CBRT - 2020
Question Paper Grid

Government of Goa   11 October 2020

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Assistant Professor(Computer Science)

<u>Itemcode</u> : **PC1111**

Q1 : Which of the following measurements is not a unit of distance?

(a) Ammeter
(b) Cubit
(c) Parsec
(d) angstrom
Key: **A**

<u>Itemcode</u> : **PC1112**

Q2 : Pitch of a sound depends upon its:

(a) Wavelength
(b) Frequency
(c) Amplitude
(d) Overtones
Key: **B**

<u>Itemcode</u> : **PC1113**

Q3 : The 'Cannes Award' is given for excellence in which field?

(a) Journalism
(b) Films
(c) Economics
(d) Literature
Key: **B**

<u>Itemcode</u> : **PC1114**

Q4 : Who amongst the following is the first Indian Woman Won Pulitzer prize?

(a) Arundhati Roy
(b) Kiran Desaiwrong
(c) Jhumpa Lahiri
(d) Manjula padmanabhan
Key: **C**

<u>Itemcode</u> : **PC1115**

Q5 : When the World Population Day is observed?

(a) June 7
(b) July
(c) July 11
(d) July 28
Key: **C**

<u>Itemcode</u> : **PC1116**

Q6 : The name of the Laccadive, Minicoy and Amindivi islands was changed to Lakshadweep by an Act of Parliament in

(a) 1970
(b) 1971
(c) 1972
(d) 1973
Key: **D**

<u>Itemcode</u> : **PC1117**

Q7 : Abdul Kalam Azad became the _____ President of India.

(a) 9th
(b) 10th
(c) 11th
(d) 12th
Key: **C**

<u>Itemcode</u> : **PC1118**

Q8 : Supreme Court Judges retire upon attaining the age of

(a) 65 years
(b) 62 years
(c) 68 years
(d) 70 years
Key: **A**

Itemcode : **PC1119**

Q9 : When was the Rashtriya Swayamsevak Sangh built?

(a) 26 November 1935
(b) 15 August 1947
(c) 27 September 1925
(d) 26 January 1950
Key: **C**

Itemcode : **PC1120**

Q10 : The first general elections under the Indian Constitution were held in _____.

(a) 1948
(b) 1957
(c) 1952
(d) 1950
Key: **C**

Itemcode : **PC1121**

Q11 : A man starts his morning walk facing East. He turns 25 degree in the anticlockwise direction and then 105 degree in the clockwise direction and again 270 degree in the anticlockwise direction. Find which direction he is facing now?

(a) South west
(b) North West
(c) North
(d) East south
Key: **A**

Itemcode : **PC1122**

Q12 : Statements:
All the Engineers are Bachelors.
All the Bachelors are Intelligent.
Conclusions:
1.)All the intelligent people are Bachelors.
2)All the Engineers are intelligent
3)All the Bachelors are Engineers.
4)Some intelligent people are Engineers.

(a) Only (1) and (4)
(b) Only (3) and (4)
(c) Only (2) and (4)
(d) Only (1) and (2)
Key: **C**

Itemcode : **PC1123**

Q13 : 80 fishermen can catch 2000 fishes in 10 days working 6 hours a day. In how many days 20 fishermen can catch 3000 fishes working 5 hours a day?

(a) 70
(b) 68
(c) 72
(d) 74
Key: **C**

Itemcode : **PC1124**

Q14 : A train 100m long travelling at 96km/hr. passes another train, which is travelling at 120km/hr. travelling in opposite direction, in 8 seconds. Then the length of the second train is

(a) 300m
(b) 280m
(c) 200m
(d) 380m
Key: **D**

Itemcode : **PC1125**

Q15 : ......least number must be added to 1056, so that the sum is completely divisible by 23 ?

(a) 2
(b) 3
(c) 18
(d) 21
Key: **A**

Itemcode : **PC1126**

Q16 : Which of the following is a prime number ?

