O(e + n)

158. Assume a graph is having 10 vertices and 20 edges. In Krushkal's minimum spanning tree method, 5 edges are rejected. How many edges are not considered during execution of algorithm on the given graph?

(A) 5

(B) 4

(C) 6

(D) 10

159. Using the Cyclomatic complexity of a graph G having 13 vertices, 4 decision vertices, 1 connector, the number of edges in G is

(A) 13 (B) 10

(C) 9 (D) 8

160. If every node in a graph 'G' is adjacent to equal number of nodes, then the graph G is said to be

(A) Regular (B) Complete

(C) Finite (D) Strongly connected

161. With the following as adjacency matrix of an undirected graph G, the number of bridge(s) is

	p	q	r	s	t	s
p	0	1	1	0	0	0
q	1	0	0	1	0	0
r	1	0	0	1	1	0
s	0	1	1	0	0	0
t	0	0	1	0	0	1
u	0	0	0	0	1	0

(A) 3 (B) 2

(C) 1 (D) 5

162. How many distinct spanning trees do exist in an undirected cycle graph of n vertices?

(A) n (B) n–1

(C) n+1 (D) n+2

163. Let G be a connected graph of order n. What is the maximum number of cut vertices that G can contain?

(A) n (B) n–2

(C) n–1 (D) n^2-1

164. An undirected graph G has n nodes. Its adjacency matrix is given by an nxn square matrix whose

(I) diagonal elements are '0's

(II) Non-diagonal elements are '1's.

Which one of the following is True?

(A) Graph G has no minimum spanning tree (MST)

(B) Graph G has unique MST's each of cost n–1

(C) Graph G has multiple distinct MST's each of cost n–1

(D) Graph G has multiple spanning trees of different costs

165. Match the pairs:

a) 0/1 knapsack	1. $O(n^2 2^n)$
b) All pairs shortest path	2. $O(2^n)$
c) Optimal cost binary search tree	3. $O(n^3)$
d) Travelling sales person	4. $O(n^2)$

(A) a-1, b-2, c-3, d-4
(B) a-2, b-3, c-4, d-1
(C) a-2, b-4, c-3, d-1
(D) a-2, b-3, c-4, d-1

166. Dijkstra algorithm is for finding
(A) Shortest paths from single source to several sinks
(B) Minimum spanning tree for graph
(C) Sorted list of nodes in a undirected graph with negative edge weights
(D) All the above

167. Suppose a hash table can contain 10-entries and if require, it uses linear probing to resolve collisions. Using key % 10 as has function, if key values 43, 165, 62, 123, 142 are hashed, then the location the key 142 is _____
(A) 2
(B) 3
(C) 4
(D) 6

168. Construct a min heap from the following sequence of integer elements
120 140 40 50 80 70 60 90 20 100
After deleting a root element from the heap, what will be the post order traversal of the heap?
(A) 140 100 90 80 50 120 70 60 40
(B) 140 100 90 80 120 70 50 60 40
(C) 140 100 80 90 120 70 50 60 40
(D) 140 90 100 50 80 40 120 60 70

169. Consider a file consisting of 30,000 fixed length records of size 100 bytes. With disk block size of 1024 bytes and block pointer size of 6 bytes, if we construct a multilevel index on key field of length 9 bytes, then the total number of blocks required to access a record by searching is _____
(A) 3 blocks
(B) 4 blocks
(C) 5 blocks
(D) More then 5 blocks

170. An index is clustered, if
(A) it is on a set of fields that forms a candidate key
(B) it is on a set of fields that includes the primary key
(C) the data records of the file are organized in the same order as the data entries of the index
(D) the data records of the file are organized not in the same order as the data entries of the index

171. Consider a file of 8192 records with each record having 16 bytes stored in a file system with block size of 512 bytes. Assume that the key pointer pair in index file takes 8 bytes. The file is ordered on a non-key field and the file organization is un-spanned. If the secondary index is built on the key field of the file then number of blocks in the first level is
(A) 512 (B) 8192
(C) 64 (D) 128

