

**PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)**

**MSc DEGREE EXAMINATION MAY 2025
(Fourth Semester)**

Branch – APPLIED MICROBIOLOGY

APPLIED BIOTECHNOLOGY, IPR & BIOETHICS

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	Recall the international agreement that led to the creation of the carbon credit system a) The Kyoto Protocol b) The Paris Agreement c) The Montreal Protocol d) The Rio Declaration	K1	CO1
	2	Which of the following GMOs has been developed to combat Vitamin A deficiency? a) Bt cotton b) Golden Rice c) Flavr Savr Tomato d) GM apples	K2	CO1
2	3	In Ti Plasmid, which genes are involved in opine metabolism a)ori b)vir c)trf A d)npt	K1	CO2
	4	Biolistic are also termed as -----technique a) Microprojectile bombardment b) Liposome fusion c) Electroporation d) Microinjection	K2	CO2
3	5	Dolly was the first mammal to be cloned from an adult cell, born in ----- a) 1995 b)1996 c)1997 d)1998	K1	CO3
	6	Which of the following is a pluripotent stem cell? a) Embryonic stem cells b) Hematopoietic stem cells c) Totipotent stem cells d) Unipotent stem cells	K2	CO3
4	7	Omit the one which does not come under Geographical indications a) Darjeeling Tea b) Swiss Watches c) Computer Software d) Roquefort Cheese	K1	CO4
	8	Books, Musical works, Paintings etc come under which category? a) Patent b) Copyright c) Trademarks d) Trade secrets	K2	CO4
5	9	Identify the gene used in Suicide gene therapy a) Restriction endonuclease b) Thymidine Kinase c) Cas9 d) DNA Polymerase	K1	CO5
	10	How many principles are there in the Nuremberg Code? a) 20 b) 30 c) 40 d)10	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.	Select the strategies for novel antibiotic discovery.	K3	CO1
	(OR)			
	11.b.	Build the steps involved in Growth hormone production.		
2	12. a.	Explain the common herbicides and their resistance mechanisms.	K5	CO2
	(OR)			
	12.b.	Assess the mode of action involved in Bt gene.		
3	13.a.	Build the steps in developing transgenic fish.	K6	CO3
	(OR)			
	13.b.	Elaborate the applications of microarrays.		
4	14.a.	Interpret the procedural steps in the Patenting.	K4	CO4
	(OR)			
	14.b.	Inspect the functions of the National Biodiversity Authority.		
5	15. a.	Evaluate the key international protocols for material exchange.	K5	CO5
	(OR)			
	15.b.	Explain the important functions of OSHA.		

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	Make use of the genetically engineered microbes for Xenobiotic degradation.	K4	CO1
2	17	Compare the different types of plant tissue culture. Add a note on its applications.	K5	CO2
3	18	Elaborate on the types of somatic cell therapy.	K6	CO3
4	19	Discover the different forms of IPR.	K4	CO4
5	20	Interpret the ethical concerns in prenatal diagnosis.	K5	CO5

Z-Z-Z

END