

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION DECEMBER 2024
(First Semester)

Branch - **BOTANY**

MICROBIOLOGY

Time: Three Hours

Maximum: 75 Marks

SECTION-A (10 Marks)

Answer **ALL** questions

ALL questions carry **EQUAL** marks

(10 × 1 = 10)

Module No.	Q. No.	Question	K Level	CO
1	1	What is microbiology? a. Study of molecules that are visible to human eyes b. Study of animals and their family c. Study of organisms that are not visible to naked eyes d. Study of microscope	K1	CO1
	2	Who is known as the father of medical microbiology? a. Koch c. Jenner b. Pasteur d. Tatum	K2	CO2
2	3	The term virus was coined by ----- a. Stanley c. Löffler b. Beijerinck d. Sclesinger	K1	CO1
	4	TMV particles contain----- a. DNA and Protein c. Both DNA and RNA b. RNA and Protein d. DNA only	K2	CO2
3	5	Bacteria which can survive in the absence of O ₂ are known as ----- a. Obligate anaerobes b. Facultative anaerobes c. Obligate anaerobes d. Facultative aerobes	K1	CO1
	6	Pili in bacteria are used for ----- a. Asexual reproduction b. Prey hunting c. Locomotion d. Sexual contact	K2	CO2
4	7	Cell wall of fungi is made up of ----- a. Lipid c. Protein b. Cellulose d. Chitin and hemicellulose	K1	CO1
	8	Yeast is used in the production of ----- a. Acetic acid c. Cheese b. Curd d. Ethyl Alcohol	K2	CO2
5	9	<i>Aspergillus</i> has ----- hyphae. a. Aseptate and uninucleate b. Septate and multinucleate c. Septate and uninucleate d. Septate and multinucleate	K1	CO1
	10	Lichen is symbiotic relationship between algae and ----- a. Mosses c. Bacteria b. Fungi d. Protozoa	K2	CO2

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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.	Find out the contributions of Anton Van Leeuwenhoek in the field of microbiology.	K1	CO1
	(OR)			
	11.b.	Tell about the types of culture medium.		
2	12.a.	Explain the general characteristics of viruses.	K2	CO2
	(OR)			
	12.b.	Summarize the reproduction of Bacteriophage.		
3	13.a.	Identify the characteristic features of Bacteria.	K3	CO3
	(OR)			
	13.b.	Experiment with any one type of sexual reproduction in bacteria.		
4	14.a.	Simplify the Alexopolous (1962) classification of fungi.	K4	CO4
	(OR)			
	14.b.	Analyze the structure of <i>Albugo</i> .		
5	15.a.	Explain the asexual reproduction of <i>Fuvarium</i> .	K5	CO5
	(OR)			
	15.b.	Determine the thallus organization of lichens.		

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	Classify the different types of sterilization.	K2	CO2
2	17	Organize the structure and multiplication of TMV.	K3	CO3
3	18	Categorize the principle, procedure and observation of differential staining.	K4	CO4
4	19	Explain the asexual reproduction of <i>Mucor</i> .	K5	CO5
5	20	Elaborate a detailed account on sexual reproduction of <i>Alternaria</i> .	K6	CO6

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION DECEMBER 2024
(First Semester)

Branch - **BOTANY**

PLANT DIVERSITY

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	In algae, the cell wall is made up of ----- a. Chitin c. Cellulose b. Suberin d. Cutin	K1	CO1
	2	The reserve food in <i>Oscillatoria</i> is stored in the form of ----- a. Starch c. Fat b. Glycogen d. Protein	K2	CO2
2	3	The cell walls of ----- are silicified. a. <i>Diatoms</i> c. <i>Sargassum</i> b. <i>Dictyota</i> d. <i>Gracilaria</i>	K1	CO1
	4	Agar agar is obtained from ----- a. Bacteria c. Fungi b. Gelidium d. Virus	K2	CO2
3	5	Bryophytes include----- a. Liverworts and ferns b. Mosses c. Ferns d. Mosses and liverworts	K1	CO1
	6	Scales in <i>Riccia</i> ----- a. Dorsal and Marginal b. Ventral and median c. Ventral and Marginal d. Dorsal and median	K2	CO2
4	7	Pteridophytes are also called----- a. Cryptogams b. Phenerogams c. Amphibian of the plant kingdom d. Vascular cryptogams	K1	CO1
	8	Horsetail is the common name of ----- a. <i>Equisetum</i> c. <i>Dryopteris</i> b. <i>Selaginella</i> d. <i>Marsilea</i>	K2	CO2
5	9	The wood of cycas is ----- a. Monoxyletic and manoxyletic b. Manoxyletic and polyxyletic c. Monoxyletic d. Diploxylic	K1	CO1
	10	Geological time scale is a system used to a. Describe the history of life on earth b. Determine the age of rocks c. Measure the rate of erosion d. Calculate the distance between tectonic plates	K2	CO2

