

Verbal Ability (20 qus 20 min)

Directions for Questions 1-3 : Choose the option which will correctly fill the blank.

1) I am writing to enquire \_\_\_\_\_ the possibility of hiring a conference room at the hotel on the 2nd of September.

- A) Of
- B) About
- C) Into
- D) After

2) \_\_\_\_\_ having her lunch, she stood - the tree and waited \_\_\_\_\_ him.

- A) With, below, for
- B) After, under, for
- C) Inside, further, to
- D) About, across, into

3) The microscopic animals are the primary food for larval cod and their decline has meant that fewer fish are making it to adulthood to be caught \_\_\_\_\_ trawler men.

- A) In
- B) Into
- C) By
- D) With

Directions for Questions 4-6 : Choose the word nearest in meaning to the word from the given options.

4) The jacket is impervious to water.

- A) Dirty
- B) Pure
- C) Impenetrable
- D) Favourable

5) Chandan was chagrined with the continuous disruption of the power supply to his home.

- A) Delighted
- B) Creation
- C) Peeved
- D) Security

6) The latest ordinance issued by the government has provided the bank with two options.

- A) Decision
- B) Law
- C) Opinion
- D) Verdict

Directions for Questions 7-10: Choose the answer option which will correctly fill the blank.

7) \_\_\_\_\_ great writer is convinced that whatever he says is not an echo or imitation of what others have said.

- A) An
- B) The
- C) A
- D) No article required

8) \_\_\_\_\_ Reserve Bank of India directed banks to closely watch \_\_\_\_\_ spending through International Debit Cards.

- A) A, the
- B) The, the
- C) The, a
- D) -n, the

9) The officer received \_\_\_\_\_ official letter from \_\_\_\_\_ Ministry of IT in \_\_\_\_\_ Central Government.

- A) A, the, an
- C) An, the, the
- B) A, an, the
- D) An, an, the

10) You CANNOT send out \_\_\_\_\_ uneducated man into \_\_\_\_\_ world of technology and expect him to perform.

- A) An, an
- B) A, an
- C) An, the
- D) The, an

Directions for Questions 11-15: Read the passage and answer the questions that follow on the basis of the information provided in the passage.

Microprocessor is an electronic computer Central Processing Unit (CPU) made from miniaturized transistors and other circuit elements on a single semiconductor Integrated Circuit (IC). Before the advent of microprocessors, electronic CPUs were made from individual small-scale Integrated Circuits containing the equivalent of only a few transistors. By integrating the processor onto one or a very few large-scale Integrated Circuit packages (containing the equivalent of thousands or millions of discrete transistors), the cost of processor power was greatly reduced. The evolution of microprocessors has been known to follow Moore's Law when it comes to steadily increasing performance over the years. This law suggests that the complexity of an Integrated Circuit with respect to minimum component cost will double in about 18 months. From humble beginnings as the drivers for calculators, the continued increase in power has led to the dominance of microprocessors over every other form of computer; every system from the largest mainframes to the smallest handheld computers now uses a microprocessor at their core. As with many advances in technology, the microprocessor was an idea whose time had come. Three projects arguably delivered a complete microprocessor at about the same time: Intel's 4004, Texas Instruments, TMS1000, and Garrett AiResearch's Central Air Data Computer. A computer-on-a-chip is a variation of a microprocessor, which combines the microprocessor core (CPU), some memory, and I/O (input/output) lines, all on one chip. The proper meaning of microcomputer is a

computer using a (number of) microprocessor(s) as its CPU(s), while the concept of the patent is somewhat more similar to a micro controller.

11) Which of the following descriptions would NOT fit a microprocessor?

- A) Electronic computer
- B) Central Processing Unit
- C) Memory disk
- D) A single integrated chip circuit.

12) Select the TRUE statement from the following.

- A) Microprocessors and computers on a chip are variations of each other.
- B) Integration of processing power on chips has made processing power cheaper.
- C) Before microprocessors, CPUs were not made from individual small scale ICs.
- D) A microprocessor circuit only has transistors in it.

13) Which of the following was NOT the first to develop a microprocessor?