(a) 33
(b) 81
(c) 93
(d) 97
Key: **D**

Itemcode : **PC1127**

Q17 Odd man out
:

7, 8, 18, 57, 228, 1165, 6996

(a) 8
(b) 18
(c) 57
(d) 228
Key: **D**

Itemcode : **PC1128**

Q18 Odd man Out
:

445, 221, 109, 46, 25, 11, 4

(a) 221
(b) 109
(c) 46
(d) 25
Key: **C**

Itemcode : **PC1129**

Q19 Each question has an underlined word followed by four answer choices. You will choose the word that is a necessary
: part of the underlined word.
harvest

(a) autumn
(b) stockpile
(c) tractor
(d) crop
Key: **D**

Itemcode : **PC1130**

Q20 Each question has an underlined word followed by four answer choices. You will choose the word that is a necessary
: part of the underlined word.desert

(a) cactus
(b) arid
(c) oasis
(d) flat
Key: **B**

Passage:
The factor of geographical distribution is equally, possibly even more, significant that English is spoken as first or native
language in at least four continents of the world, Russian in two, Chinese and the Indian language in one. English is without
question the closest approach to a world language today. It goes without saying that no two persons ever have an identical
command of their common language. Certainly, they have not precisely the same vocabulary. There are at least minor
differences in pronunciation, indeed the same individual will not pronounce his vowels and consonants in absolutely identical
fashion everytime he utters them. Everyone possesses, in addition, certain individual traits of grammatical form and
syntactical order, constituting that peculiar and personal quality of language which we term as style.'Style is the man.' No men
are identical, no two styles are the same. If this be true of but two persons, the potential of differences resident in a language
spoken by more than 200 million truly staggers imagination.

Itemcode : **PC1132**

Q21 The author argues that English is the closest approach to a world language because
:

(a) there are more native speakers of English than of any other language
(b) English has less number of mutually unintelligible dialects
(c) the geographical distribution of English covers a much greater area
(d) other languages are much too complex to be world languages
Key: **A**

Itemcode : **PC1133**

Q22 The fact that the same individual will not pronounce his vowels and consonants identically every time shows that
:

(a) literary style varies from person to person
(b) mutually intelligibility is a myth
(c) vocabulary varies from individual to individual
(d) no two persons speak the same language exactly the same way
Key: **D**

Itemcode : **PC1134**

Q23 It is evident from the passage that style is
:

(a) a strange type of language
(b) a language where one does not have to be particular about correctness and grammar
(c) language used in a particular way by an individual
(d) a question of grammatical and syntactic correctness
Key: **C**

Itemcode : **PC1135**

Q24 According to some authorities
:

(a) more people speak Chinese dialect than English
(b) more people speak English as an auxiliary language than as first language
(c) more people speak English in the UK than in England
(d) about one-fourth of the world's population speaks English
Key: **D**

Itemcode : **PC1136**

Q25 The overall implication of the passage is that
:

(a) to suppose that 230 million people speak English as a native language would certainly be an underestimate
(b) the 55 million inhabitants of the British Isles speak like the 30 million inhabitants of the dominions and colonies
(c) a little less than half the native English speakers in the world live in the US
(d) About one-tenth of the total English speaking world population lives in British dominions and colonies
Key: **A**

Itemcode : **PC1061**

Q26 A grammar that is both left and right recursive for non-terminal, is:
:

(a) ambiguous
(b) unambiguous
(c) information is not sufficient to decide whether it is ambiguous or unambiguous
(d) none of these
Key: **D**

Itemcode : **PC1062**

Q27 The string 1101 does not belong to the set represented by:
:

(a) 110 * (0+1)
(b) 1 (0 + 1)* 101
(c) (10) * (01) * (00 +11) *
(d) ((11) *+ 01)*
Key: **C**

Itemcode : **PC1063**

Q28 When an inverter is paced between both inputs of an SR flip-flop, then resulting flip-flop is
:

(a) JK flip-flop
(b) D flip-flop
(c) T flip-flop
(d) Master slave JK flip-flop
Key: **B**

Itemcode : **PC1064**

Q29 An interrupt that can be temporarily ignored by the counter is called
:

(a) vectored interrupt
(b) non-maskable interrupt
(c) maskable interrupt
(d) low priority interrupt
Key: **C**

