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: UG, B.Sc II	**School of Science**	**Department: Physics**
Course Code: PHS201	**Course Title: PhysicsIII**	**Semester : III**
Day : Monday **Date: 14.12.2020**	**End Semester Examination**	**Time:2 Hrs.** **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 the following (Any Two)**–			
a)	i) What are thermodynamic processes? Explain with example.	4	L2	CO1
	ii) Write short note on specific heats at constant volume and pressure.	4		
b)	Derive relation for the work done during isothermal process. Write the relation in terms of volume as well as separate relation in terms of pressure.	8	L3	CO1
c)	Obtain Maxwell's thermodynamic relations from thermodynamic potentials.	8	L3	CO2
Q.2	**Answer the following (Any two)** –			
a)	i) State 2nd law of thermodynamics with proper examples.	4	L2	CO2
	ii) Why efficiency of heat engine cannot be 100%?	4		
b)	i) Write postulates of kinetic theory of gases.	4	L2	CO3
	ii) Define mean free path and sphere of influence.	4		
c)	Derive the equation for co-efficient of diffusion during transport of gases.	8	L4	CO3
Q.3	**Answer the following (Any two)** –			
a)	Derive Fermi-Dirac distribution law for independent and indistinguishable particles.	9	L3	CO4
b)	State Wein's displacement law. Obtain Wein's displacement law relation from the Plank's law of radiation.	9	L3	CO4

c)	State first law of thermodynamics. Derive equation that states the law.	9	L2	CO1

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