172. 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) No normal form

173. Which of the following set of dependencies is suitable for making a relation R(ABCD) to be in 3 NF but not in BCNF.
(A) { AB→ CD, A→ C, D→ B} (B) {AB→CD, C→DA}
(C) {A→BCD,B→CD, C→D (D) { AB→CD, C→A, D→B}

174. If a functional dependency set F is { A→B, BC→E, ED→A, EF→G, E→F}, find the closure of attribute set (AC)
(A) {A,B,C,D,E,F,G} (B) {A,B,C,D,E,F}
(C) {A,B,C,D,E,G} (D) {A,B,C,E,F,G}

175. A relation R(ABC) is having the following 4 tuples: (1,2,3), (4,2,3), (5,3,3) and (2,4,4). Which of the following dependencies can you infer doesn't hold over relation R?
(A) A→B (B) B→C
(C) AB→C (D) C→B

176. A table may have partial dependencies, if table consists of
(A) one prime attribute (B) only one attribute
(C) only two attributes (D) two prime attributes

177. Consider a relation R (ABCDEFGHIJ) with FD set = {AB→C, A→DE, B→F, F→GH, D→IJ}. If 'R' is split into ABC, ADE, BF, FGH, DIJ then this decomposition is

(A) Lossy and dependency preserving
(B) Loss less and dependency preserving
(C) Lossy and not dependency preserving
(D) Loss less and not dependency preserving

178. Suppose a relation R is in 3NF. Then an FD: X→A is not valid on R, if

I. X is a proper subset of some key
II. X is a not a proper subset of any key
III. X is a key
IV. A is a part of some key

(A) I & III are correct
(B) I & II are correct
(C) III & IV are correct
(D) I & II are not correct

179. Let R be a relationship between the entity sets E1 and E2 with primary keys X an Y respectively. If R is a one relationship between entities E1 and E2 then which of the following FDs hold?

(A) Y→X only
(B) X→Y only
(C) Both Y→X and X→Y
(D) neither of them

180. A problem L is NP-Complete if and only if

(A) L is NP-Hard
(B) L is NP
(C) L is NP and NP-Hard
(D) L is non-polynomial

181. Let R be a relation of degree n. How many different projections on R are possible

(A) n
(B) n–1
(C) n+1
(D) 2^n-1

182. Two relations are A(x,y) and B(y). Then the relation algebra operation Division i.e. A/B is

(A) $\pi_x(A) - \pi_x C\ (\pi_x((A \times B) - A)$
(B) $\pi_x(A) - \pi_x\ (\pi_x((A \times B) - A)$
(C) $\pi_x(A) - \pi_x\ (C\pi_x((A) \times B) - A)$
(D) $A - \pi_x C\ (\pi_x(A) \times B)$

183. Find equivalent relational algebraic expression for the following SQL query select C.sid
from catalog C, parts P
where (P.color = red or P.color = green) and P.pid = C.pid
(A) π sid ($\sigma_{color=red \text{ or } color=green}$ (parts)א$_{pid}$ catalog)
(B) π sid ($\sigma_{color=red \text{ or } color=red}$ (parts)א$_{pid}$ catalog)
(C) π pid ($\sigma_{color=red \text{ or } color=green}$ (parts)א$_{pid}$ catalog)
(D) π pid ($\sigma_{color=red \text{ or } color=green}$ (parts)א$_{sid}$ catalog)

184. The input to a bubble sort algorithm is
28, 3, 9, 6, 12, 1, 45, 32, 29, 15, 40, 5
If a list is outputted at the end of each complete pass.
Which of the following is not a valid intermediate list?
(A) 3,9,6,12,1,28,32,29,15,40,5,45 (B) 3,6,9,12,1,28,32,29,15,5,40,45
(C) 3,6,9,1,12,28,29,15,32,5,40,45 (D) None

185. Which of the following sorting algorithms has the lowest worst-case time complexity?
(A) Quick sort (B) Bubble sort
(C) Merge sort (D) Selection sort

