Sanjay Ghodawat University, Kolhapur

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

2020-21
EXM/P/09/00

Department of Physics

SY M Sc | **School of Science**
PHS 655R1
Day: Monday
Date: 21.12.2020 | **Solar Astronomy** | **Semester: III**

Examination: ESE | **Max Marks: 50**

Instructions for Students: 1) Use of non-programmable calculator is allowed
2) All questions are compulsory
3) Figures to the right indicate full marks.

			Marks	BL	CO
Q.1		**Answer the following questions (Any Two)**			
	a)	Illustrate the stellar spectra using Balmer series of Hydrogen spectra and classify the star on the basis of stellar spectra.	08	L5	CO1
	b)	i) Derive the relation between magnitude and intensity in stellar astronomy. ii) Discuss the brightness of star in stellar astronomy.	08	L3	CO1
	c)	Explain the process of formation of protostar and its place on the H-R diagram.	08	L2	CO2
Q.2		**Answer the following questions (Any Two)**	**Marks**	**BL**	**CO**
	a)	i) Describe the reaction mechanism of carbon, nitrogen oxygen cycle for the generation of stellar energy. ii) Explain the steps involved in fusion of hydrogen into helium using the proton-proton chain reaction.	08	L3	CO2
	b)	Distinguish between photosphere, chromosphere and corona of the sun.	08	L4	CO3
	c)	Define the sunspot and explain the sunspot cycle in detail.	08	L1	CO3
Q.3		**Answer the following questions (Any Two)**	**Marks**	**BL**	**CO**

a)	Explain the orbital characteristics, physical properties and atmosphere of the Jupiter.	09	L2	CO4
b)	Illustrate the reason for the observation of rings on the Saturn with the help of its atmosphere.	09	L3	CO4
c)	i) Explain luminosity classification of star. ii) Plot the graph of luminosity versus temperature of star and elaborate it based on stellar mass.	09	L2	CO1