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2603N1728

Candidate's Seat No :_____

M.Sc. Semester-3 Examination

504

Chemistry (P)

Time : 2-30 Hours] **March-2024** **[Max. Marks : 70**

Answer the following:

Que.1 (A) Explain the mechanism of Phase transfer catalysis. Explain the factors affecting enzyme catalyzed reactions. 07

OR

(A) Explain briefly binding of Oxygen to Myoglobin and Hemoglobin. 07

(B) Derive Michaelis-Menten's equation for enzyme catalysed reaction. 07

OR

(B) Discuss in brief the types of Phase Transfer Catalyst and the importance of Phase Transfer Catalysis giving examples? 07

Que.2 (A) Explain how the enzyme are useful in Natural gas conversation. 07

OR

(A) Explain the applications of enzymes in food and flavors industries. 07

(B) Explain in brief the applications of enzymes in Beverage and Aromas industries. 07

OR

(B) Explain in brief the applications of Enzymes in Pharmaceuticals. 07

Que.3 (A) Explain briefly the various types of nanostructures. Explain briefly the preparation and use of nanoparticles. 07

OR

(A) Explain how the nanogold particles are synthesized? Give some applications of nanogold particles. 07

(B) Explain in brief, the method of preparation of carbon nanowires. Give some applications of Carbon nanowires. 07

OR

(B) Describe the structure and applications of nanotubes and nanofilms. 07

Que.4 (A) Explain the working principle of Scanning Electron Microscope. How it is used in the characterization of nano materials? 07

OR

(A) Explain the working principle of X-ray diffraction technique. How it is used in the characterization of nano materials? 07

(B) Explain the working principle of transmission electron microscope. How it is useful to characterize nano materials? 07

OR

(B) Explain the principle of Atomic force microscope. How it is used in the characterization of nano materials? 07

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Que.5		**Answer the following:** (any **seven** two marks each)	14
	(i)	Name the various techniques used to characterize the nano materials.	
	(ii)	Which enzymes are used for modification of color appearance of food and beverage industries?	
	(iii)	What is the fundamental requirement for a substance to function as PTC?	
	(iv)	Give any two characteristics of enzyme catalysis.	
	(v)	Explain briefly the use of nanoparticles as catalyst.	
	(vi)	What factors affect the synthesis of Nano particles?	
	(vii)	What are the advantages of Scanning electron microscope?	
	(viii)	Name the enzymes used for aroma generation in food industries.	
	(ix)	Explain briefly about nanoscience.	