

B.Sc. Sem-VI – PHYSICS (P -4616) – Oct-2015

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 inverting close-loop configuration and obtain an equation for voltage gain.
- [b] State different types of feedback circuits for Op-Amp. Draw block diagram of feedback circuits.. [7]
- OR
- Que.1 [a] What is non inverting amplifier? Derive formula for voltage gain for close loop configuration. [7]
- [b] Explain voltage to current converter [7]
- Que.2 [a] What is called ideal op-amp? [7]
- [b] Design a circuit to obtain $V_o = V_a + V_b + V_c$ in non inverting configuration [7]
- OR
- Que.2 [a] Explain summing amplifier in inverting mode configuration. [7]
- [b] Design a circuit for inverting mode configuration so that out will be 2.5V (peak to Peak) for the input of 25mV(peak to peak). Draw circuit and also draw input and out put waveform. Input frequency is 100Hz. [7]
- Que.3 [a] What is called op – Amp? Draw ideal voltage transfer curve. What is the slope of the curve? [7]
- [b] Explain differentiator [7]
- OR
- Que.3 [a] Explain the term (i) Common Mode rejection ratio [14]
(ii) Input offset voltage.
(iii) slew rate
- Que.4 [a] write a note on ROM [7]

[b] Write a flow chart to find the smallest number from a set of numbers [7]

OR

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

```
*  
* *  
* * *  
* * * *
```

[7]

[b] Write a program in C to convert pound to kilogram and vice-versa. [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 surface area of a sphere of radius R [7]

OR

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

```
int i ;  
float b ;  
b = 5.76  
b = (b + 0.05 ) * 10;  
i = b ;  
b = i ;  
b = b/10.0 ;
```

If b = 5.76 is replaced by b = 5.74, What is the final value of b?

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