MAHATMAGANDHIUNIVERSITY,KOTTAYAM

MGU-UGP (HONOURS) SECOND SEMESTER EXAMINATION

(2024ADMISIONONWARDS)

MG2DSCZGY101 – Biological Basis of BehaviourII

Model Question Paper

Duration:1.5hrs MaximumMarks:50

Studentsshouldattemptatleastonequestionfromeachcourseoutcometoenhancetheiroverall outcome attainability.

Part A

Fill in the blanks

Questions Answer **All**

Questions

Eachquestioncarries**1**mark

1. The bacterial cell wall is composed of -------

a) Peptidoglycan b) Chitin c) glucose d) Cellulose [Remember][CO: 1]

2. In which type of signalling do cells secrete molecules that bind to their own receptors?

a)juxtracrine b) paracrine c) endocrine d) autocrine [Understand][CO: 1]

3. DNA synthesis occurs during the _____phase of cell cycle

a) G1 b) G2 c) S d) M [Remember][CO: 1]

4. ------represents alternatives of a character and are present on two separate chromosomes of a homologous pair

a) synapse b) chromatid c) allele d) gene [Remember][CO: 2]

5. The dihybrid phenotypic ratio

a) 1:3:1 b) 1:2:1 c) 9:3:3:1 d) 9:7 [Understand][CO: 2]

6. Which enzyme is responsible for the conversion DNA to mRNA

a) . DNA polymerase b) RNA polymerase c) ligase d) helicase [Understand][CO: 2]

7. Example for sex limited character

a) Brachydactyly b) baldness c) cleft lip d)haemophilia [Remember][CO: 3]

8. The physical appearance of an organism is ----

a) Phenotype b) genotype c) allele d) heterogamete [Remember][CO: 3]

9. -----is a condition where an organism have more than 2 complete sets of chromosomes

a) polyploidy b) diploid c) haploid d) aneuploidy [Understand][CO: 3]

10.The number of chromosomes in human ------- karyotype

a) 54 b) 42 c) 46 d) 38 [Remember][CO: 4]

[1x10=10]

Part**B**

ShortAnswerType Questions

Answer **10**Questions

Eachquestioncarries**2**marks

11. Differentiate prokaryote and eukaryote. [Understand][CO: 1]
12. List the substages of prophase I of meiosis I [Understand][CO: 1]

13. Define cell communication [Understand][CO: 1]
14. Comment on basic principles of cell communication [Understand][CO: 1]
15. Explain monohybrid cross with example. [Understand][CO: 2]
16. A farmer has a tall pea plant but is unsure whether it is homozygous (TT) or heterozygous (Tt) for the tallness trait. Suggest a genetic method to determine its genotype and explain the expected outcomes. [Apply][CO: 2]
17. Describe central dogma in molecular biology [Understand][CO: 2]
18. Differentiate dominant and recessive mutation. [Understand][CO: 3]
19. A newborn is diagnosed with trisomy 21. Identify the disorder and describe its clinical manifestations. [Apply][CO: 3]
20. What are the ethical issues related to genetic experiments in human. [Analyse][CO: 4]
21. How can pedigree analysis be used to identify patterns of inheritance and genetic disorders? [Analyse][CO: 4]
22. Differentiate euthenics and eugenics [Understand][CO: 4]

[2x10=20]

Part**C**

Short EssayTypeQuestions Answer **5** Questions

Eachquestioncarries**4**marks

23. Describe different stages of mitosis. [Understand][CO: 1]
24. Describe different types of cellsignallingmolecules [Understand][CO: 1]
25. What are the benefits and risks of genetic engineering, and how do they influence human health and the environment? [Analyse][CO: 4]
26. Explain sex linked inheritance with an example. [Understand][CO: 2]
27. Describe the structure of DNA. [Understand][CO: 2]
28. Explain different types of gene mutation [Understand][CO: 3]
29. Describe sex chromosomal abnormalities with example. [Understand][CO: 3]

[4x5=20]

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MAHATMA GANDHI UNIVERSITY, KOTTAYAM

MGU-UGPP (HONOURS)

SECOND SEMESTER EXAMINATION

(2024 ADMISSION ONWARDS)

MG2DSCZIM101 – PUBLIC HEALTH MICROBIOLOGY

Duration :1.5 hrs Maximum Marks :50

Students should attempt atleast one question from each course outcome to enhance their overall out come attainability.