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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.	Outline Fritsch system of classification of Algae.	K2	CO1
	(OR)			
	11.b.	Explain the sexual method of reproduction of <i>Volvox</i> .		
2	12.a.	Build the structure of <i>Gracilaria</i> .	K3	CO2
	(OR)			
	12.b.	Organize the sexual reproduction of <i>Dictyota</i> .		
3	13.a.	List out the general characteristics of Bryophytes.	K4	CO3
	(OR)			
	13.b.	Simplify the thallus structure of <i>Riccia</i> .		
4	14.a.	Explain on uses of Pteridophytes.	K5	CO4
	(OR)			
	14.b.	Determine the sexual reproduction of <i>Psilotum</i> .		
5	15.a.	Elaborate the structure of Leafy <i>Cycas</i> .	K6	CO5
	(OR)			
	15.b.	Discuss about the types of fossils.		

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	Illustrate the structure of <i>Oedogonium</i> .	K2	CO1
2	17	Organize the structure of <i>Sargassum</i> .	K3	CO2
3	18	Examine the structure of <i>Polytrichum</i> .	K4	CO3
4	19	Explain the male reproductive structure of <i>Equisetum</i> .	K5	CO4
5	20	Discuss about Geological time scale in detail	K6	CO5

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION DECEMBER 2024
(First Semester)

Branch - BOTANY

ZOOLOGY - I

Time: Three Hours

Maximum: 75 Marks

SECTION-A (10 Marks)

Answer **ALL** questions

ALL questions carry **EQUAL** marks

$$(10 \times 1 = 10)$$

Module No.	Question No.	Question	K Level	CO
1	1	The primary function of contractile vacuole in Protozoans is a. Excretion b. Perception c. Osmoregulation d. Egestion	K1	CO1
	2	Which of the following is a chordate but not a vertebrate? a. Catla b. Amphioxus c. Hippocampus d. Hemidictylus	K2	CO2
2	3	The primary mode of reproduction in Paramecium is a. Budding b. Fragmentation c. Parthenogenesis d. Binary fission	K1	CO1
	4	Obelia is a colonial hydroid that exhibits a. Dimorphism b. Monomorphism c. Polymorphism d. None of these	K2	CO2
3	5	The characteristic segmental body of an earthworm is called a. Annelid b. Coelom c. Metamerism d. Clitellum	K1	CO1
	6	The shell of a Pila snail is a. Internal b. External c. Rudimentary d. Absent	K2	CO2
4	7	The skeleton of a shark is made of a. Cartilage b. Bone c. Calcium carbonate d. Chitin	K1	CO1
	8	The primary respiratory organs of adult frogs are a. Gills b. Lungs c. Skin d. Both lungs and skin	K2	CO2
5	9	Pigeons are a. Endothermic b. Ectothermic c. Cold-blooded d. Warm-blooded	K1	CO1
	10	Rabbits are a. Omnivores b. Herbivores c. Carnivores d. Detritivores	K2	CO2

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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.	Develop a comprehensive note on the general characteristic features of the phylum Protozoa.	K3	CO3
		(OR)		
	11.b.	Organize a comparative analysis of chordates and nonchordates, focusing on their key features.		
2	12.a.	Analyze the life history of <i>Paramecium caudatum</i> .	K4	CO4
		(OR)		
	12.b.	Examine the structure of <i>Taenia solium</i> .		
3	13.a.	Analyze the morphological features of earthworm, <i>Megascolex mauritii</i> .	K4	CO4
		(OR)		
	13.b.	Inspect the organizational structure of <i>Asterias rubens</i> , in detail.		
4	14.a.	Examine the circulatory system of sharks, highlighting its unique adaptations.	K4	CO4
		(OR)		
	14.b.	Analyze the digestive system of a frog.		
5	15.a.	Explain the external morphology of pigeon.	K5	CO5
		(OR)		
	15.b.	Assess the digestive system of a rabbit.		