186. Which of the following is not an in-place sorting algorithm?
(A) Bubble sort (B) Merge sort
(C) Insertion sort (D) Heap sort

187. Map the following statements to true (T) / False(F) respectively
S1 : Selection sort is in-place but unstable
S2 : Merge sort is unstable
S3 : Heap sort is in-place but unstable
S4 : In-Place algorithms require constant amount of extra storage space for transforming input set into output
(A) TTFT (B) TTTT
(C) TFTT (D) FFFT

188. Consider the following commands:
CREATE TABLE DEPT(dno int PRIMARY KEY,
dname varchar (30));
CREATE TABLE EMP(eno int PRIMARY KEY,
ename varchar(30),
dno int references DEPT(dno));
Which of the following operations may cause violation of referential integrity constraint?
(A) Delete on EMP (B) Insert into DEPT
(C) Update on DEPT (D) Both (A) & (C)

189. The relation movie (title, budget) contains the titles and budgets of different movies. Assuming that no two movies have the same budget, what does the following SQL query list?
Select title from movie m where (select count (*) from movie n where n.budget > m.budget) <4
(A) Titles of the three most expensive movies
(B) Titles of the fourth most inexpensive movie
(C) Title of the fourth most expensive movie
(D) Titles of the four most expensive movies

190. One of the following statements is FALSE regarding recursion.
(A) If a function is recurring infinitely then it will generate "stack overflow" error
(B) Any iterative procedure can be converted in to a recursive procedure
(C) Any task that can be accomplished using recursion can also be done without using recursion
(D) Stack is used to keep track of recursion

191. The minimum spanning tree problem belong to
(A) Greedy
(B) Divide and conquer
(C) Dynamic programming
(D) None of these

192. Which of the following statements is/are true?
I. Adjacency list representation is better for sparse graph than adjacency matrix representation.
II. Finding whether there is an edge between any two node s in a graph is easier in Adjacency list representation.
III. Adding a vertex in adjacency list representation is easier than adjacency Matrix representation.
(A) I only
(B) II & III only
(C) I & III only
(D) I, II & III

193. Computer system assets can be modified only by authorized parties is termed as _____
(A) Confidentiality
(B) Integrity
(C) Availability
(D) Authenticity

194. Consider the following two statements:
I. A worm mails a copy of itself to other systems.
II. A worm executes a copy of itself on another system.
Which of the following is true?
(A) I is true and II is false
(B) I is false and II is true
(C) Both I and II are true
(D) Both I and II are false

195. _____ code recognizes some special sequence of input or is triggered by being run from a certain user ID of by unlikely sequence of events.

(A) Trap Doors (B) Trojan Horse
(C) Logic Bomb (D) Virus

196. Which of the following malicious program do not replicate automatically?

(A) Trojan Horse (B) Virus
(C) Worm (D) Zombie

197. _____ can shield electronic equipment from power spikes.

(A) Encryption program (B) Surge Protector
(C) Firewall (D) UPS

198. What is the name of the application program that gathers user information and send it to someone through the Internet?

(A) A Virus (B) Logic Bomb
(C) Spybot (D) Security Patch

199. HTML viruses infect

(A) your computer
(B) a web page in the HTML code
(C) Both a Web page and the computer that is viewing it
(D) None of the above

200. What is the referent object in contemporary cyber security?

(A) Digitalized sensitive information
(B) Critical Information infrastructure
(C) Government IT systems
(D) Telecommunication networks

