



WEST BENGAL STATE UNIVERSITY
B.Sc. Honours/Programme 4th Semester Examination, 2023

ZOOHGEC04T/ZOOGCOR04T-ZOOLOGY (GE4/DSC4)

Time Allotted: 2 Hours

Full Marks: 40

*The figures in the margin indicate full marks.
Candidates should answer in their own words
and adhere to the word limit as practicable.*

*প্রাঙ্গিক সীমার মধ্যস্থ সংখ্যাটি পূর্ণমান নির্দেশ করে।
পরীক্ষার্থীরা নিজের ভাষায় যথা সম্ভব শব্দসীমার মধ্যে
উত্তর করিবে।*

1. Answer any **eight** questions from the following:

2×8 = 16

নিম্নলিখিত যে-কোনো আটটি প্রশ্নের উত্তর দাও:

- (a) Define Biodegradation.
বায়োডিগ্রেডেশানের সংজ্ঞা দাও।
- (b) What is Algal bloom?
শৈবাল ব্লুম কাকে বলে ?
- (c) What do you mean by Biomedical waste?
বায়োমেডিকেল বর্জ্য বলতে কি বোঝো ?
- (d) Write the full form of CFC and DDT.
CFC ও DDT-এর সম্পূর্ণ নাম লেখো।
- (e) Write the Pathogen and habitat of Cholera.
কলেরা রোগের জীবাণু ও বাসস্থানের নাম লেখো।
- (f) Write two causes of sound pollution.
শব্দদূষণের দুটি কারণ লেখো।
- (g) Mention two control measures of Ozone Hole formation.
ওজোন হোল নিয়ন্ত্রণের দুটি উপায় লেখো।
- (h) What do you mean by teratogenesis?
টেরাটোজেনেসিস বলতে কি বোঝো ?
- (i) What is mean by "Rice water stool"?
"রাইস ওয়াটার স্টুল" বলতে কি বোঝো ?
- (j) Write two effects of climate change on Public health.
জনস্বাস্থ্যের ওপর আবহাওয়া পরিবর্তনের দুটি প্রভাব লেখো।
- (k) In which disease BCG Vaccine is given?
BCG ভ্যাকসিন কোন্ রোগের ক্ষেত্রে দেওয়া হয় ?
- (l) How BOD regulate the quality of water?
BOD কিভাবে জলের গুণগত মান নির্ধারণ করে ?

2. Answer any *three* questions from the following: 3×3 = 9
 নিম্নলিখিত যে-কোনো তিনটি প্রশ্নের উত্তর দাওঃ
- (a) Write the effect of Acid rain on Agriculture. 3
 কৃষিকার্যের ওপর অম্লবৃষ্টির প্রভাবগুলি লেখো।
- (b) What are Arsenicosis? Give a brief note on its effect on human body. 1+2
 আর্সিনিকোসিস কি ? মানবদেহে এর প্রভাব সংক্ষেপে বর্ণনা করো।
- (c) What is acute toxicity and chronic toxicity? Explain with suitable example. 2+1
 অ্যাকিউট টক্সিসিটি ও ক্রনিক টক্সিসিটি কাকে বলে ? একটি উদাহরণ সহযোগে ব্যাখ্যা করো।
- (d) What is fly ash? Write utilization of fly ash. 1+2
 ফ্লাই আশ কি ? ফ্লাই আশের ব্যবহার সম্পর্কে লেখো।
- (e) What do you mean by organic pollutant? Give two examples. 2+1
 জৈব দূষক কাকে বলে ? দুটি উদাহরণ দাও।
3. Answer any *three* questions from the following: 5×3 = 15
 নিম্নলিখিত যে-কোনো তিনটি প্রশ্নের উত্তর দাওঃ
- (a) Write short notes on: (any *two*) 2½ × 2 = 5
 (i) Typhoid, (ii) Minamata, (iii) Filariasis
 টীকা লেখোঃ (যে কোনো দুটি)
 (i) টাইফয়েড, (ii) মিনামাটা, (iii) ফাইলেরিয়েসিস
- (b) What is cyclone? Mention its characteristics, types and effects. 2+1+1+1
 ঘূর্ণিঝড় কি ? এর বৈশিষ্ট্য, প্রকারভেদ ও প্রভাব বর্ণনা করো।
- (c) What are the causes of increasing green house gases? Mention any two control measures to decrease the green house effects and global warming condition. 3+2
 গ্রিন হাউস গ্যাসগুলির বৃদ্ধির কারণ কি ? যে-কোন দুটি গ্রিন হাউস প্রভাব এবং বিশ্বব্যাপী উষ্ণতা বৃদ্ধির ঘটনা কমানোর উপায় লেখো।
- (d) Write the harmful effects of Xenobiotics. 5
 জেনোবায়োটিকের ক্ষতিকর প্রভাবগুলি লেখো।
- (e) Write about pathogen, mode of transmission, symptom and prevention of tuberculosis. 1+1+1+2
 যক্ষ্মা রোগের জীবাণু, সংক্রমণ, লক্ষণ ও নিয়ন্ত্রণ সম্পর্কে লেখো।