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	Explain the general characters of phylum Arthropoda.	K5	CO5
2	17	Analyze the structure and life history of <i>Obelia geniculata</i> .	K4	CO4
3	18	Evaluate the morphological adaptations of Pila that enable it to thrive in aquatic environments.	K5	CO5
4	19	Examine the central nervous system of a Frog.	K4	CO4
5	20	Discuss the reproductive systems of rabbit.	K6	CO5

Z-Z-Z

END

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

**BSc DEGREE EXAMINATION DECEMBER 2024
(Second Semester)**

Branch - BOTANY

ZOOLOGY -II

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	Insects are recognizable by their following legs? (a) Two (b) Four (c) Six (d) Eight	K1	CO1
	2	Mosquitoes are belonging to the following group? (a) Hymenoptera (b) Lepidoptera (c) Coleoptera (d) Diptera	K2	CO2
2	3	Swarming Caterpillar or Army worm is known as (a) <i>Nymphula depunctalis</i> (b) <i>Spodoptera Mauritia</i> (c) <i>Pachytiplosis oryzae</i> (d) <i>Chilo polychrysa</i>	K1	CO3
	4	<i>Chilo sacchariphagus indicus</i> is a ----- (a) Short borer (b) Stem borer (c) Top borer (d) Shoot borer	K2	CO2
3	5	<i>Amrasca biguttula</i> is a pest that affects mostly ----- (a) Rice (b) Cotton (c) Jute (d) Coffee	K1	CO1
	6	Radio active substances is ----- pest control measures? (a) Natural (b) Chemical (c) Physical (d) Artificial	K2	CO3
4	7	How many species of mulberry are available? (a) 10 species (b) 20 species (c) 30 species (d) 40 species	K1	CO2
	8	Powdery mildew disease is caused by the following fungus (a) <i>Phyllactinia</i> (b) <i>Pythium</i> (c) <i>Aspergillus</i> (d) <i>Beaureria</i>	K2	CO3
5	9	Name the silk which is produced by <i>Bombyx mori</i> ? (a) Tasar silk (b) Muga silk (c) Grandi silk (d) Mulberry silk	K1	CO2
	10	Which one spins a Cocoon? (a) Moth (b) Butterfly (c) spider (d) Mosquito	K2	CO3

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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.	Write a short note on insect morphology?	K2	CO1
	(OR)			
	11.b.	Write on the classification of Insects?		
2	12.a.	Mention the characteristic features of <i>Tryporyza incertulas</i> ?	K3	Co2
	(OR)			
	12.b.	Write about the impact of pests on sugarcane?		
3	13.a.	Define Pest Management and its importance?	K4	CO3
	(OR)			
	13.b.	What is known as Pesticides?		
4	14.a.	Explain the morphology of mulberry plant?	K5	CO4
	(OR)			
	14.b.	Write about the distinguishing characters of Powdery mildew?		
5	15.a.	Write about silk worm species?	K6	CO5
	(OR)			
	15.b.	Write a note on <i>Bombyx mori</i> ?		

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	Classify insects upto the level of orders with examples.	K2	CO1
2	17	Write a detailed account on pests on rice and its economic loss.	K3	Co2
3	18	Write a brief note on the biological control of pests.	K4	CO3
4	19	Explain the characteristics features of mulberry varieties.	K3	Co2
5	20	Write an account on Diseases of silk worm.	K5	CO4

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)
BSc DEGREE EXAMINATION DECEMBER 2024
(Third Semester)
Branch - BOTANY

VEGETATIVE PLANT BIOLOGY

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	Which of the following plant parts elongates directly and leads to the formation of primary roots? a) bud b) radical c) plumule d) root hair	K1	CO1
	2	The primary roots and their branches constitute the a) fibrous root system b) taproot system c) adventitious root system d) all of the above	K2	CO1
2	3	Velamen is a tissue found in a) Parasites b) All epiphytes c) Aerial roots of some orchids/vanda d) Halophytes	K1	CO2
	4	Rhizosphere is the region where a) Rhizobium form root nodules b) Algae and root make contact c) Soil and root make contact d) Bacterial and root nearly make contact	K2	CO2
3	5	What are lenticels? a) Epidermal structure b) A wax layer of leaves c) Opening in the bark d) Channel to transfer water	K1	CO3
	6	Intercalary meristem results in a) Primary growth b) Secondary growth c) Apical growth d) None	K2	CO3
4	7	Wound healing in plants is initiated by a) Apical meristem b) Lateral meristem c) Secondary meristem d) Intercalary meristem	K1	CO4
	8	Heartwood is also called a) Spring wood b) Non porous wood c) Duramen d) porous wood	K2	CO4
5	9	Phyllotaxy refers to an arrangement of a) phloem in a vascular bundle b) leaves on a branch c) veins in a leaf d) axillary buds in a plant	K1	CO5
	10	Opposite decussate phyllotaxy is found in a) Calotropis b) Mango c) Hibiscus d) Nerium	K2	CO5

