**Bit Fields in Union and Structure assignments**

Mandatory

1. You need to store the status of traffic light i.e status of Red, Green, Organge Bulb On/Off status. Define an appropriate data structure for this.

Ans:

struct TrafficLight

{

unsigned int red : 1; // 1 bit for Red light status

unsigned int green : 1; // 1 bit for Green light status

unsigned int orange : 1; // 1 bit for Orange light status

};

2. Define an appropriate data structure to store Person details namely name [max length 100 bytes], age (considering person living for 100 years).

Ans:

struct Person

{

char name[100]; // Array to store name (max length 100 bytes)

unsigned int age : 7; // 7 bits to store age (0-127, sufficient for 0-100 years)

};