201. When a customer of a web site is unable to access the site due to a bombardment of fake traffic is termed as _____

(A) Cracking (B) A Virus
(C) a denial of service attack (D) A Trojan horse

202. Collecting personal information and effectively posting as another individual is termed _____

(A) Spooling (B) Identity theft
(C) Spoofing (D) Hacking

203. Sending data electronically off-site via a remote backup service is called _____.

(A) Remote Journaling
(B) Database shadowing
(C) Electronic Vaulting
(D) Logging

204. The common name used for crime of stealing password is called _____.

(A) Spooling
(B) Spoofing
(C) Polling
(D) Identify theft

205. Malware means _____

(A) A virus or worm
(B) A Trojan Horse
(C) A Hacker tool
(D) A corrupted program

206. Infrastructure as a Service (IaaS) provides _____

(A) Virtual Machine, Virtual Storage, Virtual Infrastructure
(B) Virtual machine, Operating Systems, Applications
(C) Operating environment with Applications
(D) Physical Machines with Network

207. Which one among the following is a disadvantage of cloud computing?

(A) Quality of Service cannot be guaranteed
(B) Cloud applications suffer from inherent latency
(C) Cloud computing applications are not reliable
(D) Utilization is poor

208. Which one of the following business types is least suitable for deploying on cloud?

(A) Web content delivery services
(B) Data analytics and computation
(C) CRM Applications
(D) Billing Applications

209. Which one among the following is not a possible parameter of Service Level Agreement, in cloud?

(A) Availability of the Service
(B) Response Times or Latency
(C) Electricity Cost
(D) Warranty of the Service

210. Which one of the following is a wrong statement?

(A) The large scale of cloud computing systems was enabled by the popularization of the Internet
(B) Soft computing represents a real paradigm shift in the way in which systems are deployed
(C) Cloud computing makes the long-held dream of utility computing possible
(D) All of the above

211. The reliability of a system with n redundant components each having a reliability of r is:

(A) $1-(1-r)^n$ (B) $1-(1+r)^n$

(C) $1+(1-r)^n$ (D) $(1+r)^n$

212. _____ is a function of the particular enterprise and application is an on-premises deployment.

(A) Vendor lock (B) Vendor lock-in

(C) Vendor lock-ins (D) None of the above

213. One of the important unique property of a cloud is:

(A) Utility type of service delivery (B) Elasticity

(C) Easy initial entry (D) All of the above

214. What is the full form of CaaS?

(A) Cloud as a Service (B) Communication as a Service

(C) Computer as a Service (D) Compliance as a Service

215. A low level program that provides system resources to virtual machines is called _____

(A) Guest Operating System (B) Host Operating System

(C) Hypervisor (D) VM Box

216. In capacity planning scale-out refers to

(A) Increase the capacity by adding more number individual nodes

(B) Increase the capacity by adding more powerful resources

(C) Reduce capacity by keeping out some nodes

(D) Reduce the capacity by replacing nodes with less powerful nodes

217. Online content that is not indexed by search Engines is called _____

(A) Disconnected Web (B) Hidden Documents

(C) Private Documents (D) Deep Web

218. Microsoft Azure AppFabric provides _____

(A) Application hosting environment

(B) Application container

(C) Store for documents

(D) Store for database

219. If Operating System and applications stack is added to the cloud, then the model is called _____

(A) SaaS (B) PaaS

(C) IaaS (D) All of the above

220. For a server with a five-year lifetime, you would therefore need to include an overhead of _____ percent of the system's acquisition cost.
(A) 10 (B) 20
(C) 30 (D) 40

221. Communication between services is done using _____ protocol.
(A) RESTful (B) REST
(C) SOAP (D) XML

222. Applications such as web server and database server that can run on a virtual machine image are called as:
(A) Virtual Machine System (B) Virtual Server
(C) Pseudo Server (D) Virtual Appliances

223. Which one of the following is a third-party VPN that is based on Google's Google Talk?
(A) Skyoe (B) Hostspot VPN
(C) AnchorFree Hotspot Shield (D) GBridge

224. Rackspace Cloud Service is an example for _____
(A) IaaS (B) SaaS
(C) CaaS (D) PaaS

225. Which one of the following uses a set of e-mail extensions to provide access to mobile devices?
(A) B2B Profile (B) Black Profile
(C) Lemonade Profile (D) B2C Profile