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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.	Examine the structure of mature monocot root.	K4	CO1
	(OR)			
	11.b.	Distinguish between tap root systems and adventitious root systems.		
2	12.a.	Analyze the significance of root nodules.	K4	CO2
	(OR)			
	12.b.	Distinguish between Symplastic and Apoplastic passage of water.		
3	13.a.	Briefly explain any two theories of shoot apical meristems.	K5	CO3
	(OR)			
	13.b.	Interpret the different parts of a Plant Stem.		
4	14.a.	Discuss the economic uses of wood.	K6	CO4
	(OR)			
	14.b.	Elaborate the Process of secondary growth in stem.		
5	15.a.	What is venation? Give its types.	K3	CO5
	(OR)			
	15.b.	What are stomata? Identify the functions of stomata.		

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	Draw the structure of mature dicot plant root.	K4	CO1
2	17	Discuss about the specialized roots in plants.	K6	CO2
3	18	Analyze the anomalous secondary growth in <i>Nyctanthes</i> stem.	K4	CO3
4	19	Interpret the physical and chemical properties of wood.	K5	CO4
5	20	Give a elaborate note on the internal structure of dicot leaf with the help of neat diagram.	K6	CO5

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)
BSc DEGREE EXAMINATION DECEMBER 2024
(Third Semester)

Branch - BOTANY

REPRODUCTIVE PLANT BIOLOGY

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 transfer of pollen from the anther to stigma is called ----- a. Pollination b. Fertilization c. Adoption d. Diffusion	K1	CO1
	2	Jasmine is an example of ----- inflorescence a. special b. cymose c. racemose. d. umbel	K2	CO1
2	3	Which of the following pigment involved in red-far red light interconversion? a. Cytochrome b. Xanthophyll c. Phytochrome d. Lycopene	K1	CO2
	4	Phytochrome is a photosensitive pigment involved in ----- a. Geotropism b. Phototropism c. Photorespiration d. Photoperiodism	K2	CO2
3	5	Functional megaspore in an angiosperm develops into ----- a. Endosperm b. Embryo c. Embryo-sac d. Ovule	K1	CO4
	6	The male reproductive parts of a flower, the stamens, are collectively known as ____ a. Androecium b. Filament c. Anther d. Gynoecium	K2	CO4
4	7	In the angiosperms, the endosperm is formed ____ a. before fertilization b. after fertilization c. along with fertilization d. None of the above	K1	CO5
	8	The primary endosperm nucleus is ----- a. tetraploid b. triploid c. diploid d. haploid	K2	CO5
5	9	Apple is an example of ----- a. pepo b. hesperidium c. drupe d. pome	K1	CO6
	10	Seed dormancy allows the plants to a. develop healthy seeds b. reduce viability c. overcome unfavourable climatic conditions d. prevent deterioration of seeds	K2	CO6

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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.	What are the types of special inflorescence? Explain with illustrations.	K1	CO1
	(OR)			
	11.b.	Recall the parts of the flower with a neat diagram.		
2	12.a.	Interpret biological clock in plants.	K2	CO2
	(OR)			
	12.b.	Summarize the differences between Pr and Pfr forms.		
3	13.a.	Experiment with pollen compatibility.	K3	CO4
	(OR)			
	13.b.	Construct anther culture.		
4	14.a.	Categorize any two types of endosperm.	K4	CO5
	(OR)			
	14.b.	Analyze the process of fertilization.		
5	15.a.	Examine the structure of seed.	K4	CO6
	(OR)			
	15.b.	Discover the methods to break dormancy.		

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	Recall the types of pollination.	K1	CO1
2	17	Outline the role of phytochrome in flowering.	K2	CO2
3	18	Construct the structure of anther ?	K3	CO3
4	19	Analyze the development of endosperm ?	K4	CO4
5	20	Categorize the classification of fleshy fruits.	K4	CO5

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION DECEMBER 2024
(Third Semester)

