DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/ MANAGEMENT/COMMERCIAL PRACTICE, NOVEMBER – 2022

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.	Which are the regions of operation of transistor?	M1.01	R
2.	The phase difference between the output and input voltages of a CE amplifier is……………	M1.02	R
3.	At series or parallel resonance, the circuit behaves as a ………load.	M2.01	R
4.	What is the efficiency of Class A power amplifier.	M2.04	R
5.	State Barkhausen criterion for oscillation.	M3.04	R
6.	Write any two advantages of negative feedback.	M3.02	R
7.	Give the expression for frequency of oscillation of weinbridge shift oscillator.	M3.04	R
8.	In which region a transistor acts as an open switch?	M4.01	R
9.	Monostable multivibrator has ……..stable state.	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.	Give the circuit diagram of voltage divider bias.	M1.01	U
2.	Draw the circuit of emitter follower.	M1.03	R
3.	Draw direct coupling circuit diagram.	M1.04	R
4.	Find the resonant frequency of a parallel resonant circuit formed by a 150mH inductor and a 40μF capacitor.	M2.01	A
5.	Explain operating point with necessary figures.	M1.01	U
6.	List the types of negative feedback.	M3.03	R
7.	Write any 3 applications of UJT.	M4.05	R
8.	Draw the circuit diagram of bistable multivibrator.	M4.03	R
9.	Write the applications of Schmitt trigger.	M4.04	R
10.	List the applications of astable multivibrators.	M4.02	R

PART-C

Answer all questions. Each question carries *'seven'* marks.

(6 x 7 = 42 Marks)

Module Outcome   Cognitive level

		Module Outcome	Cognitive level
III.	Draw the circuit diagram of single state CE amplifier and write the expressions for voltage gain and current gain.	M1.02	R
	OR		
IV.	Draw the circuit diagram of transformer coupled amplifier and explain its working.	M1.04	U
V.	Compare voltage and power amplifiers.	M2.03	U
	OR		
VI	Find the Q factor of a series circuit having values L=2H. C=32μF and R=10Ω.	M2.01	A
VII.	With a neat circuit diagram, explain the working of class AB power amplifier.	M2.03	U
	OR		
VIII.	Compare class A,B,C and AB.	M2.04	U
IX.	Draw and explain the block diagram of feedback amplifier.	M3.01	U
	OR		
X.	Draw the circuit and explain RC phase shift oscillator.	M3.04	U
XI.	Explain the principle of crystal oscillator with diagram.	M3.04	U
	OR		
XII.	With neat diagram explain Hartley oscillator.	M3.04	U
XIII.	Explain the working of monostable multivibrator with circuit diagram.	M4.03	U
	OR		
XIV.	With circuit diagram, explain the working of UJT relaxation Oscillator.	M4.05	U

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