SEC-A Q# 01: (OUTPUT)

```
Command Window
>> assl
Inverse of A:
Command Window
>> assl
Inverse of A:
   -0.0059   -0.0117   -0.0078    0.0059   -0.0117    0.0078
    0.0586    0.1250    0.0938   -0.0586    0.1094   -0.0625
   -0.1563   -0.3750   -0.3750    0.1563   -0.2500    0.1250
         0         0    0.5000         0         0         0
         0    1.0000         0         0         0         0
    1.0000         0         0         0         0         0

Quintic polynomial coefficients:
    0.0261
   -0.2608
    0.6954
         0
         0
    1.0472

WHEN T=0
q= 0.0261          v= -0.2608          a= 0.6954

WHEN T=4
q= 0.0000          v= 0.0000          a= 1.0472>>
```

SEC-A Q# 03: (OUTPUT)

```
Command Window
>> assl

s2 =

   5.0000e-09

Inverse of A:
   -0.0019   -0.0048   -0.0040    0.0019   -0.0048    0.0040
    0.0528    0.1360    0.1200   -0.0528    0.1280   -0.1000
   -0.5408   -1.4400   -1.3800    0.5408   -1.2640    0.9400
    2.5344    6.9120    7.5200   -2.5344    5.7600   -4.1400
   -5.5296  -14.3360  -19.2000    5.5296  -12.3120    8.6400
    5.5706    9.8304   18.4320   -4.5706   10.0224   -6.9120

Quintic polynomial coefficients:
    0.0030
   -0.0829
    0.8495
   -3.9810
    8.6859
   -7.1794

WHEN T=3
q= 0.0030          v= -0.0829          a= 0.8495

WHEN T=8
q= -3.9810          v= 8.6859          a= -7.1794>>
```

```
#include <ESP8266WiFi.h>

const char* ssid = "your_ssid";
const char* password = "your_password";
int array[] = {D1, D2, D3, D4, D5};

int var = 0;
WiFiServer server(80);

void setup()
{
  Serial.begin(115200);

  for (int i = 0; i < 5; i++)
  {
    pinMode(array[i], OUTPUT);
    digitalWrite(array[i], LOW);
  }

  WiFi.begin(ssid, password);
  while (WiFi.status() != WL_CONNECTED)
  {
    delay(100);
    Serial.print(".");
  }
  Serial.println();
  Serial.println(WiFi.localIP());
  server.begin();
}

void loop()
{
  WiFiClient client = server.available();
  if (!client)
  {
    return;
  }

  while (!client.available())
  {
    delay(10);
  }

  String str = client.readStringUntil('\r');
  Serial.println(str);
```

```
  client.flush();
  if (str.indexOf("/pattern1") != -1)
   {
    var = 1;
  }
   else if (str.indexOf("/pattern2") != -1)
   {
    var = 2;
  }
  else if (str.indexOf("/pattern3") != -1)
  {
    var = 3;
  }

  client.println("HTTP/1.1 200 OK");
  client.println("Content-Type: text/html");
  client.println();
  client.println("<!DOCTYPE HTML>");
  client.println("<html>");
  client.println("<h1>Wedding Lights Control</h1>");
  client.println("<button onclick=\"location.href='/pattern1'\">Pattern
1</button>");
  client.println("<button onclick=\"location.href='/pattern2'\">Pattern
2</button>");
  client.println("<button onclick=\"location.href='/pattern3'\">Pattern
3</button>");
  client.println("</html>");
  client.stop();

  switch (var)
   {
    case 1:
      pattern1();
      break;
    case 2:
      pattern2();
      break;
    case 3:
      pattern3();
      break;
  }
}

void pattern1()
{
```

```
  for (int i = 0; i < 5; i++)
  {
    digitalWrite(array[i], HIGH);
    delay(10);
    digitalWrite(array[i], LOW);
  }
}

void pattern2()
 {
  for (int i = 4; i >= 0; i--) {
    digitalWrite(array[i], HIGH);
    delay(10);
    digitalWrite(array[i], LOW);
  }
}

void pattern3()
 {
  for (int i = 0; i < 5; i++)
  {
    digitalWrite(array[i], HIGH);
  }
  delay(50);
  for (int i = 0; i < 5; i++)
  {
    digitalWrite(array[i], LOW);
  }
  delay(50);
}
```