Sanjay Ghodawat University, Kolhapur

2018-19

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

2019 SYMSC	**School of Science**	**Department of Chemistry**
CHS 606	**Natural products & Dye Intermediates**	**Semester – Even (IV)**
Saturday, 25-05-2019	**End Semester Examination**	**Time: 3 hrs, Max Marks: 100**
PRN:	**Seat No:**	**Section A Marks out of 20:**
Junior Supervisor Signature	**Student Signature**	2.30 to 3.00 pm

Saturday

Section A

Instructions: 1) All Questions are compulsory.
2) For MCQs mark/tic (√) for correct answer. No marks for multiple tics (√).
3) Section A should submitted to Jr Supervisor immediately after first ½ hour.

	Q.1 Multiple choice questions.	**Marks 20**	**level**	**CO**
1	α-Biotin contains --------- chiral centers. a) 3 b) 4 c) 5 d) 6		L1	1
2	Beri-Beri is a disease caused by ---------- a) Vitamin C b) Vitamin B1 c) Vitamin E d) Vitamin K		L2	1
3	The vitamin having fluorescent property in aqueous medium is ---------- a) Vitamin B1 b) Vitamin B2 c) Vitamin B6 d) Folic acid		L1	1
4	The generic steroid structure has ------- stereoisomers. a) 6 b) 28 c) 128 d) 46		L1	2
5	Steroids can be recognized by their tetracyclic skeleton consisting of – a) Three fused six-membered and one-five-membered ring b) Two fused six-membered and one-five-membered ring c) One fused six-membered and three five-membered ring d) Three fused six-membered and one seven-membered ring		L2	2
6	Which of the following steroid regulates salt metabolism, stimulates kidneys to retain sodium and excrete potassium ? a) Testosterone b) Progesterone c) Androgen d) Aldosterone		L3	2
7	A method of writing structural formula of carbohydrates to represent monosaccharide's cyclic structure with a simple 3D perspective is known as – a) Haworth projection b) Structural formula c) Empirical formula d) Simple formula		L2	3

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8	Which of the following is true for the hydrolysis of carbohydrates? a) Carbohydrates cannot be hydrolyzed b) Hydrolysis of carbohydrates can only yield polyhydroxy aldehydes c) Hydrolysis of carbohydrates can only yield polyhydroxy ketones d) Hydrolysis of carbohydrates can yield polyhydroxy aldehydes and/or polyhydroxy ketones	L1	3
9	An oligosaccharide is a saccharide polymer containing -------- units of monosaccharides (simple sugars). a) 3 to 6 b) 2 to 10 c) 10 to 20 d) more than 5	L2	3
10	The cyclic structures of monosaccharides are --------- a) acetals b) aldeydes c) ethers d) esters	L1	3
11	When glucose adopts a pyranose structure which carbon is the anomeric carbon? a) C-1 b) C-2 c) C-5 d) C-6	L2	3
12	The bonds in the polysaccharide can be described as: a) $\alpha(1\rightarrow4)$ glycosidic bonds b) $\beta(1\rightarrow6)$ glycosidic bond c) $\alpha(1\rightarrow6)$ glycosidic bond d) $\beta(1\rightarrow4)$ glycosidic bond	L2	3
13	Sucrose is a – a) Monosaccharide b) Disaccharide c) Polysaccharide d) Triose	L1	3
14	Phthaleine dyes prepared by condensing phthalic anhydride with- a) Phenols in presence of dehydrating agents b) Amines in presence of dehydrating agents c) Naphthols in presence of dehydrating agents d) Both a and b	L1	4
15	The groups which leads to the deepening color of organic substance called: a) Chromophores b) Auxochromes c) Oxidized groups d) Both a and b	L1	4
16	Cyanine dyes are used essentially in: a) Plastic industry b) Photographic industry c) Detergents industry d) All of these	L2	4

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17	Alizarin dye is classified as:		L2	4
	a) Anthraquinone dye	b) Diarylmethane dye		
	c) Nitro and/or nitroso dyes	d) Both a and b		
18	The color intensity of cyanine dyes is related to:		L2	4
	a) Inductive effect	b) Mesomeric effect		
	c) Hyperconjugative effect	d) None of these		
19	Methyl orange dye gives two mesomeric structures in:		L1	4
	a) Basic media	b) Acidic media		
	c) Neutral media	d) All of these		
20	The structure of azo-dyes is readily found by:		L2	4
	a) Oxidation	b) Reduction		
	c) Substitution	d) Both a and c		

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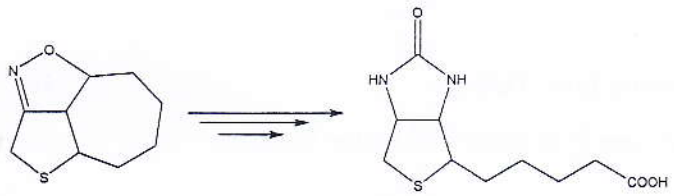
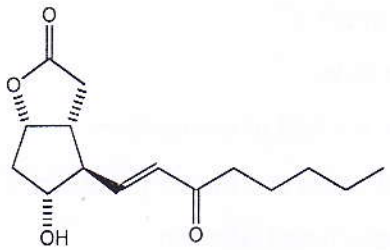
Section B

		Marks	level	CO
Q.2	**Attempt the following (any Two)**	**12**		
a)	What is Riboflavin? Give the synthesis of Vitamin B2.		L2	1
b)	Write the structure of β-Biotin. Complete the following reaction with suitable reagents, reaction conditions.		L4	1



c)	Give the biological functions of Vitamin B9.		L3	1
Q.3	**Attempt the following (any Two)**	**12**		
a)	Give the E. J. Corey's total synthesis of PGE2 starting with following.		L3	2



b)	Describe steroid hormones with its types, structures and functions.		L2	2

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	c)	How would you establish that hydroxyl group and double bond in cholesterol exist in different rings?		L5	2
Q.4	**a)**	**Attempt the following (any Two)**	**12**		
	i)	Explain Configurational assignments of monosaccharides with suitable examples.		L2	3
	ii)	What are oligosaccharides? Explain Fischer-Killani synthesis and Ruff degradation.		L3	3
	iii)	Discuss in detail amylose and amylopectin polysaccharides.		L2	3
	b)	**Write a short note on (any Four)**	**16**		
	i)	Cellulose and hemicellulose		L2	3
	ii)	Reactions of Sugars		L2	3
	iii)	Glycogen and Inulin		L1	3
	iv)	Cephalosporin antibiotics		L1	3
	v)	Sugars as raw material		L1	3
Q.5	**a)**	**Attempt the following (any Two)**	**16**		
	i)	What is a dye? How are dyes classified on the basis of structure?		L1	4
	ii)	Discuss the theories of color and constitution.		L2	4
	iii)	Describe synthesis of following Azo dyes. a) Congo red b) Methyl orange c) Bismark brown		L2	4
	b)	**Write a short note on (any Three)**	**12**		
	i)	Optical brightners and reactive dyes		L2	4
	ii)	Classification of dyes based on method of application		L2	4
	iii)	Preparation and uses of Crystal violet and Phenolphthalein		L1	4
	iv)	Preparation and uses of Fluorescein and Alizarin		L1	4

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