- A) Microsoft
- B) Intel
- C) Texas Instruments
- D) Garret

14) According to the passage, which of these is NOT a use of microprocessors?

- A) Drivers for calculators
- B) Core for large mainframes
- C) Advanced mobile phones
- D) Used for small handheld computers

15) "A number of microprocessors at its CPU" is an apt description of a:

- A) Micro-controller
- B) Micro-computer
- C) Micro-processor
- D) Micro-transistor

Directions for Questions 16-20: Read the passage and answer the questions that follow on the basis of the information provided in the passage.

Dynamic Link Libraries Windows provides several files called dynamic link libraries (DLLs) that contain collections of software code that perform common functions such as opening or saving a file. When Windows application wants to use one of those functions or routines, the app sends a message to Windows with the names of the DLL file and the function. This procedure is known as calling a function. One of the most frequently used DLLs is Windows COMMDLG.DLL, which includes among others, the functions to display File Open, File Save, Search, and Print dialog boxes. The application also sends any information the DLL function will need to complete the operation. For example, a program calling the Open File function in COMMDLG.DLL would pass along a file spec, such as \*. \* or \*.DOC, to be displayed in the dialog box,s Filename text box. The application also passes along a specification for the type of information it expects the DLL to return to the application when the DLL,s work is done. The

application, for example, may expect return information in the form of integers, true/false values, or text. Windows passes the responsibility for program execution to the DLL, along with the parameters and the return information the DLL will need. The specific DLL is loaded into memory, and then executed by the processor. At this point the DLL, rather than the application, runs things. The DLL performs all the operations necessary to communicate with Windows and, through Windows, with the PC's hardware. After the DLL function is complete, the DLL puts the return information into memory, where it can be found by the application, and instructs Windows to remove the DLL routine from memory. The application inspects the return information, which usually tells whether the DLL function was able to execute correctly. If the operation was a success, the application continues from where it left off before issuing the function call. If the operation failed, the application displays an error message.

16) By using DLLs, Windows:

- A) Saves processing time
- B) Multitasks
- C) Shares program code
- D) Communicates with PC's hardware

17) To use any routine of a DLL, Windows:

- A) Searches and copies it in the application code and executes it
- B) Loads the DLL file and searches and executes the routine
- C) Loads just the required routine in memory and executes it
- D) Searches the location of the routine and instructs the application to execute it

18) Which information does an application need to pass to Windows to use a DLL routine?

- A) Just the name of the routine
- B) Just the name of the DLL, which finds in turn the routine to be executed in return
- C) Both the name of the routine as well as DLL and any parameters
- D) Name of the DLL, routine, any parameters and type of information to be returned

19) According to the passage, while the DLL routine is executing, the calling application:

- A) Waits for the routine to execute
- B) Continues with other tasks
- C) Helps the DLL routine perform by communicating with Windows and through Windows with the PC's hardware
- D) Passes all responsibility of program execution to the DLL and is removed from memory

20) The DLL function after execution returns:

- A) The parameters and information into memory, where it can be inspected by the calling application
- B) Information into memory, where it can be inspected by the calling application
- C) To the calling application the information required by it so that it can inspect it
- D) The information required into memory so that DLL can inspect whether the function operation was a success

Attention To Detail (15 qus ,15 min)

Directions for Questions 1-8: Follow the directions given below to answer the questions that follow. Your answer for each question below would be: A, if ALL THREE items given in the question are exactly ALIKE. B, if only the FIRST and SECOND items are exactly ALIKE. C, if only the FIRST and

THIRD items are exactly ALIKE. D, if only the SECOND and THIRD items are exactly ALIKE. E, if ALL THREE items are DIFFERENT.