226. Which one of the following service provides, a means for advertising services, on small networks using a multicast protocol?
(A) WS-WCF (B) WS-Discovery
(C) WS-API (D) None of the above

227. Which feature is the most emphasized in open system for mobile applications?
(A) integrity (B) interoperability
(C) scalability (D) transparency

228. Which one of the following has no support for Java on its platform?
(A) Microsoft (B) Apple
(C) Google (D) Yahoo

229. Which of the following is the largest video sharing site?
(A) YouTube (B) YuMe
(C) Yahoo Video (D) Linkedln

230. Which encryption algorithm is used in Skype communication?
(A) RSA (B) DES
(C) AES (D) SHA

231. Which one of the following transmission protocol is used in transferring media?
(A) TCP (B) UDP
(C) HTTP (D) PCT

232. Which language is used to build twitter message server queue?
(A) Scala (B) Java
(C) Python (D) Ruby

233. The file attribute flag used by the backup software is _____
(A) Passive Bit (B) Active Bit
(C) System/User Bit (D) Archive Bit

234. The property that makes cloud storage systems highly reliable is _____
(A) Redundant Name Servers (B) Redundant Network Links
(C) Replication of Data (D) All of the above

235. System analysis, System design and System postulation are the examples of:
(A) Types of system (B) Types of information
(C) Types of entities (D) Types of system study

236. ARENA is an example simulation software for
(A) Continuous Time System Simulation
(B) Discrete Time System Simulation
(C) Linear System Simulation
(D) All of the above

237. MATLAB Simulink is useful to simulate and analyze _____
(A) Non Linear Systems
(B) Linear Systems
(C) Continuous time, sampled time or mixture of both
(D) All of the above

238. If the death rate is equal to birth rate than _____

(A) the population grows
(B) the population gets smaller
(C) the population is stable
(D) all answers are incorrect

239. What is process oriented simulation system?

(A) Obtained real world behaviour is coded in number of cooperating processes
(B) Number of processes run simultaneously
(C) Activities of real world are processed
(D) None of the above

240. A real world system is called relative to the true model structure at Θ_{RS} if:

(I) Parameter identifiable if there exists an input sequence $\{U_K\}$ such that Θ and Θ_{RS} are distinguishable for all $\Theta \neq \Theta_{RS}$
(II) System identifiable if there exist an input sequence $\{U_K\}$ such that Θ and Θ_{RS} are distinguishable for all $\Theta \neq \Theta_{RS}$ but a finite set
(III) Unidentifiable in all other cases

(A) (I) only to be satisfied
(B) (I) and (II) to be satisfied
(C) (II) and (III) to be satisfied
(D) (I), (II), (III) to be satisfied

241. What is HLA in a distributed simulation system?

(A) High Level Assembly
(B) High Level Architecture
(C) High level Language Agent
(D) Home Loan Asset System

242. The set Ax = b with r = rank[A], m equations and n unknowns has an infinite number of solutions if:

(A) rank[A] = rank[Ab] and r < n
(B) rank[A] = rank[Ab]
(C) r < n
(D) r > n

243. What is an empirical model?

(A) It is model constructed based on the experimental measurements of the real world system.
(B) It is a model based on the derivation of essential relations of the dynamic system.
(C) It is a model based on the mathematical equations with error correcting measurements.
(D) None of the above

244. Among the following which one is not an activity of Risk Management
(A) Identify potential sources of risk and identify risk drivers
(B) Quantify risk's probability of occurrence and its impact
(C) Determine and evaluate alternative approaches to mitigate moderate and high risks
(D) Observation of the Systems Engineering process

245. Systems Engineering Master Schedule (SEMS) is a _____
(A) A tool for project drawing
(B) A timeline for design
(C) A tool for controlled execution of the project
(D) Entity Relationship Modelling

246. Order the following tasks of Systems Engineering:
I. Establish Performance Requirements
II. Establish the Functionality
III. Evolve Design and Operations Concepts
IV. Define the System Objectives
(A) IV, II, I, III (B) IV, I, III, II
(C) II, IV, III, I (D) II, I, III, IV

