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Total Pages : 2

## 752104

## Mar. 2022

## M.Sc. (Phy) I SEMESTER Electronic Devices and Integrated Circuits (MPH-104)

Time : 90 Minutes]

[Max. Marks : 25



Instructions :

- 1. It is compulsory to answer all the questions (1 mark each) of Part-A in short.
- 2. Answer any three questions from Part-B in detail.
- 3. Different sub-parts of a question are to be attempted adjacent to each other.

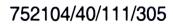
## PART-A

1.	(a)	Write two	advantages and	limitations of	of ICs.	(1)
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- (b) What are the linear and digital ICs? (1)
- (c) In common base connection  $I_c = 0.96$  milliampere and base current is 0.05 milliampere. What is the value of alpha? (1)



- (d) Compare JFET and BJT four point. (1)
- (e) Define break down and saturation region. (1)
- (f) Define power supply rejection ratio and input offset current. (1)
- (g) Convert  $(2047)_{10}$  to hexadecimal number. (1)



[P.T.O.

		memory chip.				
			(1)			
	(i)	A ripple counters are also called	(1)			
	(j)	alculate the number of select line required in 1-to-4				
		demultiplexer.	(1)			
		PART-B				
2.	(a)	How you fabricate an NPN transistor?	(3)			
	(b)	Explain photolithographic process.	(2)			
3.	(a)	Explain how OP-AMP is used as difference amplif	ier.			
	(b)	Explain the functional block diagram of IC-555 tin	(2)			
		and angruin of re-555 th	(3)			
4.	Wri	te short notes on multiplexer and demultiplexer.	(5)			
5.	(a)	Draw the equivalent circuit of a MOSFET operat	ing			
		in enhancement mode.				
	(b)	Explain characteristic curves of JEFT.	(2)			
6.	(a)	Draw and explain working of Master-slave	JK			
	<i>(</i> <b>L</b> )	- •	(2)			
	(D)	what is shift register? What are the differe				
		configuration of shift registers?	(3)			
5.	(a) (b)	Draw the equivalent circuit of a MOSFET operation in enhancement mode. Explain characteristic curves of JEFT. Draw and explain working of Master-slave flip-flop.	ing (3) (2) JK (2) rent			

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