Part A

Fill in the blanks

Answer **All** Questions

Each question carries **1** marks

1. PHM stands for…… [Understand] [CO1]
2. …..…… is the father of Public Health [Remember][CO1]
3. …..…… is also known as Electronic waste [Understand] [CO2]
4. …..…….. is the pecentage of nitrogen in air [Remember][CO2]
5. Acid rain is caused due to…… [Understand][CO1]
6. …..……. agar is used in sampling of air [Understand][CO2]
7. Presumptive test is also known as …… [Remember][CO4]
8. …..…… is the spoliage causing bacteria in fish [Understand[[CO5]
9. Botulism is the disease caused by …….. bacteria [Remember][CO5]
10. HEPA stands for ……. [Understand][CO2]

[1 × 10 =10]

Part B

Short Questions

Answer any **10** Questions

Each question carries **2** Marks

11. Describe the scope of Public Health Microbiology. [Undestand][CO1]
12. Draw the presumptive test. [Remember[CO4]

13. Differentiate chemical pollutants in water pollution. [Remember][CO1]
14. Examine the diagnosis of Tuberculosis. [Understand][CO3]
15. Classify Food Poisoning. [Remember][CO5]
16. Criticize the source of contamination in fish [Understand][CO5]
17. Write any two type of air pollutants. [Remember][CO2]
18. Examine the symptoms of diphtheria. [Understand][CO3]
19. Define food Hygiene. [Remember][CO5]
20. Classify the composition of air. [Understand][CO2]
21. Discuss the techniques used in waste disposal . [Understand][CO5]
22. Identify the symptoms of typhoid . [Remember][CO4]

[2 × 10 =20]

Part –C

Short Essay Type Questions

Answer **5** Questions

Each question carriers **4** marks

23. Conclude a note on analysis of water. [Understand][CO4]
24. Develop prevention and control methods of air pollution. [Apply][CO2]
25. Illustrate the food borne infection. [Apply][CO5]
26. List out Airborne disease and describe briefly [Remember][CO3]
27. Investigate cause of waste pollution. [Evaluate][CO1]
28. Describe the symptoms of air borne infection [Understand][CO3]
29. Evaluate the microorganisms present in milk spoilage [Evaluate][CO5]

[4 ×5 =20]

MAHATMA GANDHI UNIVERSITY, KOTTAYAM

SECOND SEMESTER

MGU-UGP (HONOURS) ZOOLOGY REGULAR EXAMINATION

DISCIPLINE SPECIFIC CORE COURSE: MG2DSCZGY100

ENVIRONMENTAL BIOLOGY

(2024 ADMISSION ONWARDS)

MODEL QUESTION PAPER

Duration :1.5 hrs **Maximum Marks:50**

Students should attempt at least one question from each CO to enhance their overall outcome attainability

PART-A

Multiple Choice Questions (1 Mark Each). All questions compulsory

1. Which of the following is an abiotic component of an ecosystem? [CO1] [K]

    a) Plants

    b) Animals

    c) Sunlight

    d) Fungi

2. The Kyoto Protocol is associated with: [CO3] [U]

    a) Ozone layer protection

    b) Greenhouse gas emissions reduction

    c) Conservation of wetlands

    d) Protection of endangered species

3. Which of the following is an example of a gaseous biogeochemical cycle?

    a) Phosphorus cycle [CO1] [K]

    b) Nitrogen cycle

    c) Sedimentary cycle

    d) Sulphur cycle

4. The Chipko Movement was primarily aimed at: [CO4] [U]

a) Preventing deforestation

b) Water conservation

c) Wildlife protection

d) Air pollution control

5. What does the term "ecological footprint" measure? [CO3] [A]

a) The number of species in an ecosystem

b) Human impact on Earth's ecosystems

c) The biodiversity of a region

d) The amount of oxygen in an environment

6. Which of the following is an example of a positive animal interaction?[CO2] [U]

a) Parasitism

b) Competition

c) Mutualism

d) Predation

7. The primary cause of ozone depletion is: [CO3] [U]

a) Carbon dioxide emissions

b) Chlorofluorocarbons (CFCs)