1) LLMLLLKLMPUU, LLMLLLKLMPUU, LLMLLLKLMPUU

- A) A
- B) B
- C) C
- D) D
- E) E

2) 0452-9858762, 0452-9858762, 0452-9858762

- A) A
- B) B
- C) C
- D) D
- E) E

3) NIINIININN, NIININNINN, NIINIININN

- A) A
- B) B
- C) C
- D) D
- E) E

4) 4665.8009291, 4665.7999291, 4665.8009291

- A) A
- B) B
- C) C
- D) D
- E) E

5) 808088080.8080, 808008080.8080, 808088080.8080

- A) A
- B) B
- C) C
- D) D
- E) E

6) If \* stands for /, / stands for -, + stands for \* and - stands for +, then  $9/8*7+5-10=?$

- A) 13.3
- B) 10.8
- C) 10.7
- D) 11.4

7) If \* stands for /, / stands for -, + stands for \* and - stands for +, then  $9/15*9+2-9=?$

- A) 14.7
- B) 15.3

- C) 14.1  
D) 16.2

8) If \* stands for /, / stands for -, + stands for \* and - stands for +, then which of the following is TRUE?

- A)  $36/12*4+50-8 = -106$   
B)  $12*8/4+50-8 = 45.5$   
C)  $36*4/12+36-8 = 4.7$   
D)  $8*36/4+50-8 = 300$

Directions for Questions 9-11: In the following questions, the following letters indicate mathematical operations as

indicated below: A: Addition V: Equal to S: Subtraction W: Greater than M: Multiplication X: Less than D: Division

Out of the four alternatives given in these questions, only one is correct according to the above letter symbols. Identify the correct one.

9) See the options given below

- A) 6 S 7 A 2 M 3 W 0 D 7  
B) 6 A 7 S 2 M 3 W 0 A 7  
C) 6 S 7 M 2 S 3 W 0 M 7  
D) 6 M 7 S 2 A 3 X 0 D 7

10) If \* stands for -,/ stands for +, + stands for / and -stands for \*, then which of the following is TRUE?

- A)  $16/8*6+90-12 = 23.2$   
B)  $8*12/6+90-12 = 7.2$   
C)  $16*6/8+16-12 = -4.1$   
D)  $12*16/6+90-12 = 8$

11) If \* stands for -,/ stands for +, + stands for / and -stands for \*, then which of the following is TRUE?

- A)  $16*4/18+16-8 = -10.1$   
B)  $18*8/4+40-8 = -2.8$   
C)  $16/18*4+40-8 = 33.2$   
D)  $8*16/4+40-8 = -2$

Directions for Questions 12-15: For the post of a manager of a leading call centre -Arcade Inc. - situated in Ludhiana, the following are the criteria the candidate must satisfy: - The candidate should have a Management Degree. – The candidate should have at least 4 years of similar experience at-another call centre. - The candidate should be more than 30 years of age as on the 1st of July 2003. - The candidate should have 6 months of international exposure, i.e. should have been posted in a foreign country. If a candidate does not satisfy the 1st condition but has more than 2 years of international experience, then the VP operations, will interview him. If a candidate does not satisfy the 4th condition, then the HR manager will interview him.

12) Shakuntala was selected for a managerial position in an international call center after she passed out from AIM Management Institute. After working for 3 years in the call center, she took a

sabbatical. She is 29 years of age as on the date of application. She will be:

- A) Interviewed only by the HR
- B) Interviewed only by the VP
- C) Rejected
- D) Data insufficient

13) Rajiv has been working as a Manager in Zephyr Inc. for 4 years now. He is an Engineering graduate from a premier engineering institute. His certificate lists his date of birth as 17/12/1974. He has worked in the hotel industry at the executive level. He is:

- A) Give an aptitude test
- B) Interviewed by the VP
- C) Data insufficient
- D) Not considered

14) Soma has 2 years of experience in Welsh Inc. and 2 years of experience in Franc Inc., both leading call centers, as a manager. She has a management degree from a premier management organization. She turned 30 this December (2002). She is a B.Com Graduate from St. Xavier,s, Calcutta. If she applies for the post, she will:

- A) Be interviewed directly by the VP Operations
- B) Not be considered
- C) Be interviewed by the HR
- D) Have to give an aptitude test

15) Salina has over 4 years of experience in Care Touch, a leading call center, as a manager. She completed her MBA from Ranchi and worked in Singapore for UNO for 2 years before joining Care Touch. She will be:

- A) Recruited
- B) Rejected
- C) Interviewed by dle VP Operations
- D) Data insufficient

Analytical Ability(25 qus 25 min)

1) 70 students are required to paint a picture. 52 use green color and some children use red, 38 students use both the colours. How many students use red color?