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B.Sc. Honours 4th Semester Examination, 2023

ZOOACOR08T-ZOOLOGY (CC8)

Time Allotted: 2 Hours

Full Marks: 40

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1. Answer any **eight** questions from the following: 2×8 = 16
- Define cranial nerve. How many cranial nerves are found in human?
 - Differentiate between mesonephric and metanephric kidney.
 - Mention the different Valves in mammalian heart and their positions.
 - What is parabronchi?
 - Where do we find bunodont teeth?
 - What is pyloric sphincter?
 - Distinguish between sulci and gyri.
 - Write down dental formula of elephant.
 - What is aqueduct of Sylvius?
 - What is Wolffian duct?
 - How many aortic arches are found in cyclostomes and reptiles?
 - How many types of uteri are found in vertebrates? Name them.
2. Answer any **three** questions from the following: 3×3 = 9
- Write down the role of afferent and efferent branchial artery in fish. 3
 - Define foramen ovale, foramen magnum and foramen of Panizza. 1+1+1
 - Enumerate briefly the jaw suspension of mammals. 3
 - Define receptor. Add a note on chemoreceptor in Vertebrates. 1+2
 - Describe the structure of Venous heart with simple diagram. 2+1
3. Answer any **three** questions from the following: 5×3 = 15
- Mention the components of respiratory system in birds. Write down the function of air sacs in birds. 2+3
 - Describe the auditory receptor in human with diagram. 3+2
 - Give a comparative account of aortic arch in mammals and birds. 5
 - Explain any one integumentary derivative of birds with diagram. What is Pterylae? 3+1+1
 - Write short notes on: (any **two**) 2 $\frac{1}{2}$ × 2 = 5
 - Gizzard in bird,
 - Nail and Hoofs,
 - C.S.F.

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ZOOACOR10T-ZOOLOGY (CC10)

Time Allotted: 2 Hours

Full Marks: 40

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1. Answer any **eight** questions from the following: 2×8 = 16
- (a) What is MALT?
 - (b) What is adaptive immunity? How does it differ from innate immunity?
 - (c) What do you mean by super antigen?
 - (d) Differentiate between epitope and paratope.
 - (e) What is hematopoietic stem cell?
 - (f) What is auto-immune disease?
 - (g) What is hapten? Give example.
 - (h) What is monoclonal antibody?
 - (i) How does sickle cell protect against malaria?
 - (j) What type of hypersensitivity are generally associated with an insect bite?
 - (k) What is adjuvant? Give example.
 - (l) What do you mean by ADCC?
2. Answer any **three** questions from the following: 3×3 = 9
- (a) What are MHC molecules? Differentiate between Class I and Class II MHC molecule. 1+2
 - (b) What is thymocyte? What do you mean by positive and negative selection during T cell maturation? 1+2
 - (c) Write a short note on immunization. 3
 - (d) Distinguish between agglutination and precipitation in antigen-antibody reaction. 3
 - (e) Mention the source and function of IL-4, IL-12 and IFN-gamma. 1+1+1
3. Answer any **three** questions from the following: 5×3 = 15
- (a) Differentiate between classical and alternative pathway of complement system. 5
 - (b) Explain different types of ELISA technique. State the basic principle of ELISA. 3+2
 - (c) Compare and contrast the phenotypical and functional features of neutrophils and macrophages. Name the main cytokines produced by these cells and their role in inflammatory response. $2\frac{1}{2} + 2\frac{1}{2}$
 - (d) Describe the hybridoma technology. 5
 - (e) Classify immunoglobulin molecules based on the nature of H-Chain. Which of these classes of antibody secretes with body fluid? 4+1

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ZOOACOR09T-ZOOLOGY (CC9)

Time Allotted: 2 Hours

Full Marks: 40

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1. Answer any *eight* questions from the following: 2×8 = 16
- (a) Why is carbon monoxide said to be a respiratory poison?
 - (b) Give examples of ammonotelic, ureotelic and uricotelic animals.
 - (c) What is macula densa?
 - (d) What does the QRS Complex of ECG denote?
 - (e) State the functions of SA node and bundle of His.
 - (f) Write down the names of a vitamin and an inorganic ion necessary for blood clot formation.
 - (g) What is dead space in respiration?
 - (h) What is regional heterothermy? Give examples.
 - (i) Mention one extrarenal osmoregulatory organ in vertebrates and state its function.
 - (j) Where are crypts of Lieberkühn found? State their function.
 - (k) What is chloride shift?
 - (l) What is the purpose of panting?
2. Answer any *three* questions from the following: 3×3 = 9
- (a) Define vital capacity, tidal volume and total lung capacity.
 - (b) Describe the mechanism of osmoregulation in sharks.
 - (c) Write down the composition and functions of bile. Name two bile salts.