Sanjay Ghodawat University, Kolhapur

2020-21

Established as State Private University under Govt. of Maharashtra. Act No XL, 2017

EXM/P/09/00

Year and Program:2020-21 B. Tech	**School of Technology**	**Department: F. Y. B. Tech**
Course Code: FYT102	**Course Title: Applied Physics**	**Semester: I**
Day and Date: 17.08.2021	**End Semester Examination**	**Time: 2Hrs. Max Marks:50**

Instructions: 1) All Questions are compulsory.
2) Use of Non-programmable calculator is allowed.

		Marks	Bloom's Level	CO
Q.1	**Answer/Solve the following (any Two)**			
a)	Explain piezo-electric effect. Describe how piezo-electric effect can be used for generating ultrasonic waves.	8	L1	CO1
b)	Explain Laurent half shade polarimeter.	8	L3	CO2
c)	i.] Calculate the thickness of quartz plate which is used to produce ultrasonic waves of 2MHz. Density of quartz is 2.65 X 10^3 kg/m^3 and Young modulus is 8 X 10^{10} N/m^2.	4	L4	CO1 ,2
	ii] A tube of length of 15 cm containing suger solution having specific rotation of 66^0 which shows optical rotation of 7^0 calculate strength of sugar solution.	4		
Q.2	**Answer/Solve the following (any two)**			
a)	What is principle, structure and classification of optical fibre?	8	L2	CO3
b)	Show that the de-Broglie wavelength of charged particle is inversely proportional to square root of the accelerating potential.	8	L3	CO4
c)	i] Numerical aperture of fiber is 0.5 and core RI is 1.48. Find cladding RI and acceptance angle.	4	L3	CO3 ,4
	ii] Write short note on Compton effect.	4		
Q.3	**Answer/Solve the following (any two)**			
a)	Explain Hysteresis curve and classify magnetic material on the basis of Hysteresis curve.	9	L2	CO5
b)	Define atomic packing factor (APF). Find APF for SC,BCC and FCC.	9	L1	CO6
c)	i] Define diamagnetic, paramagnetic and ferromagnetic materials.	3	L1	CO5 ,6
	ii] Find miller Indices of planes having intercept 3a; 2b; ∞c and 2a; ∞b ;c.	6		

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