- A) 24
- B) 42
- C) 56
- D)70

2) At an international conference, 100 delegates spoke English, 40 spoke French, and 20 spoke both English and French. How many delegates could speak at least one of these two languages?

- A) 110
- B) 100
- C) 140
- D) 120

3) A group of 50 students were required to clear 2 tasks, one in rock-climbing and the other in bridge crossing during an adventure sports expedition. 30 students cleared both the tasks. 37 cleared bridge crossing, 38 students cleared rock climbing. How many students could not clear any task?

- A) 0
- B) 3
- C) 5
- D) 9

4) A dance instructor conducts annual workshops in which he holds sessions for basic learners and trainers. In a particular year, 2000 people attended the workshop. 1500 participated as learners and 800 as trainers. How many participated as only trainers?

- A) 200
- B) 500
- C) 800
- D) 1500

5) In a group of 400 readers who read science fiction or literacy works or both, 250 read science fiction and 230 read literacy works. How many read both science fiction and literacy works?

- A) 80
- B) 160
- C) 220
- D) 400

6) A man said to a lady, "Your mother's husband's sister is my aunt". How is the lady related to the man?

- A) Daughter
- B) Grand daughter
- C) Mother
- D) Sister

7) A man is facing west. He turns 45 degree in the clockwise direction and then another 180 degree in the same direction and then 270 degree in the anticlockwise direction. Which direction is he facing now?

- A) South
- B) North-West
- C) West
- D) South-West

8) In a row of 60, if Ram is standing at 17th from the first, what is his position from the last?

- A) 25
- B) 43
- C) 44
- D) 45

9) A man is facing northwest. He turns 90 degrees in the clockwise direction and then 135 degrees in the anticlockwise direction. Which direction is he facing now?



- A) East
- B) West
- C) North
- D) South

10) What three letter word best completes the below words? VA - \_\_E S\_\_TER - - \_ER

- A) STR
- B)TER
- C) CAT
- D)FAT

Directions for Questions 11-15: In the following questions mark: 1, if the question can be answered with the help of statement I alone. 2, if the question can be answered with the help of statement II alone. 3, if the question can be answered with the help of both I and II. 4, if the question cannot be answered at all.

11) What is the value of P? I. P and Q are integers II.  $PQ = 10$ ,  $P + Q = 5$

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

12) Who got the highest score in the Mathematics examination, among Sumit, Amit and Namit. No two students got the same marks. I. Sumit got more marks than Namit. II. Amit did not get lesser marks than Sumit, who did not get lesser marks than Namit.

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

13) How many hours does it take some boys and girls in a camp to put up the tent? I. There are 4 boys and 7 girls. II. A girl can put up the tent in 5 hours and a boy can put up the tent in 3 hours.

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

14) If p, q, r, s and t are in an Arithmetic Progression, is r the largest among them? I.  $t > 0$  II. p, q

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

15) Is X a whole number, if  $X > 0$ ? I.  $2X$  is an even number. II.  $3X$  is an odd number.

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

Directions for Questions 16-20: In the following questions mark: 1, if the question can be answered with the help of statement I alone. 2, if the question can be answered with the help of statement II alone. 3, if the question can be answered with the help of both I and II. 4, if the question cannot be answered at all.

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19) If p, q, r, s and t are in an Arithmetic Progression, is r the largest among them? I.  $t > 0$  II. p, q

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- C)3
- D)4

Directions for Questions 21-25: In a certain code, the symbol for 0 (zero) is. \* and that for 1 is \$. The numbers greater than 1 are to be written only by using the two symbols given above. The value of the symbol for 1 doubles itself every time it shifts one place to the left. (For example, 4 is written as \$\*\*; and; 3 is written as \$\$)

21)  $11 \times 17 / 10 + 2 \times 5 + 3 / 10$  can also be represented as:

- A) \$\*\$\$\*

- B) \$\*\$\$\$
- C) \$\$\$\*\$
- D) \$\*\*\$\$

22) 260 can be represented as:

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

23) 60 / 17 can also be represented as:

- A) \$\$\$\*\$\*\* / \$\$\$\*\*\$
- B) \$\$\$\*\*\*\*\* / \$\$\$\*\*\$
- C) \$\*\$\*\$\*\* / \$\$\$\*\*\$
- D) \$\$\$\*\$\*\* / \$\$\$\*\*\$

24) \$\*\*\*\$ can be represented as:

- A) \$\$\$ / \$\*
- B) \$\*\$\*\* - \$\$
- C) \$\*\$\*\$ - \$\$
- D) \$\$\$\*\*\*\$ - \$\$

25) 30^2 can be represented as:

- A) (\$\*\$\*\$) \$\* + \$\*\$\*\$\*\$
- B) (\$\*\$\*\$) \$\* + \$\$\$\*\*\$
- C) (\$\*\$\*\$) \$\$ + \$\*\$\*\*\$
- D) (\$\*\$\*\$) \$\$ + \$\*\$\*\*\$

c programming (15 questions-30 minutes)

1) Write an efficient C function f to count the number of bits set in an unsigned integer. For example: f(0) = 0, f(1) = 1, f(2) = 1, f(3) = 2.

2) Write a small C program, which while compiling takes another program from input terminal, and on running gives the result for the second program. (Hint: Think UNIX.) Suppose the program is 1.c; then compiling and executing the program should have the following effect:

```
# cc -o 1 1.c
int main()
{
printf("Hello Worldn");
}
^D
# ./1
Hello World
```

3) Given strings s1 and s2, write a snippet to say whether s2 is a rotation of s1 using only one call to the strstr function. For example, given s1 = "ABCD" and s2 =

"CDAB", return true; given s1 = "ABCD", and s2 = "ACBD", return false.

4) What should be the so that the following code snippet prints

```
"HelloWorld"?  
if()  
printf ("Hello");  
else  
printf("World");
```

5) Ugly numbers are numbers whose only prime factors are 2, 3 or 5. The sequence 1, 2, 3, 4, 5, 6, 8, 9, 10, 12, 15, . . . shows the first 11 ugly numbers. By convention, 1 is included. Write a program to find and print the 1500'th ugly number.

[Note: These numbers are also known as "Hamming numbers" or 5-smooth numbers.]

6) Write a C program which when compiled and run, prints out a message indicating whether the compiler that it is compiled with allows /\* \*/ comments to nest.

7) Write a C function that will take an int parameter n and print on stdout numbers 1 to n, one per line. The function must not use while, for, do-while loops, goto statement, recursion, or switch statement.

8) Change/add only one character so that the following program prints \* exactly 20 times. (There are atleast 3 solutions to this problem.)

```
int main()  
{  
int i, n = 20;  
for (i = 0; i printf("*");  
return 0;  
}
```

9) You are given have a datatype, say X in C. Determine the size of the datatype, without declaring a variable or a pointer variable of that type, and, of course without using the sizeof operator!

10) Find the midpoint of a singly-linked list in a single pass through the list. Changing the list elements or links is not allowed.

11) Given a circular singly-linked list of sufficiently large number of nodes (say more than 1), delete the node P given the pointer to it. Suggest the most efficient algorithm to delete the node, without going around the list.

12) Write a C Program to reverse a stack in place using recursion. You can only use the following ADT functions on stack: IsEmpty, IsFull, Push, Pop, Top.

13) You are provided with two stacks, as well as Pop and Push functions over them. Implement queue i.e. Enqueue and Dequeue using the available operations.

14) Describe an algorithm for reversing the words in a string; for example "My name is Amit Agarwal" becomes "Agarwal Amit is name My". An O(n) and in-place solution is appreciable.

15) You are given a sequence of numbers from 1 to  $n$  with one of the numbers repeating only once; e.g. 1 2 3 3 4 5.

- How can you find the repeating number?
- What if given the constraint that you can use only a fixed amount of memory (i.e. independent of  $n$ )?
- What if there are two repeating numbers instead of one (with the same memory constraint)?

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