c) Deforestation

d) Acid rain

8. What is the main objective of the Ramsar Convention? [CO3] [U]

a) Protection of forests

b) Conservation of wetlands

c) Regulation of air pollution

d) Waste management

9. Which of the following is an example of a primary consumer in an ecosystem?[CO1] [K]

a) Grass

b) Deer

c) Tiger

d) Mushroom

10. Which Indian law deals with air pollution control? [CO4] [U]

a) The Wildlife Protection Act, 1972

b) The Forest Conservation Act, 1980

c) The Air (Prevention and Control of Pollution) Act, 1981

d) The Environment Protection Act, 1986

11. The Red Data Book is published by: [CO3] [U]

a) UNEP

b) IUCN

c) WWF

d) IPCC

12. Which type of biome has the highest biodiversity? [CO2] [U]

a) Desert

b) Tundra

c) Tropical rainforest

d) Grassland

PART-B

Short Answer Questions (3 Marks Each). Answer Any 6

13. Define biodiversity and explain its types. [CO2] [U]

14. What are the major threats to biodiversity? [CO3] [A]

15. Explain the concept of food chain and food web with examples. [CO1] [U]

16. What are invasive species? [CO3] [U]

17. Discuss the Bhopal gas tragedy. [CO4] [U]

18. What are biodiversity hotspots? Mention two examples from India. [CO2] [U]

19. Explain any three environmental laws in India. [CO4] [U]

20. Illustrate the carbon cycle. Explain its significance [CO1] [U]

PART-C

Short Essay Questions (5 Marks Each). Answer Any 4

21. Describe the functions of an ecosystem and the energy flow through it. [CO1] [U]

22. Explain the importance of biodiversity conservation and the role of protected areas. [CO2] [U]

23. Discuss the environmental impact of plastic pollution and suggest control measures. [CO4] [A]

24. Explain the concept of ecological succession and its types. [CO3] [U]

25. What are population attributes? Explain the importance of natality and mortality in population growth? [CO2] [U]

26. What are natural disasters? Discuss their impact on biodiversity with examples. [CO3] [U]

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B.Sc Biological Techniques and Specimen Preparation
Model question paper
Second Semester MGU-UGP(Honours)
Multi-disciplinary course-
MG2MDCBTS100 Biological foundations for health and wellness

Duration:1 hour **Max.marks:35**

Part A

Multiple choice questions. Answer all questions. Question carries one mark

1.Name the storage polysaccharide in plants[K] [1]

a) Glucose b) Sucrose c) Lactose d) Starch

2. Name the vitamins that provide immunity[U] [1]

a)Vit A b)Vit D c) Vit C d) Both a) and b)

3. Which is the largest artery in human body.[K] [2]

a)Superior venacava b)Pulmonary artery c) Aorta d)Coronary artery

4. What is the function of diaphragm in breathing.[U] [2]

a) Pumps oxygen into the blood b) Filters dust and pollutants from the air

c)Contracts and relaxes to help air in and out of the lungs

d)Produces mucus to trap bacteria

5. Which blood vessel carries oxygen rich blood from heart to the body. [U] [2]

a)Veins b)Capillaries c)Arteries d) Lymph

Part B

Short answer type questions. Answer any five questions Each question carries 2 Marks

6. What is the role of RBC in circulatory system. [K] [2]

7. Why is stomach acidic and how is the stomach lining protected from acid damage?

8. Briefly explain healthy eating pyramid. [K] [1]

9. What is biological clock? [K] [1]

10. What are the biological functions of proteins in human body? [K] [1]

11. What is Central Dogma of Molecular Biology? [K] [3]

12. Briefly explain hierarchical organization in living system. [K] [1]

Part C

Short essay type questions. Answer any five questions. Each question carries 4 marks

13. Describe in detail the different biomolecules and their functions in the cell. [K] [1]

14. Enumerate in detail different dimensions of health. [K] [1]

15. Explain the role of nutrition in maintaining wellness [K] [1]

16. Explain the relationship between higher risk diet and cardiovascular disease [K] [1]

17. Explain the process of digestion in human body. [K] [1]

18 Describe the role of circulatory system in maintaining good health. [K] [1]

19. Describe the role of respiratory system in health and wellness. [U] [1]

MAHATMA GANDHI UNIVERSITY, KOTTAYAM

MGU-UGP (HONOURS)
SECOND SEMESTER EXAMINATION
(2024 ADMISION ONWARDS)
MG2DSCZIM102 – Molecules of Life

Duration: 1.5 hrs Maximum Marks: 50

Students should attempt atleast one question from each course outcome to enhance their overall outcome attainability.

