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SUBJECT CODE NO:- B-2149
FACULTY OF SCIENCE & TECHNOLOGY
B.Sc. S. Y. (Sem-III)
Examination November/December-2022
Electronics Paper-VII
Linear Integrated Circuits

[Time: 1:30 Hours] **[Max. Marks:50]**

"Please check whether you have got the right question paper."

N.B.
1. Attempt all question.
2. Illustrate your answer with suitable labeled diagram.

Q.1 Draw the block diagram of timer IC 555 and explain the function of each block. 20

OR

Draw a neat circuit diagram of As table multivibrator using timer IC 555 and explain its working.

Q.2 Draw a neat circuit diagram of non - inverting amplifier explain its working and show that $A_\nu = \frac{R_F}{R_1} + 1$ 20

OR

Write short notes on any four of the following (5 marks each)
a) Wein bridge Oscillator
b) Unit gain Amplifier
c) OPAMP inverting Amplifier
d) Open loop Op Amp configuration
e) Input - bias - current and input - offset - voltage
f) Barkhausen Criterion of Oscillator

Q.3 Attempt the following multiple choice question. 10

1) In the differential amplifier circuit which of the following terminals are connected together
   a) Bases
   b) Emitters
   c) Collectors
   d) Base and Collector

2) In integrator Op-Amp circuit uses _____ in feedback path.
   a) Resistance
   b) Inductance
   c) Capacitor
   d) Relay

3) Op-Amp integrator converts sine wave into
   a) Square wave
   b) Triangular wave
   c) Sine wave
   d) Saw tooth wave

4) A Voltage Summing Amplifier has
   a) Many inputs and many outputs
   b) One input several outputs
   c) Several input one output
   d) One input one output

5) The period of square wave is 2 ms and pulse width is 1 ms, then duty cycle is
   a) 25 %
   b) 100 %
   c) 75 %
   d) 50 %

6) In which of the following is an Op-Amp used
   a) Oscillator
   b) Filter
   c) Instrumentation
   d) All the above

7) Pulse stretching, time delay and pulse generation are done by
   a) As table Multivibrator
   b) Monostable Multivibrator
   c) Bistable Multivibrator
   d) Both (a) and (b)

8) What is Pin - 4 of IC 555
   a) Trigger
   b) Reset
   c) Threshold
   d) Output

9) For a non - inverting Op-Amp if $R_F = 50\ K\Omega$, $R_1 = 100\Omega$, then $A_{\mathcal{V}}$ = _____.
   a) 500
   b) 501
   c) 502
   d) 499

10) Condition for sustaintion of phase shift Oscillator is

a) $\frac{R_F}{R} = 29$

b) $\frac{R_F}{R} = \frac{1}{19}$

c) $\frac{R_F}{R} = 3$

d) $\frac{R_F}{R} = \frac{1}{3}$