247. What is the first task/phase in a system life cycle?
(A) Prototyping, Test & Evaluation
(B) Concept Design and Update
(C) Operational Test and Evaluation
(D) System Analysis

248. The _____ model is designed to bring prices down by increasing the number of customers who buy a particular product at once
(A) Demand Sensitive (B) Supply sensitive
(C) Dynamic pricing (D) Static pricing

249. Which of the following is True?
(A) In a revere auction, the seller sets a price and customers make individual bids to buy an item
(B) A reserve price is the highest bid a customer is willing to make.
(C) A shopping cart allows customers to continue to brows after selecting each item they wish to purchase.
(D) 12 address lines and 8 data lines.

250. Which of the following is false?

(A) An e-commerce site must establish a merchant account with a bank before credit card orders can be processed online.

(B) e-Cash is accepted by all e-commerce web sites as a form of payment.

(C) Micropayments ar.small sums of money that can be charged to a user for products and services bought online.

(D) When purchasing on the Web, the card number and expiry date can be provided, but the merchant does not see the actual card used in the purchase.

251. CDMA in wireless Internet domain stands for

(A) Code Division Multiple Access

(B) Channel Division Multiple Access

(C) Circuit Division Multiple Access

(D) Class Division Multiple Access

252. A switching circuit that produces one in a set of input bits as an output, based on the control value of control bits is termed as

(A) Full Adders (B) Inverter

(C) Multiplexer (D) Converter

253. The Acronym TLB stands for

(A) Truncated Least Significant Bit

(B) Translation Look-aside Buffer

(C) Translation Law Buffer

(D) Translation Look-back Buffer

254. A connection from one computer to another through a connection-oriented network with frame relay is termed as

(A) PVC (B) TCP/IP

(C) RARP (D) Netware

255. E-commerce is not suitable for

(A) Sale/Purchase of expensive Laptops.

(B) Sale/Purchase of Smart phones.

(C) Sales/Purchase of branded Dresses.

(D) Online job searching.

256. SWIFT stands for _____

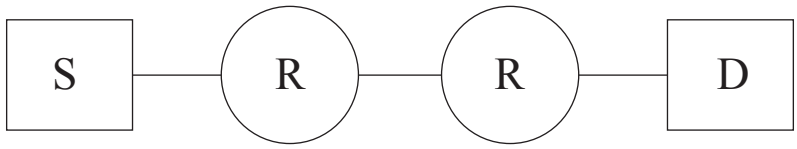
(A) Society for Worldwide Internet Financial Telecommunications
(B) Society for Worldwide Interbank Financial Telecommunications
(C) Secret Wide Interbank Financial Telecommunications
(D) None of the Above

257. Which of the following is true with reference to the benefits of E-marketing?

i) Speed
ii) Reach and Penetration
iii) Ease and Efficiency
iv) Low Cost
v) Targeted audience

(A) i, ii, iii and iv only
(B) ii, iii, iv and v only
(C) i, iii, iv and v only
(D) i, ii, iii, iv and v

258. Assume that source S and destination D are connected through two intermediate Routers labeled R. Determine how many times each packet has to visit the network layer and the data link layer during a transmission from S to D.



(A) Network layer 4 times and Data link layer 4 times
(B) Network layer 4 times and Data link layer 3 times
(C) Network layer 4 times and Data link layer 6 times
(D) Network layer 2 times and Data link layer 6 times

259. Which of the following is an example of SPOOLED device?

(A) The terminal used to enter the input data for a program being executed
(B) A line printer used to print the output of a number of jobs
(C) The secondary memory device in a virtual memory system
(D) The graphic display device

260. 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)

(A) 3
(B) 4
(C) 5
(D) 6

261. In a paged segmentation scheme of memory management, the segment table itself must have a page table because
(A) the segment table is often too large to fit in one page
(B) the segment is spread over a number of multiple pages
(C) segment tables point to page tables and not to the physical location of the segment
(D) the processor's description base register points to a page table

