Sanjay Ghodawat University, Kolhapur

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2020-21

EXM/P/09/00

Year and Program: 2020-21	School of Technology	Department: F.Y.B.Tech.
Course Code: FYT103R1	Course Title: Applied Chemistry	Semester :I
Day and Date:	End Semester Examination	Time:2 Hrs. Max Marks:50

Instructions: 1) All Questions are compulsory.

2) Assume suitable data wherever necessary.

3) Figures to the right indicate full marks.

			Marks	Bloom's Level	CO
Q.1		**Answer/Solve the following.**			
a)		A sample of water on analysis was found to contain the following impurities;$Ca(HCO_3)_2$ = 25 ppm, $CaSO_4$ = 32 ppm, $CaCl_2$ = 23 ppm, and $Mg(HCO_3)_2$ = 35 ppm Calculate temporary, permanent, and total hardness of water sample in mg per liter.	8	L3	CO1
b)		Define electrochemical corrosion. Explain with the neat labeled diagram of hydrogen evolution mechanism.	8	L2	CO2
		OR			
c)	i)	With neat labeled diagram, describe Ion exchangemethod for treatment of hard water.	4	L2	CO1
	ii)	Describe the Galvanizing process.	4	L2	CO2
Q.2		**Answer/Solve the following.**			
a)		What are minerals and ore? Explain the froth floatation process with the help of suitable example used for concentration of ore.	8	L2	CO3
b)		Explain percent composition and manufacturing of Portland Cement.	8	L2	CO4
		OR			
c)	i)	Write composition, properties, and application ofnichrome alloy.	4	L2	CO3
	ii)	Compare the Thermoplastic and Thermosetting plastics with suitable	4	L2	CO4

example.

Q.3 Answer/Solve the following.

a)		The following observations were recorded when fuel sample burned into Bomb calorimeter experiment. Weight of fuel sample = 0.95 g Mass of water in calorimeter = 2.9 kg Water equivalent of calorimeter =360 g Correction due to sulphuric acid = 27.2 cal. Observed rise in temperature = 5.3^0C Cooling correction = 0.06^0C Fuse wire correction = 32.0 cal. Calculate the higher and lower calorific value, if the fuel contains 5.4%hydrogen.	9	L3	CO5
b)		Explain in details how glass electrode is used to determine pH of a solution. **OR**	9	L2	CO6
c)	i)	Write any five characteristics of good fuel.	5	L2	CO5
	ii)	State and derive an equation for Lambert's law.	4	L2	CO6

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