

March-2017

B.Sc. Sem-VI – PHYSICS (P -4616)

PAPER -604 (Op-amp and programming in C)

Marks : 70

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- Que.1 [a] Why open – loop configuration of op-amp is not used in linear application? [7]
Explain non inverting close-loop configuration and obtain an equation for voltage gain.
- [b] Explain current to voltage converter. [7]
- OR
- Que.1 [a] What is inverting amplifier? Derive formula for voltage gain for close loop configuration. [7]
- [b] State different types of feedback circuits. Draw block diagram of feedback circuits. [7]
- Que.2 [a] Explain summing amplifier in inverting mode configuration. [7]
- [b] Explain summing amplifier in non inverting mode configuration. [7]
- OR
- Que.2 [a] What is called ideal op-amp? [7]
- [b] Draw necessary circuit to obtain output as the subtraction of two inputs. Also show derivation of it. [7]
- Que.3 [a] What is called op – Amp? Draw ideal voltage transfer curve. What is the slope of the curve? [7]
- [b] Explain Integrator [7]
- OR
- Que.3 [a] Explain the term (i) Supply voltage rejection ratio [14]
(ii) Input offset voltage.
(iii) slew rate
- Que.4 [a] Explain basic computer model with block diagram. [7]

[b] Write a flow chart to find the average height of boys and girls and total boys and girls. [7]

OR

Que.4 [a] Write a program to print the following pattern using nested loops :

```
Δ
Δ Δ
Δ Δ Δ
Δ Δ Δ Δ
```

[7]

[b] Write a program in C to convert Celsius scale to Fahrenheit and Fahrenheit to Celsius scale of temperature. [7]

Que.5 [a] What is loop in 'C' language? State different types of loops. Explain one of the loop with example. [7]

[b] Write a program in 'c' to find volume of a cube of side 'a' [7]

OR

Que.5 [a] What is the final value of 'b' in the following sequence of statements? [7]

```
float b ;
int i ;
b = 1.56
b= (b + 0.05 ) * 10;
i = b ;
b = i ;
b = b/10.0 ;
```

If b = 1.56 is replaced by b = 1.54, What is the final value of b?

[b] Draw a flow chart to find largest number from a set of N numbers. [7]
