

- Q6) a)** Define program summary graph. Draw program summary graph for given code: **[8]**

```
procedure f()
begin
    call g()
    call h()
End
procedure g()
begin
    call h()
    call i()
end
procedure h()
begin
end
procedure i()
begin
end
```

- b) What is inter-procedural optimization? Describe different kinds of inter-procedural optimizations. **[8]**

- Q7) a)** What are reasons for variable aliases? Explain variable aliases based on type and based on flow. **[8]**

- b) Explain incremental dataflow analysis. **[8]**

OR

- Q8) a)** Explain transformations using dataflow analysis using suitable examples. **[8]**

- b) What is reaching definitions? Write in and out definitions for reaching definitions. **[8]**