Branch - **BOTANY**

CHEMISTRY- I

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	Among the following, identify the orbital which is closer to the nucleus a. P - orbital b. s - orbital c. d - orbital d. f - orbital	K1	CO1
	2	In terms of electron transfer ----- is called oxidation a. electron removal b. electron gain c. both a and b d. addition of Hydrogen	K2	CO1
2	3	In most naturally occurring terpenes, there is no _____ and _____ linkage a. 1-1 and 4-4 b. 4-1 and 1-1 c. 1-4 and 4-1 d. all the above	K1	CO2
	4	Starch is made up of a. Cellulose b. glucose c. fructose d. sucrose	K2	CO2
3	5	ppm is a. Parts per million b. mg/L c. both a and b d. parts per micron	K1	CO3
	6	Sublimation is the change from _____ to _____ a. Solid, liquid b. gas, liquid c. solid, gas d. liquid, gas	K2	CO3
4	7	Order of a chemical reaction can be a. Zero b. a whole number c. a fraction d. all the above	K1	CO4
	8	The rate of the first order reaction is a. Directly proportional to the concentration of the reactant b. inversely proportional to the concentration of the reactant c. independent of the concentration of the reactant d. proportional to the square of the inversely concentration of the reactant	K2	CO4
5	9	BOD is a. Biological oxygen demand b. botanical oxygen demand c. biological over demand d. boron oxygen demand	K1	CO5
	10	Among the following which one is not a green house gas a. CO ₂ b. CH ₄ c. NO ₂ d. SO ₃	K2	CO5

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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.	Explain the postulates of VSEPR theory.	K3	CO1
	(OR)			
	11.b.	Define oxidation number and explain how it is calculated.		
2	12.a.	State Huckel's rule. Explain it with examples.	K4	CO2
	(OR)			
	12.b.	What are alkaloids? How are they classified?		
3	13.a.	Explain fractional distillation.	K5	CO3
	(OR)			
	13.b.	Outline the principle and applications of thin layer chromatography.		
4	14.a.	List the characteristics of a catalytic reaction.	K3	CO4
	(OR)			
	14.b.	Write a note on chain reactions.		
5	15.a.	Explain the sources and effects of air pollution.	K4	CO5
	(OR)			
	15.b.	Discuss i. Acid rain ii. Eutrophication		

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	Discuss the shapes of orbitals.	K5	CO1
2	17	Explain in detail the applications of cellulose and its derivatives.	K4	CO2
3	18	Outline the principles of ion-exchange chromatography. Mention its applications.	K5	CO3
4	19	Discuss the mechanism of enzyme catalysis.	K4	CO4
5	20	Illustrate the various stages of water treatment.	K4	CO5

Z-Z-Z

END

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION DECEMBER 2024
(Fourth Semester)

Branch – **BOTANY**

GENETICS AND PLANT BREEDING

Time: Three Hours

Maximum: 50 Marks

SECTION-A (5 Marks)

Answer **ALL** questions

ALL questions carry **EQUAL** marks

(5 x 1 = 5)

- 1 If the genotype consists of only one type of allele. It is called
(i) homozygous (ii) heterozygous
(iii) momoallelic (iv) uniallelic
- 2 Who put forward the "Theory of linkage"
(i) Sutton (ii) Morgan
(iii) De Vries (iv) Bateson and Punnet
- 3 Name the type of mutation in which the cause of mutation is not known?
(i) Spontaneous mutation (ii) Suppressor mutation
(iii) Nonsense mutation (iv) Mis-sense mutation
- 4 Emasculation is
(i) Removal of male parts from a bisexual flower
(ii) Removal of female parts
(iii) Removal of male and female parts
(iv) None of the above
- 5 The Golden Rice variety is rich in
(i) Vitamin C (ii) Beta carotene and ferritin
(iii) Biotin (iv) Lysine

SECTION - B (15 Marks)

Answer **ALL** Questions

ALL Questions Carry **EQUAL** Marks

(5 x 3 = 15)

- 6 a) Analyze the monohybrid cross.
OR
b) Describe about the complementary genes.
- 7 a) Summarize the mechanism of crossing-over.
OR
b) Bring out the significance of Polyploidy.
- 8 a) Inspect the cytoplasmic male sterility in Maize.
OR
b) Briefly explain chromosomal translocation with suitable example.

Cont...

- 9 a) Outline the importance of hybrid vigour.
OR
b) Narrate the steps involved in plant acclimatization.
- 10 a) Identify the genetic improvement of paddy.
OR
b) How are wheat genetically improved?

SECTION -C (30 Marks)

Answer ALL questions

ALL questions carry EQUAL Marks (5 x 6 = 30)

- 11 a) Analyze the Incomplete dominance in detail.
OR
b) Discuss about the laws of inheritance and their expectations.
- 12 a) Elucidate the characteristics of multiple alleles with suitable examples.
OR
b) Briefly explain about tetrad analysis.
- 13 a) Give the different types of mutations and mutagens.
OR
b) Highlight the causes, mechanism and types of chromosomal mutation.
- 14 a) Summarize the procedure for plant introduction.
OR
b) Discover the procedure for pure line selection.
- 15 a) Discuss the genetic improvement of wheat crop.
OR
b) Point out the genetic improvement of Sugarcane.

