CODE No.: 19BT1BS03 SVEC-19

SREE VIDYANIKETHAN ENGINEERING COLLEGE

(An Autonomous Institution, Affiliated to JNTUA, Ananthapuramu)

I B.Tech II Semester (SVEC-19) Regular Examinations, December 2020

ENGINEERING PHYSICS

[Computer Science and Engineering, Information Technology, Computer Science and Systems Engineering]

Time: 3 hours **Max. Marks: 60**

Answer One Question from each Unit
All questions carry equal marks

		UNIT-I				
1.	a)	Explain the concept of interference in thin films due to reflected light.	8 Marks	L2	CO1	PO2
	b)	List out some engineering applications of diffraction and polarization.	4 Marks	L1	CO1	PO1
		(OR)				
2.	a)	The diameter of the tenth bright ring in a Newton's rings apparatus changes from 1.5 cm to 1.3 cm when a liquid is introduced between the lens and the plate. Find the refractive index of the liquid.	4 Marks	L1	CO1	PO1
	b)	Explain the concept of polarization by reflection and refraction.	8 Marks	L2	CO1	PO2
		UNIT-II				
3.	a)	How an electromagnetic wave does propagate in conducting and non-conducting media?	8 Marks	L2	CO2	PO2
	b)	Explain the significance of gradient and curl.	4 Marks	L2	CO2	PO1
		(OR)				
4.	a)	Derive expressions for the numerical aperture and the fractional index change of an optical fiber.	8 Marks	L2	CO2	PO2
	b)	List out the applications of optical fibers.	4 Marks	L1	CO2	PO1
		UNIT-III				
5.	a)	Derive an expression for density of electrons in n-type semiconductors.	6 Marks	L3	CO3	PO2
	b)	State Hall effect and obtain an expression for the Hall coefficient.	6 Marks	L4	CO3	PO1
		(OR)				
6.	a)	Explain the concept of PN junction diode.	6 Marks	L2	CO3	PO1
	b)	Discuss the working of photodiode.	6 Marks	L2	CO3	PO2
		UNIT-IV				
7.	a)	Elaborate the concept of frequency dependence of polarization.	8 Marks	L3	CO4	PO2
	b)	What are internal fields?	4 Marks	L1	CO4	PO1
		(OR)				
8.	a)	Distinguish between soft and hard magnetic materials.	6 Marks	L3	CO4	PO2
	b)	Explain the classification of magnetic materials.	6 Marks	L2	CO4	PO1
		UNIT-V				
9.	a)	How superconductors are different from other materials?	6 Marks	L3	CO5	PO1
	b)	Write a note on Josephson effect.	6 Marks	L2	CO5	PO2
		(OR)				
10	a)	What are nanomaterials and how they are useful to us?	6 Marks	L2	CO5	PO2
·	b)	List out some properties of nanomaterials.	6 Marks	L1	CO5	PO1