262. Locality of reference implies that the page reference begin made by a process
(A) will always be to the page used in previous page reference
(B) will always be one of the pages existing in memory
(C) will always leads to a page fault
(D) is likely to be one of the pages used in the last few page references

263. DMA module takes control of bus in order to transfer data when
(A) The data is ready for transfer
(B) Only when the CPU does not need the bus
(C) Interrupt is being serviced by CPU
(D) None of the above

264. Thrashing
(A) reduces page I/O
(B) decreases the degree of multiprogramming
(C) implies excessive page I/O
(D) improves the system performance

265. Which level of RAID refers to disk mirroring with block striping?
(A) RAID level 0
(B) RAID level 1
(C) RAID level 2
(D) RAID level 3

266. In OSI model dialog control and token management are responsibilities of
(A) Session Layer
(B) Network Layer
(C) Transport Layer
(D) Data link Layer

267. Unlike Ipv4, Ipv6 does not include the following field in the base header
(A) Next Header field
(B) Field for fragmentation information
(C) Flow Label
(D) Kind field

268. The simplified form of the Boolean expression
(P + Q' + R').(P + Q' + R).(P + Q + R') is
(A) (P'Q + R') (B) (P + Q'R')
(C) P'Q + R) (D) (PQ + R)

269. The minimum number of D flip-flops needed to design a mod-258 counter is
(A) 9 (B) 8
(C) 512 (D) 258

270. Memory access in RISC architecture is limited to instructions
(A) CALL and RET (B) PUSH and POP
(C) STA and LDA (D) MOV and JMP

271. An interactive process of system development in which requirements are converted to a working system that is continually revised through close work between an analyst and user is called
(A) Waterfall modelling (B) Iterative modelling
(C) Spiral modelling (D) ER Model

272. How many edges does a full 5-ary tree with 1000 internal vertices have?
(A) 2000 (B) 1999
(C) 2001 (D) 5000

273. The write ahead protocol simply means that _____
(A) Writing of data should be done ahead of any logging operation.
(B) Log record for an operation must be written before the actual data is written.
(C) All log records should be written before new transaction begins the execution.
(D) The log never needs to be written to the disk.

274. Floating point numbers in a computer are represented using a 10-bit mantissa (including a sign bit) and a 7-bit exponent (including a sign bit). What is the approximate value of the maximum number, which can be represented? Assume that the mantissa is stored in the normalised form, that is, without leading zeroes.
(A) 2^{128} (B) 2^{127}
(C) 2^{64} (D) 2^{63}

275. The principal of locality justifies the use of
(A) Interrupts (B) DMA
(C) Polling (D) Cache Memory

276. Which scheduling policy is most suitable for a time-shared operating System?
(A) Shortest Job First (B) Round robin
(C) FCFS (D) Elevator

277. What is the major advantage of using incremental model?
(A) Customer can respond to each increment
(B) Easier to test and debug
(C) It is used when there is a need to get a product to the market early
(D) Both (B) and (C)

278. The spiral model has two dimensions namely _____ and _____.
(A) Diagonal, angular (B) Radial, perpendicular
(C) Radial, angular (D) Diagonal, perpendicular

279. 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) I-III-V-II-IV
(C) V-IV-III-II-I (D) IV-II-V-III-I

280. Which of the following statements is False:
(A) HTTP runs over TCP
(B) HTTP describes the structure of web pages
(C) HTTP allows information to be stored in URL
(D) HTTP can be used to test the validity of a hyper text link

281. Which of the following scheduling algorithm is likely to give better throughput?
(A) FCFS (B) SCAN
(C) C-SCAN (D) SSTF

282. Vision of IT/ITeS policy of Gujarat is framed based on equation
(A) Information Technology + Information Technology = Information Technology
(B) Indian Talent + Information Technology = India Tomorrow
(C) India Tomorrow = India Talent – Information Technology
(D) Both (A) and (C) are true