Z-Z-Z

END

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION DECEMBER 2024
(Fourth Semester)

Branch – BOTANY

CHEMISTRY-II

Time: Three Hours

Maximum: 50 Marks

SECTION-A (5 Marks)

Answer ALL questions

ALL questions carry EQUAL marks

(5 x 1 = 5)

- Which of the following elements is a micronutrient?
(i) N (ii) Mn
(iii) Cu (iv) Zn
- The simplest amino acid is _____
(i) Proline (ii) Methionine
(iii) Glycine (iv) Serine
- Which group acts as a chromophore?
(i) – N=N- (ii) -OH
(iii) -OR (iv) –NH₂
- Unit of equivalent conductance is
(i) ohm cm (g-eq) (ii) ohm⁻¹ cm² (g-eq)⁻¹
(iii) ohm cm² (g-eq)⁻¹ (iv) ohm⁻¹ cm (g-eq)⁻¹
- Minamata disease was caused by consumption of fish containing
(i) Lead (ii) Zinc
(iii) Sulphur (iv) Mercury

SECTION - B (15 Marks)

Answer ALL Questions

ALL Questions Carry EQUAL Marks

(5 x 3 = 15)

- a) Discuss the phosphate fertilizers.
OR
b) Write short note on Pesticides.
- a) Write the preparation and uses of Pyridine.
OR
b) Discuss the preparation and properties of alanine.
- a) Compare the chromophore and auxochrome with suitable examples.
OR
b) Draw the following structure of i) anthocyanin ii) carotinoids

Cont...

9. a) Explain the effect of dilution on conductance.

OR

b) Describe the types of adsorption.

10. a) Write short note on chemistry of hemoglobin.

OR

b) Explain the toxicity of heavy metals.

SECTION -C (30 Marks)

Answer ALL questions

ALL questions carry EQUAL Marks

(5 x 6 = 30)

11. a) Explain in detail about manufacture of triple superphosphate.

OR

b) Discuss the natural plant Insecticides.

12. a) Explain the enzymes and discuss characteristics and mechanism of enzyme action.

OR

b) Discuss the following manufacture i) Spirit ii) Vinegar

13. a) Discuss about classification of dyes based on application.

OR

b) Explain the preparation of malachite green and alizarin.

14. a) Discuss the following i) Specific conductance ii) Molar conductance
iii) Equivalent conductance. (2+2+2)

OR

b) Derive the Langmuir adsorption isotherm.

15. a) Explain the non heme iron sulphur proteins.

OR

b) Discuss the toxicity of the following metals i) Cadmium ii) lead.

Z-Z-Z

END

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION DECEMBER 2024
(Fifth Semester)

Branch – BOTANY

PLANT TAXONOMY AND ECONOMIC BOTANY

Time: Three Hours

Maximum: 50 Marks

SECTION-A (5 Marks)

Answer ALL questions

ALL questions carry EQUAL marks

(5 x 1 = 5)

- 1 The substitute for the newly collected specimen when the original type material is missing in a herbarium is entitled as _____
(i) Holotype (ii) Neotype
(iii) Lectotype (iv) Isotype
- 2 Flowers of Cucurbitaceae are _____
(i) Epigynous (ii) Hypogynous
(iii) perigynous (iv) Amphigynous
- 3 Ray floret are found in _____ family
(i) Apocyanaceae (ii) Asteraceae
(iii) Liliaceae (iv) Orchidaceae
- 4 Drupe fruit is found in _____
(i) Arecaeae (ii) Cannaceae
(iii) Liliaceae (iv) Poaceae
- 5 Jute belongs to the family _____
(i) Tiliaceae (ii) Fabaceae
(iii) Malvaeae (iv) Poaceae

SECTION - B (15 Marks)

Answer ALL Questions

ALL Questions Carry EQUAL Marks

(5 x 3 = 15)

- 6 a Can you explain about author citation.
OR
b Outline valid publication.
- 7 a Show the floral characteristics Rutaceae.
OR
b Describe the types of stamens in Cucurbitaceae.
- 8 a Analyze the coralline corona.
OR
b Organize floral formula and floral diagram for Apocyanaceae.
- 9 a Sketch the cyathium inflorescence.
OR
b Summarize the inflorescence of Poaceae.

Cont...

- 10 a Explain cultivation practices of jute.
OR
b Describe the economic importance of clove.