Part A
Fill in the blanks
Answer **All** Questions
Each question carries **1** mark

1.Molecules have only 1 potential sugar group are called…….. [Remember] [CO1]
2.All proteins are……of aminoacids [Understand] [C02]
3.Double helical model of DNA was proposed by…… [Remember] [CO5]
4.Lipids are esters of fatty acids with …… [Remember] [CO4]
5.The pH at which amino acid carry no net charge is called…… [Understand] [C02]
6 ….……..is the reserved carbohydrates in plant kingdom [Remember] [CO1]
7.The sugar in DNA is…… while RNA is ribose. [Remember] [C05]
8.The basic unit of nucleic acid is…….. [Remember] [CO5]
9.In carbohydrates change in specific rotation with time is called…….....[Remember] [CO1]
10.Hemoglobin is a……protein found in red blood cells [Remember] [CO3]
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[1 x 10 = 10]

Part B
Short Questions
Answer10 **Q**uestions
Each question carries 2 marks

11. Differentiate between monosaccharides and disaccharides [Understand] [CO1]
12. Outline the structure of maltose [Understand] [CO1]
13. Write short note on tertiary structure of proteins. [Apply] [CO3]
14. Define saponification number [Understand] [CO4]
15. Discuss the importance of mucopolysaccharides? [Understand] [CO1]
16. Write short note on denaturation and renaturation of proteins. [Understand] [CO2]
17. State chargaff's rule? . [Understand] [CO5]
18. Differentiate between essential and non essential amino acids. [Understand] [CO2]
19. Define mutarotation [Understand] [CO1]
20. Disuss the physiological importance of phospholipids. [Understand] [CO5]
21. Discuss the characteristic features of nucleic acid? [Understand] [CO5]
22. Illustrate the structure amino acid glycine? [Apply] [CO2]

[2 x 10 = 20]

Part **C**

Short Essay Type Questions

Answer 5 Questions

Each question carries 4 marks

23. Write an essay on classification of carbohydrates. [Understand] [CO1]
24. Explain Watson and Crick model of DNA. [Understand] [CO5]
25. Compare and contrast primary and secondary structure of protein. [Apply] [CO3]
26. Define isoelectric pH.Explain classification of aminoacid based on nutritional requirement. [Understand] [CO2]
27. Explain chemical constants of fatty acid? [Apply] [CO4]
28. Discuss the significance of Lecithin and cephalin. [Understand] [CO5]
29. Write an essay on homopolysaccahrides and heteropolysaccharides [Understand] [CO1]

[4 x 5 = 20]

MAHATMA GANDHI UNIVERSITY, KOTTAYAM

SECOND SEMESTER

MGU-UGP (HONOURS) ZOOLOGY REGULAR EXAMINATION

MULTI-DISCIPLINARY COURSE: MG2MDCZGY100

PET CARE AND MANAGEMENT

(2024 ADMISSION ONWARDS)

MODEL QUESTION PAPER

Duration :1 hr. **Maximum Marks:35**

Students should attempt at least one question from each CO to enhance their overall outcome attainability

PART-A

Multiple Choice Questions (1 Mark Each). All questions compulsory

1. The era where the dogs were depicted in ancient artwork [CO1] [K]

    a) Bronze age

    b)Palaeolithic era

    c) Iron age

    d) Neolithic age

2. The cat breed referred to as "Rainbow cat" [CO2] [U]

    a) Bengal

    b) Oriental short hair

    c) Bombay

    d) Siamese

3. The viral disease affecting the nervous system of cat?[CO4] [K]

    a) Distemper

    b) Diabetes

    c) Rabies

    d) Heartworm

4. An ectoparasite of dog [CO4] [U]

a) Flea

b) Round worm

c) Hook worm

d) Aspergillus

5. Major source of revenue in pet industry? [CO3] [A]

a) Mining

b) Fishing

c) Crop production

d) Breeding & grooming **(5x1= 5 marks)**

PART-B

Short Answer Questions (2 Marks Each). Answer Any 5

6. Define PETA [CO1] [K]

7. Mention the career opportunities in pet care management. [CO3] [U]

8. Explain the role of animal shelters and rescue organizations. [CO1] [U]

9. Describe the common health issues in dogs.? [CO4] [U]

10.Comment onthe different breeds of cats. [CO2] [U]

11.Discuss any 2 grooming methods in birds. [CO2] [U]

12. Mention the purpose of regulatory compliance in pet food production (CO2) (U)

(5x2=10 marks)

PART-C

Short Essay Questions (5 Marks Each). Answer Any 4

13. Describe the general habits of pet cat. [CO3] [U]

14. Write on AWBI (CO1)(U)

15. Discuss the relevance of healthcare in sick birds.[CO4] [U]

16. Explain the general habits of pet dogs. [CO3] [U]

17. Describe the general diagnostic methods of bird diseases? [CO2] [U]

18. Discuss the role of veterinary nutritionist in pet food development. [CO2] (U)

(4x5=20 marks)

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