283. Which of the following is not the mission statement of IT/ITeS policy of Gujarat
(A) Enabling Information Technology for all sections of Society
(B) Facilitating MSMEs as not Key drivers of growth
(C) Empowering youth on ICT skills
(D) Making Gujarat a preferred destination for Global Knowledge Workforce and Industry

284. Which of the following statement is not the key objectives of Gujarat IT/ITeS Policy:
I. To increase the current investment in IT/ITeS sector by 30 times.
II. To increase the turnover up to USD 15 Bn.
III. To increase IT exports from the State up to USD 2 Bn.
IV. To promote and develop employment opportunities in the IT and ITeS Sector and provide direct employment to 10 lakh persons.
(A) Statement I (B) Statement II
(C) Statement III (D) Statement IV

285. GFCI means
(A) Gross Fixed Capital Investment
(B) Gross Food Corporation of India
(C) Gross Fibre Capital Investment
(D) Gross Fixed Corporation of India

286. What are ACID properties of a Transaction?
(A) Atomicity, Consistency, Isolation, Database
(B) Atomicity, Consistency, Isolation, Durability
(C) Atomicity, Consistency, Inconsistent, Durability
(D) Automatically, Concurrency, Isolation, Durability

287. Expansion of SMAC is
(A) Social Media, Maths, Atomicity, Cloud
(B) Social Media, Mobility, Analytics, Cloud
(C) Social Media, Maths, Accuracy, Cloud
(D) Social Media, Material, Atomicity, Cloud

288. Which of the following is true?
I. R is Open Source
II. R is Statistical Programming Language
(A) I is true
(B) II is true
(C) Both I and II are true
(D) Both I and II are False

289. Spell out the Acronym SMIL
(A) Synchronized Meta Integration Language
(B) Synchronized Multimedia Integration Language
(C) Sequential Meta Integration Language
(D) Sequential Multimedia Integration Language

290. Spell out Acronym CSS
(A) Cascading Style Sheet
(B) Cascading Show Sheet
(C) Circular Style Sheet
(D) Circular Show Sheet

291. When using the Script (<Script>) tag within an HTML document, the default language is _____
(A) Multimedia Script
(B) Java
(C) Python
(D) JavaScript

292. In early stages, e-learning was delivered through _____ usually delivered to the desktop via CD ROM
(A) Computer Based Test
(B) Computer Beta Test
(C) computer Based Training
(D) Computer Beta Training

293. Query Language such as _____ are used to retrieve data from the structured database
(A) NoSQL
(B) SQL
(C) DB2
(D) MSSQL

294. Data may be retrieved from database using _____ and ActiveX Data Object (ADO)
(A) Active Server Pages
(B) Passive Server Pages
(C) Authorized Server Pages
(D) JavaScript

295. Which of the following statements are true?
I. W3C stands for World Wide Web Consortium
II. WAI stands Web Accessibility Initiative
(A) I is true and II is false
(B) I is false and II is true
(C) Both I and II are true
(D) Both I and II are false

296. _____ uses algorithms and statistical tools to determine patterns in data gathered from customer visits

(A) Data Warehousing
(B) Data Mining
(C) Data Dredging
(D) Data Cleaning

297. A pay per sale model is also known as a _____

(A) Commission based model
(B) Trusted model
(C) un-trusted model
(D) CPM model

298. Choose the incorrect statement:

(A) A relation in 2NF must also be in 1NF
(B) A relation in 3NF must also abe in 2NF
(C) A relation in 3NF must also be in BCNF
(D) A relation in BCNF must also be in 3NF

299. Which of the following statements are true?

I. Entity Relationship Model is process oriented Model
II. Entity Relationship model belong to Semantic model category

(A) I only true
(B) II only true
(C) Both I and II are true
(D) Both I and II are false

300. Choose the correct order of operations in a SELECT statement:

(A) WHERE, GROUP BY, HAVING
(B) HAVING, GROUP BY, WHERE
(C) WHERE, HAVING, GROUP BY
(D) HAVING, WHERE, GROUP BY