SECTION -C (30 Marks)

Answer ALL questions

ALL questions carry EQUAL Marks

(5 x 6 = 30)

- 11 a Discuss the herbarium technique.
OR
b Analyze the natural system of classification.
- 12 a Discuss the economic importance of the family Rutaceae.
OR
b Describe the inflorescence and floral structure of any one plant from Brassicaceae family.
- 13 a Discuss on unique floral characters of Lamiaceae.
OR
b Elucidate the inflorescence of Asteraceae.
- 14 a Examine the economic importance of family Amaranthaceae.
OR
b Highlight the floral characters of the family Cannaceae.
- 15 a Discuss on nomenclature, cultivation practices and economic importance of redgram.
OR
b Describe on nomenclature, cultivation practices and economic importance of Coriandrum.

Z-Z-Z

END

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION DECEMBER 2024
(Fifth Semester)

Branch – BOTANY

MEDICINAL PLANT SCIENCE

Time: Three Hours

Maximum: 50 Marks

SECTION-A (5 Marks)

Answer ALL questions

ALL questions carry EQUAL marks

(5 x 1 = 5)

- 1 The study of use of medicinal plants are known as
 - (i) Herbarium
 - (ii) Pharmacognosy
 - (iii) Herbalism
 - (iv) None of the above
- 2 Flavours and perfumes are
 - (i) . Oils
 - (ii) Volatile oils
 - (iii) Essential oils
 - (iv) Lipids
- 3 Ashwagandha is useful in treatment of
 - (i) Blood sugar
 - (ii) Cancer
 - (iii) Stress management
 - (iv) All the above
- 4 Botanical name of Saffron is
 - (i) *Crocus sativus*
 - (ii) *Piper nigrum*
 - (iii) *Aloe vera*
 - (iv) *Myristica fragrans*
- 5 The drugs used to increase the efficiency and improve the contraction of the hearts is called as
 - (i) cardiotonic
 - (ii) neurotonic
 - (iii) musculotonic
 - (iv) paratonic

SECTION - B (15 Marks)

Answer ALL Questions

ALL Questions Carry EQUAL Marks

(5 x 3 = 15)

- 6 a) Is algae a medicinal plant? Explain.
OR
b) Differentiate adulteration and substitution.
- 7 a) How do botanic gardens help protect in plants?
OR
b) State the medicinal products of Asafoetida.
- 8 a) Can *Phyllanthus amarus* cure malaria? Explain.
OR
b) Explain the bioactive compounds in *Vitex negundo*.

Cont...

- 9 a) Comment on the active principles of Cinchona.
OR
b) Bring out the benefits of *Terminalia bellerica* fruit.
- 10 a) Explain about Laxatives and carminatives with examples.
OR
b) Show the role of antioxidants in the human body.

SECTION -C (30 Marks)

Answer **ALL** questions

ALL questions carry **EQUAL** Marks

(5 x 6 = 30)

- 11 a) Classify the medicinal plants based on chemical basis.
OR
b) Survey the methods of preparing drugs for the commercial market.
- 12 a) Analyze the methods of *ex-situ* conservation of medicinal plants
OR
b) Discuss the importance of quinone and terpenoids in plant products.
- 13 a) Highlight benefits of rhizomes in medicinal plants.
OR
b) Summarize the medicinal uses of *Digitalis* plant.
- 14 a) Enumerate the medicinal use of *Cinchona officinalis*.
OR
b) Categorize the active principles of *Cinnamomum verum* bark.
- 15 a) Trace the drugs acting on the central nervous system.
OR
b) Infer the types of regulators in urinogenital system. Add notes its significance.

Z-Z-Z

END

PSG COLLEGE OF ARTS & SCIENCE
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BSc DEGREE EXAMINATION DECEMBER 2024
(Fifth Semester)

Branch – BOTANY

HORTICULTURE

Time: Three Hours

Maximum: 50 Marks

SECTION-A (5 Marks)

Answer ALL questions

ALL questions carry EQUAL marks (5 x 1 = 5)

- 1 Name a method in which the cut stems of two different plants are joined together to grow as a single plant?
 (i) Layering (ii) Grafting
 (iii) Cutting (iv) None of the above
- 2 A _____ is laid out in a symmetrical or geometrical pattern.
 (i) informal garden (ii) sink garden
 (iii) rock garden (iv) formal garden
- 3 Which among the following hormone is used for inducing high flowering?
 (i) urea (ii) water soluble fertilizer
 (iii) Ethylene (iv) florigen
- 4 The term pomoculture is related to
 (i) vegetable science (ii) crop science
 (iii) flower science (iv) fruit science
- 5 _____ is the process when individual branches are cut selectively.
 (i) layering (ii) Pruning
 (iii) manuring (iv) harvesting

