

**DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/  
MANAGEMENT/COMMERCIAL PRACTICE, NOVEMBER – 2023**

**ELECTRONIC CIRCUITS**

[Maximum Marks: 75]

[Time: 3 Hours]

**PART-A**

**I. Answer *all* the following questions in one word or one sentence. Each question carries ‘one’ mark.**

**(9 x 1 = 9 Marks)**

		Module Outcome	Cognitive level
1.	Define the operating point of a transistor.	M1.01	R
2.	Write the expression for current gain of single stage CE amplifier.	M1.02	R
3.	Define quality factor of tuned amplifier.	M2.01	R
4.	What is the efficiency of Class AB push pull amplifier?	M2.04	R
5.	Write the expression for gain of feedback amplifier.	M3.01	R
6.	What is the frequency of oscillation of RC phase shift oscillator?	M3.04	R
7.	List any two applications of oscillator circuit.	M3.05	R
8.	Write the frequency of oscillation of astable multivibrator.	M4.02	R
9.	Bistable multivibrator has..... stable states.	M4.03	R

**PART-B**

**II. Answer any *eight* questions from the following. Each question carries ‘three’ marks.**

**(8 x 3 = 24 Marks)**

		Module Outcome	Cognitive level
1.	Draw the frequency response of RC coupled amplifier.	M1.05	R
2.	Explain features of the emitter follower.	M1.03	U
3.	Explain fixed bias circuit.	M1.01	U
4.	A series resonant circuit is tuned to 10 MHz and has a bandwidth of 100KHz. Find the Q factor of the circuit.	M2.01	A
5.	Draw the circuit of transformer coupled amplifier.	M1.04	R
6.	Define LTP and UTP of Schmitt trigger circuit.	M4.04	R
7.	Explain the working of crystal oscillator	M3.04	U
8.	Explain how the transistor works as a switch.	M4.01	U
9.	Draw the waveforms of UJT.	M4.05	R
10.	Draw the circuit of monostable multivibrators.	M4.03	R

**PART-C**

**Answer all questions from the following. Each question carries 'seven' marks.**

**(6 x 7 = 42 Marks)**

		<small>Module Outcome</small>	<small>Cognitive level</small>
III.	Explain voltage divider biasing with neat diagrams.	M1.02	U
	<b>OR</b>		
IV.	Compare RC coupling, direct coupling and transformer coupling methods in amplifiers.	M1.04	U
V.	Explain class C power amplifier with neat circuit diagram and draw its waveforms.	M2.04	U
	<b>OR</b>		
VI.	For the parallel resonant circuit with $c=150\text{pF}$ , $L= 100\mu\text{H}$ and $R= 10\Omega$ , find the value of the resonant frequency.	M2.01	A
VII.	With a neat circuit diagram, explain the working of class B push pull power amplifier.	M2.03	U
	<b>OR</b>		
VIII.	With the help of a circuit diagram, explain the working of a single tuned amplifier.	M2.01	U
IX.	Explain the principle of operation of colpitts oscillators.	M3.04	U
	<b>OR</b>		
X.	Draw the block diagram of voltage series and voltage shunt feedback amplifiers.	M3.03	R
XI.	Compare positive and negative feedback.	M3.01	R
	<b>OR</b>		
XII.	With neat diagram explain wien bridge oscillator.	M3.04	U
XIII.	Explain the working of astable multivibrator with circuit diagram.	M4.02	U
	<b>OR</b>		
XIV.	With circuit diagram and waveforms, explain the working of schmitt trigger.	M4.04	U

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