Aptitude

1. The ratio of the age of a man and his wife is 6:5. After 16 years, the ratio becomes 10:9. Find the husband's age when the wife was born.

2. If Manoj lends ₹10000 to Karthik at 10% per annum and Karthik lends to Vignesh at 14% per annum, find Karthik's gain in a period of 4 years.

3. A man loses 20% of his money and after spending 70% of the remainder, he is left with Rs. 270. How much money did he originally have?

4. A defect-finding machine rejects 0.085% of all cricket bats. Find the number of bats manufactured on a particular day if it is given that on that day, the machine rejected only 34 bats.

5. 40 liters of mixture of milk and water contains 25% of water. When 10 liters of water is added, what will be the percentage of milk in the final mixture?

6. Susan and Lisa decided to play tennis against each other. They bet $1 on each game they played. Susan won three bets and Lisa won $5. How many games did they play?

7. If machine A polishes x units in 12 minutes and machine B polishes 5x units in 40 minutes, in how many minutes will A and B, working together, polish 50x units.

8. Set A comprises all 3-digit numbers that are multiples of 6. Set B comprises all 3-digit numbers that are multiples of 4 but are not multiples of 8. How many elements does (A ∪ B) comprise?

9. In an examination, 80% of the students passed in English, 85% in Mathematics, and 75% in both English and Mathematics. If 40 students failed in both subjects, find the total number of students who appeared in the examination.

10. A box contains 2 white balls, 3 black balls and 4 red balls. In how many ways can 3 balls be drawn from the box, if at least one black ball is to be included in the draw?

Programming

1. Find the output of the following program.

```c
#include<stdio.h>

int main() {
   float x = 0.1;
   if (x == 0.1)
     printf("IF");
   else if (x == 0.1 f)
     printf("ELSE IF");
   else
     printf("ELSE");
}
```

2. Find the output of the following program.

```c
int main() {
   int a[10] = {
     9,
     8,
     2,
     3,
     1
   };
   int i, j, m;
   i = a[0];
   j = a[i];
   m = a[j];
   printf("%d, %d, %d", i, j, m);
   return 0;
}
```

3. Find the output of the following program.

```c
#include<stdio.h>

#include<string.h>

int main() {
   char str[9] = {
     'z',
     'o',
     'h',
     'o',
     'c',
     'o',
     'r',
     'p'
   };
   int i, j, len;
   len = strlen(str);
   for (i = 0, j = 1;
     (i + j) < len; i++) {
     if (str[i] < str[i + j]) {
       str[i] = str[i] + 1;
     } else {
       str[i + j] = str[i + j] + 1;
     }
   }
   printf("%s", str);
   return 0;
}
```

4. Find the output of the following program.

```
#include<stdio.h>

int main() {
  int i = 2, j = 2;
  while (i + 1 ? --i : j++)
    printf("%d", i);
  return 0;
}
```

5. Find the output

```
#include<stdio.h>

int main() {
   int i = 5;
   printf("%d%d%d%d%d%d", i++, i--, ++i, --i, i);
}
```

6. Find the output of this snippet:

```
int a, b;
for (a = 6, b = 4; a <= 24; a = a + 6) {
   if (a % b == 0)
      break;
}
System.out.println(a);
```

7. Find the output of the following program.

```
1  int main() {
2    int val = 2;
3
4    do {
5      val++;
6      ++val;
7    } while (val++ == 4);
8
9    printf("%d\n", val);
10
11   return 0;
12 }
```

8. Find the output of the following program.

```
1   #include<stdio.h>
2
3   void fun(int n, int m) {
4     if (n > 0) {
5       fun(--n, ++m);
6       printf("%d %d\n", n, m);
7       fun(--n, ++m);
8     }
9   }
10
11  int main() {
12    int a = 3;
13    fun(a, a);
14    return 0;
15  }
```

9. Find the output of the following program.

```
1  int fun(int val) {
2     int i;
3     int ans = val;
4     for (i = 0; i < val; i++) {
5        ans = ans + (val * val);
6     }
7     return ans;
8  }
9
10 int main() {
11    int i[5] = {
12       0,
13       1,
14       2,
15       3,
16       4
17    };
18
19    int n = 0;
20    do {
21       printf("%d ", fun(i[n]));
22    } while (++n < 5);
23
24    return 0;
25 }
```

10. Find the output of the following program.

```c
#include <stdio.h>

int main() {
   static int staticVar;
   int j;
   for (j = 0; j <= 5; j += 2)
     switch (j) {
     case 1:
       staticVar++;
       break;
     case 2:
       staticVar += 2;
     case 4:
       staticVar %= 2;
       j = -1;
       continue;
     default:
       --staticVar;
       continue;
     }
   printf("%d", staticVar);
   return 0;
}
```