SECTION - B (15 Marks)

Answer ALL Questions

ALL Questions Carry EQUAL Marks (5 x 3 = 15)

- 6 a Name various gardening tools used in horticulture.
 OR
 b Identity the scope of horticulture.
- 7 a Explain the steps involved in Bonsai technique.
 OR
 b Trace the components of water garden.
- 8 a Develop a farming steps for achieving higher yield of Jasmine.
 OR
 b What kind of manures or fertilizers are prescribed to floriculture?
- 9 a Conclude the scope and importance of fruit farming.
 OR
 b Organize the various methods of storage of fruits for extending its shelf life.

Cont...

- 10 a Classify the plant growth regulators and add note on its role to increase growth and development of horticultural crops.

OR

- b Distinguish various irrigation types executed in horticulture.

SECTION -C (30 Marks)

Answer ALL questions

ALL questions carry EQUAL Marks

(5 x 6 = 30)

- 11 a How the plants are regenerated via cutting?

OR

- b Define garden and explain in details of its parts.

- 12 a Write an account on formal style of garden with suitable examples.

OR

- b Discuss the steps involved in kitchen garden.

- 13 a Prepare a well adopted cultivation practices of rose for getting higher yield.

OR

- b Discover the innovative techniques of flower arrangement in order to improve floriculture business.

- 14 a How the papaya is cultivated for bringing tasteful and healthy fruits?

OR

- b Elaborate the steps involved in Banana cultivation.

- 15 a Comment on preparation of Jam.

OR

- b What are all the common diseases affected the horticultural crops?

Z-Z-Z

END

PSG COLLEGE OF ARTS & SCIENCE
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BSc DEGREE EXAMINATION DECEMBER 2024
(Fifth Semester)

Branch – BOTANY

MAJOR ELECTIVE COURSE – I : SYLVICULTURE AND AGRO FORESTRY

Time: Three Hours

Maximum: 50 Marks

SECTION-A (5 Marks)

Answer ALL questions

ALL questions carry EQUAL marks

(5 x 1 = 5)

- 1 The forest in Sundarbans is also called?
(i) Scrub jungle (ii) Mangrove
(iii) Deciduous forest (iv) None of these
- 2 Which is a silviculture practice?
(i) Pruning (ii) Prescribed burning
(iii) Planting (iv) All of the above
- 3 Silvicultural characteristics of *Albizia lebbeck* is
(i) Cylindrical trunk (ii) 15-30meters
(iii) Spreading crown and straight (iv) all of these
- 4 It aims of social forestry is _____ through the sustainable use of forest resources.
(i) environmental (ii) social
(iii) economic (iv) all of these
- 5 Which NTFP is commonly used in traditional medicine?
(i) Bamboo (ii) Ginseng
(iii) Rubber (iv) Charcoal

SECTION - B (15 Marks)

Answer ALL Questions

ALL Questions Carry EQUAL Marks

(5 x 3 = 15)

- 6 a) Bring out the history of forest acts in India.
OR
b) Explain the benefits of silviculture.
- 7 a) Organize major ecological factors influencing vegetation.
OR
b) How do plants regenerate in forest?
- 8 a) State the economic importance of *Dalbergia sissoo*.
OR
b) Bring out the economic importance of *Pinus roxburghii*.
- 9 a) Develop the importance of multipurpose tree species to control soil erosion.
OR
b) Narrate the benefits of Joint Forest Management.
- 10 a) Explain the importance of forest resources.
OR
b) Analyze sustainable harvesting of forest resources.

Cont...

SECTION -C (30 Marks)

Answer ALL questions

ALL questions carry EQUAL Marks

(5 x 6 = 30)

- 11 a) How to classify forest types?
OR
b) Highlight the relationship between silviculture with forestry and its branches.
- 12 a) Elucidate the physiological factors influencing vegetation.
OR
b) Highlight the significance of selection and coppice system.
- 13 a) Discuss the economic importance of *Acacia* and *Amla*.
OR
b) Examine the wood values of *Albizia* and *Bamboo*.
- 14 a) Assume the role of multipurpose trees in agroforestry.
OR
b) Categorize the scope and importance of agroforestry.
- 15 a) Discuss the importance of Scope of NTFP.
OR
b) Elucidate the rubber and fibers importance of non-timber forest products like.

Z-Z-Z

END