22MBU205N / 22MBU205

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION MAY 2024
(Second Semester)

Branch - MICROBIOLOGY

MICROBIAL DIVERSITY AND TAXONOMY

Time: Three Hours Maximum: 75 Marks

SECTION-A (10 Marks)

Answer **ALL** questions

ALL questions carry **EQUAL** marks (10 × 1 = 10)

Module No.	Question No.	Question	K Level	CO
1	1	The basic taxonomic group in microbial taxonomy is *a)* Family b) Genus c) Species d) Order	*K1*	CO1
	2	Biochemical tests are used to determine a) Aminoacid sequence b) Nucleic acid sequence c) Enzymatic reactions d) Staining characteristics	K2	CO1
2	3	Where are bacteriochlorophyll present in the cell? a) chloroplast b) cytoplasm c) mesosoma d) membrane	K1	CO2
	4	Heterocyst in Anabaena participates in a) Fragmentation b) Resting stage c) N_2 fixation d) Floating	K2	CO2
3	5	What is the primary mode of reproduction in bacteria ? a) Budding b) Cojugation c) Sporulation d) Binary fission	K1	CO3
	6	For what purpose do mycoplasma use sterols ? a) growth b) reproduction c) membrane fluidity d) cytoplasm	K2	CO3
4	7	An extremotolerant organsim is a) not found on earth b) adapted to extreme conditions c) adapted to moderate conditions and can live in extreme onditions d) adapted to moderate conditions only	K1	CO4
	8	Which of the following that thrive at high temperatures ? *a) Chromohalobacte b) Pyrolobus fumarii* *c) Tetragenococcus d) Pyrodictium*	K2	CO4
5	9	Which of the following is an example of RNA virus ? a) SV40 b) T4 Phage c) TMV d) Adenovirus	K1	CO5
	10	Which of the following is a DNA containing plant virus ? a) Bean mosaic virus b) Adenovirus c) Cauliflower mosaic virus d) Tobacco necrosis virus	K2	CO5

Cont...

SECTION - B (35 Marks)

Answer **ALL** questions

ALL questions carry **EQUAL** Marks (5 × 7 = 35)

Module No.	Question No.	Question	K Level	CO
1	11.a.	Name the five kingdoms and give the main distinguishing characteristics of each kingdom.	K2	CO1
		(OR)		
	11.b.	What is numerical taxonomy ? Give short notes on species concept and binomial nomenclature rules.		
2	12.a.	Elucidate the characteristic features and mechanism of photosynthesis in oxygenic photosynthetic bacteria.	K3	CO2
		(OR)		
	12.b.	With a neat diagram , describe the structure and functions of heterocyst.		
3	13.a.	Give a brief note on the characteristics features and classification of Spirochaetes.	K3	CO3
		(OR)		
	13.b.	What are Chlamydiae ? Bring out and explain the general characters and developmental cycle of Chlamydiae.		
4	14.a.	State the important characters ,adaptive mechanism and applications of thermophilic archaea.	K4	CO4
		(OR)		
	14.b.	Explain the characteristics of methanogens and methanogenesis.		
5	15.a.	What are plant viruses ? How plant viruses are classified ?	K4	CO5
		(OR)		
	15.b.	Write in detail viral genome and enzymes.		

SECTION -C (30 Marks)

Answer **ANY THREE** questions

ALL questions carry **EQUAL** Marks (3 × 10 = 30)

Module No.	Question No.	Question	K Level	CO
1	16	What are the characters used in microbial taxonomy? Give a brief on molecular characteristics used in microbial taxonomy.	K4	CO1
2	17	Brief an account on structure, classification and economic importance of cyanobacteria.	K4	CO2
3	18	Define endospore. Bring out the structure of endospore and structural changes during sporulation with neat diagram.	K5	CO3
4	19	What are halophiles? Describe the characteristics , adaptive mechanism and applications of halophiles.	K5	CO4
5	20	Elaborate the structure of a typical bacteriophage and its classification.	K4	CO5

Z-Z-Z END