

SECTION 1- APTITUDE SECTION

Directions for questions 1-3: Complete the sequence given below

1. 5, 5, 13, 13, 21, 21, __

Ans: 29

2. 0, 7, 26, 63, 124, __

Ans: 215 (hint: n^3-1)

3. 1, 3, 5, 7, __

Ans: 9

4. If a person walks at $\frac{4}{5}$ th of his usual speed he reaches 40min late. If he walks at his usual speed for how much time does he travel ?

5. Two trains A&B start at opposite points 120km apart at 60kmph. A fly starting along with train A at 120kmph reaches B then returns back to touch A and continues the two and fro movement. By the time two trains meet how much distance would the fly have travelled?

6. In a class 80% have passed in english, 70% passed Hindi, 10% didn't pass either. If 144 students passed both the subjects. What is the total strength of the class?

7. Find the least number which when divided by 7 gives the remainder 6, when divided by 6 gives remainder 5, when divided by 5 gives remainder 4 and so on ?

8. If a man stands in front of sun what is the first letter of the direction which is left to him ?

9. (a) A square is to circle as cube is to
(b) Success is to failure as joy is to

10. (a) Give the synonyms of the following words

- (i) Joy
- (ii) Inert
- (iii) Jolly

(b) Give the opposites of the following words

- (i) genuine
- (ii) command
- (iii) essential

11. Find the odd man out in the following sets

- (i) Tiger, Elephant, King Cobra, Dolphin
- (ii) Oasis, Lake, Pool, Valcano

- (iii) Bengali, Karnataka, Mumbai, Kashmir
- (iv) Lapidary, Lancet, Scapel, Surgeon
- (v) Requiem, Dirge, Elegy, Paean

12. I bought a cycle 2 days before my birthday and I broke it 3 days after my birthday. The day I broke it is Mar 2, 1956?

Directions: The following questions are to be answered on the basis of the above given statement

i) When is my birthday?

Hint: Keep in mind that 1956 was a leap year.

(ii) What is my age on Mar 4th, 1980?

(iii) My nephew is born exactly 20 years after me. If I turned 20 in 1960, what is the nephew's age on Feb 28th 1988?

13. Monday Aug 25, 96 :

Hostess: "Mr A, you forgot your umbrella during the party on last Friday. I expected you to collect it on your visit on Wednesday as I plan to leave on this Friday."

Directions: The following questions are to be answered on the basis of the above given statement

(i) When A missed umbrella?

(ii) When A is supposed to collect it?

(iii) When K leaves?

14. What is my father's son's son to my son?

Ans. Cousin brother

15. On cutting a solid parabola what would be generated

Ans: Cone

16. What is Euler's formula?

Ans: $F + V - E = 2$; where

$F \Rightarrow$ faces; $V \Rightarrow$ vertices; $E \Rightarrow$ number of edges

17. What is Newton Raphson method used for?

Ans: To find the root of $f(x) = 0$;

18. How many tangents can be drawn on three circles if they don't lie within each other?

19. $xy - x + 2y = 6$ equation is shifted to form equation $xy = c$ what is c ?

20. When x is real what is the least value of $(x^2 - 6x + 5)/(x^2 + 2x + 1)$

21. When an object like cube or sphere is seen along x , y , z axis we get the same. Apart from these suggest another object which has similar characteristics as that mentioned above?

Ans: Triangular prism

22. When an object is seen from the front side we can see two concentric squares and top view also without any hidden lines. Draw the side view.

23. In common parlance, $A \Rightarrow B$ means what

Ans: if A is true B has to be true

23. If A is not invertible and $BA = I$ is not possible, what is implied by this?

Ans: Determinant is Zero.

24. What is a free body diagram used for

25. A die is thrown twice what is the probability that you get same number

26. The sum of two numbers is 55. What is the larger number?

SECTION 2-TECHNICAL SECTION

1. Convert 251 in base 10 to octal(base 8)?

2. How much information can be stored in 1 byte of a IBM pc compatible?

3. What is the language used for Artificial Intelligence

Ans: lisp

4. Swap two variables without using temporary variable

Ans: $a = a + b$; $b = a - b$; $a = a - b$;

5. Which is not the operating system ?

Ans: BIOS

6. What is the optimum number of operations for $2x^3 + 3x^2 + 5x + 5$?

7. In the fortran language which of the following is true.

- (i) fortran uses call by value
- (ii) fortran is object oriented
- (iii) fortran allows use of function overloading

Ans. (i)

8. When a program is compiled what does it produce?

Ans: Source code is converted to object code

9. What is the difference between function overloading and function overriding?

10. What is the character set used in JAVA 2.0 ?

Ans: Unicode

SECTION 3 - C TEST

1. What is the mistake in the following program segment ?

```
f()
{
int a;
void c;
f2(&c,&a);}
```

2. a=0;
b=(a=0)?2:3;

- a) What will be the value of b and why ?
- b) If in first statement a= 0 is replaced by a= -1, b = ?
- c) If in second statement a=0 is replaced by a = -1, b=?

```
3. char *a[2];
int const *p;
int *const p;
struct new { int a;int b; *var[5] (struct new)}
```

Describe the statements in the above given construct ?

```
4. f()
{
int a=2;
f1(a++);
```

```
    }  
f1(int c)  
{  
printf("%d", c);  
}
```

What is the value of c ?

```
5. f1()  
{  
    f(3);  
}  
f(int t)  
{  
switch(t);  
{  
case 2: c=3;  
case 3: c=4;  
case 4: c=5;  
case 5: c=6;  
default: c=0;  
}
```

What is the value of c?

6. What is the fallacy in the following program segment ?

```
int *f1()  
{  
int a=5;  
return &a;  
}  
f()  
int *b=f1()  
int c=*b;  
}
```

7. Give the C language equivalents of the following

- a)Function returning an int pointer
- b)Function pointer returning an int pointer
- c)Function pointer returning an array of integers
- d)Array of function pointer returning an array of integers

8. Find the fallacy in the following program segment?

```
int a;  
short b;  
b=a;
```

9. Define function ? Explain arguments in functions ?

10. How does C pass variables to a function ?

11. Explain the following program segment.

```
f(){  
int *b;  
*b=2;  
}
```

12. Explain binary trees and their use ?

13. Draw the diagram showing the function stack, illustrating the variables that were pushed on the stack at the point when function f2 has been introduced .

```
type def struct  
{ double x,double y} point; }  
main( int argc, char *arg[3])  
{ double a;  
int b,c;  
f1(a,b); }
```

```
f1(double x, int y)  
{point p;  
stack int n;  
f2(p,x,y)  
}
```

```
f2(point p, double angle)  
{ int i,j,k,int max;  
}
```