Itemcode : **PC1065**

Q30 The keyword 'typedef' is used to:
:

(a) declare a member function that is defined in a subclass
(b) designation of the absence of a type
(c) declare objects that can be modified outside of program control
(d) declare a synonym for an existing type
Key: **D**

Itemcode : **PC1066**

Q31 Consider a machine with 64MB physical memory and a 32-bit virtual address space. If the page size is 4KB, then
: approximate size of the page table will be:

(a) 16 MB
(b) 8 MB
(c) 2 MB

(d) 24 MB
Key: **C**

Itemcode : **PC1067**

Q32 Which of the following statement(s) is(are) correct?
:

(a) Recursive languages are closed under complementation
(b) If a language and its compliment are both regular, the language is recursive
(c) 2 MB
(d) 24 MB
Key: **C**

Itemcode : **PC1068**

Q33 Which of the following characteristic of big data is relatively more concerned to data science ?
:

(a) Velocity
(b) Volume
(c) Variety
(d) None of the Mentioned
Key: **C**

Itemcode : **PC1069**

Q34 Which sentence can be generated by
:
    S->as | bA, A -> d | ccA

(a) bccddd
(b) abbbd
(c) aabccd
(d) ababccd
Key: **C**

Itemcode : **PC1070**

Q35 Context free languages are closed under:
:

(a) union, intersection
(b) union, kleene closure
(c) intersection, complement
(d) complement, kleene closure
Key: **C**

Itemcode : **PC1071**

Q36
:
Which is the most appropriate match for the items in the first column with the items in the second column?

    X: Indirect Addressing   I: Array implementation
    Y: Indexed Addressing   II: Writing relocatable code
    Z: Base Register Addressing   III: Passing array as parameter

(a) (X, III), (Y, I), (Z, II)
(b) (X, II), (Y, III), (Z, I)
(c) (X, III), (Y, II), (Z, I)
(d) (X, I), (Y, III), (Z, II)
Key: **A**

Itemcode : **PC1072**

Q37 The number of full and half-adders required to add 16-bit numbers is:
:

(a) 8 half-adders, 8 full-adders
(b) 1 half-adder, 5 full-adders
(c) 16 half-adders, 0 full-adders
(d) 4 half-adders, 12 full-adders
Key: **B**

Itemcode : **PC1073**

Q38 The binary equivalent of the decimal number 0.4375 is:
:

(a) 0.0111
(b) 0.1011
(c) 0.1100
(d) 0.1010
Key: **A**

Itemcode : **PC1074**

Q39 Which of the following is not true of deadlock prevention and deadlock avoidance schemes:
:

(a) In deadlock prevention, the request for resource is always granted if the resulting state is safe.
(b) In deadlock avoidance, the request for resource is always granted if the resulting state is safe.
(c) Deadlock avoidance is less restrictive than prevention.
(d) Deadlock avoidance requires knowledge of resource requirements
Key: **C**

Itemcode : **PC1075**

Q40 What is a shell?
:

(a) It is a hardware component
(b) It is a command interpreter
(c) It is a part in compiler
(d) It is a tool in CPU scheduling
Key: **B**

Itemcode : **PC1076**

Q41 What is the baud rate of the standard 10 Mbps Ethernet?
:

(a) 10 megabaud
(b) 20 megabaud
(c) 30 megabaud
(d) 40 megabaud
Key: **B**

Itemcode : **PC1077**

Q42 For every context free grammar (G) there exists an algorithm that passes any $w \in L(G)$ in number of
: steps proportional to

(a) $\ln|w|$

(b) $|w|$

(c) $|w|^2$

(d) $|w|^3$

Key: **D**

Itemcode : **PC1078**

Q43 Match the following:
:

I. TTL	i. High component density
II. ECL	ii. Low power consumption
III. MOS	iii. Evolution of "diodetransistor- logic"
IV. CMOS	iv. High speed digital circuits

(a)
I	II	III	IV
Iii	ii	i	iv

(b)
I	II	III	IV
i	iv	iii	ii

(c)
I	II	III	IV
iii	iv	i	ii

(d)
I	II	III	IV
i	ii	iii	iv

Key: **C**

Itemcode : **PC1079**

Q44 Convert the octal number 0.4051 into its equivalent decimal number.
:

(a) 0.5100098
(b) 0.2096
(c) 0.52
(d) 0.4192
Key: **A**

Itemcode : **PC1080**

Q45 Which one of the following is correct for overloaded functions in C++?
:

(a) Compiler sets up a separate function for every definition of function.
(b) Compiler does not set up a separate function for every definition of function.
(c) Overloaded functions cannot handle different types of objects.
(d) Overloaded functions cannot have same number of arguments.
Key: **A**

Itemcode : **PC1081**

Q46 There are three processes P1, P2 and P3 sharing a semaphore for synchronising a variable. Initial value of semaphore is
: one. Assume that negative value of semaphore tells us how many processes are waiting in queue. Processes access the
semaphore in following order:
(I) P2 needs to access
(II) P1 needs to access
(III) P3 needs to access
(IV) P2 exits critical section
(V) Pi exits critical section
The final value of semaphore will be:

(a) 0
(b) 1
(c) -1
(d) -2
Key: **A**

Itemcode : **PC1082**

Q47 In a packet switching network, if the message size is 48 bytes and each packet contains a header of 3 bytes; if 24
: packets are required to transmit the message, the packet size is ....

(a) 2 bytes
(b) 1 byte
(c) 4 bytes
(d) 5 bytes
Key: **D**

Itemcode : **PC1083**

Q48 The asymptotic upper bound solution of the recurrence relation given by
: $T(n)= 2T(n/2)+n/\log n$ is:

(a) $O(n2)$
(b) $O(n \log n)$
(c) $O(n \log \log n)$
(d) $O(\log \log n)$
Key: **C**

Itemcode : **PC1084**

Q49 Which statement is not correct about "init" process in Unix?
:

(a) It is generally the parent of the login shell.
(b) It has PID 1.
(c) It is the first process in the system.
(d) Init forks and execs a 'getty' process at every port connected to a terminal
Key: **C**

Itemcode : **PC1085**

Q50 A thread:
:

(a) is a light weight process where the context switching is low.
(b) is a light weight process where the context switching is high.
(c) is used to speed up paging
(d) none of the above
Key: **B**

Itemcode : **PC1086**

Q51 The maximum degree of any node in a simple graph with n vertices is :
:

(a) n-2
(b) n
(c) $\dfrac{n}{2}$
(d) n-1
Key: **D**

Itemcode : **PC1087**

Q52 Recursive function are executed in a
:

(a) last in first out order
(b) first in first out order
(c) parallel fashion
(d) all of these
Key: **A**

Itemcode : **PC1088**

Q53 A web page is located using a
:

(a) universal record linking
(b) uniform resource locator
(c) universal record locator

(d) uniformly reachable links
Key: **B**

Itemcode : **PC1089**

Q54 Constructor should be defined in _____ section of a class
:

(a) public
(b) private
(c) protected
(d) anywhere in the class
Key: **A**

Itemcode : **PC1090**

Q55 Heap is a chunk of memory which is assigned when:
:

(a) a program memory is allocated dynamically
(b) a program memory is allocated statically
(c) a program memory is allocated both statically and dynamically
(d) None of the above
Key: **A**

Itemcode : **PC1091**

Q56 $X = y = 1$
:

$Z = X ++ - 1$

Here, the value of X and Z will be

(a) 2 0
(b) 2 1
(c) 1 0
(d) error
Key: **A**

Itemcode : **PC1092**

Q57 Which of the following is not correct for virtual function in C++?
:

(a) Must be declared in public section of class.
(b) Virtual function can be static.
(c) Virtual function should be accessed using pointers.
(d) Virtual function is defined in base class.
Key: **B**

Itemcode : **PC1093**

Q58 A packet whose destination is outside the local TCP/IP network segment is sent to:
:

(a) File Server
(b) DNS Server
(c) DHCP Server
(d) Default gateway
Key: **D**

Itemcode : **PC1094**

Q59 Minimal super key is:
:

(a) primary key
(b) partial key
(c) candidate key
(d) super key
Key: **C**

Itemcode : **PC1095**

Q60 In SQL, which command is used to remove rows from a table:
:

(a) TRUNCATE
(b) DELETE
(c) REMOVE
(d) Both (a) and (b)
Key: **D**

Itemcode : **PC1096**

Q61 Cascading rollback can be avoided by:
:

(a) two phase locking protocol
(b) strict two phase locking protocol
(c) cannot be avoided

(d) can be avoided but there is no actual protocol
Key: **B**

Itemcode : **PC1097**

Q62 In RDBMS which data structure is used in internal storage representation?
:

(a) B^+ tree
(b) B tree
(c) Linked list
(d) Hash table
Key: **A**

Itemcode : **PC1098**

Q63 The following functional dependencies hold for relations R(A, B, C) and S(B, D, E)
:   B -> A
        A -> C
        The relation R contains 200 tuples and the relation S contains 100 tuples. What is the maximum number of tuples possible in the natural join R S?

(a) 100
(b) 200
(c) 300
(d) 2000
Key: **A**

Itemcode : **PC1099**

Q64 Which of the following allow the use of entire bandwidth simultaneously?
:

(a) TDMA
(b) FDMA
(c) CDMA
(d) None of the above
Key: **C**

Itemcode : **PC1100**

Q65 The argument of a copy constructor is passed by :
:

(a) value
(b) reference
(c) pointer
(d) both (a) and (c) above
Key: **B**

Itemcode : **PC1101**

Q66 The page fault
:

(a) occurs when the program accesses a page of memory
(b) is an error in the specific page
(c) is an access to a page not currently in memory
(d) is a reference to a page belonging to another program
Key: **C**

Itemcode : **PC1102**

Q67 Which of the statements below is true for the web application using session management?
:   (i) The session object is invalidated, when the session times out.
        (ii) The session object is invalidated, when sessionInvalidate() method of HttpSession is invoked

(a) None of the above statements is true
(b) Only statement (ii) is true
(c) Only statement (i) is true
(d) Both of the above statements are true
Key: **C**

Itemcode : **PC1103**

Q68 In a system with 32 bit virtual addresses and 1KB page size, use of one-level page tables for virtual to physical address
:   translation is not practical because of

(a) the large amount of internal fragmentation
(b) the large amount of external fragmentation
(c) the large memory overhead in maintaining page tables
(d) the large computation overhead in the translation process
Key: **A**

Itemcode : **PC1104**

Q69 The problem of finding hidden structure in unlabelled data is called
:

(a) Supervised learning
(b) Unsupervised learning
(c) Supervised learning

(d) Reinforcement learning
Key: **B**

Itemcode : **PC1105**

Q70 The extent to which different modules are dependent upon each other is called
:

(a) coupling
(b) cohesion
(c) modularity
(d) stability
Key: **A**

Itemcode : **PC1106**

Q71 In XML
:

(a) the internal DTD subset is read before the external DTD
(b) the external DTD subset is read before the internal DTD
(c) there is no external type of DTD
(d) there is no internal type of DTD
Key: **A**

Itemcode : **PC1107**

Q72 Internet data is broken-up as
:

(a) fixed length packets
(b) variable length packets
(c) not packetized
(d) 64 bytes packets
Key: **B**

Itemcode : **PC1108**

Q73 Context diagram explains
:

(a) the overview of the system
(b) the internal view of the system
(c) the entities of the system
(d) None of the above
Key: **A**

Itemcode : **PC1109**

Q74 Algorithm design technique used in quicksort algorithm is?
:

(a) Dynamic programming
(b) Backtracking
(c) Divide and conquer
(d) Greedy method
Key: **C**

Itemcode : **PC1110**

Q75 Which among the following is correct characteristics about proxy server:
:

(a) A proxy server may act as a firewall by responding to input packets in the manner of an application while blocking other packets.
(b) A proxy server is a gateway from one network to another for a specific network application
(c) It performs its tasks or functions as a proxy on behalf of the network user;
(d) All of the Above
Key: **D**