

B.Sc. (Sem.-3) Examination

CC 201

Health Hygiene

March 2019

Time : 2-30 Hours]

[Max. Marks : 70

- Q-1 (A) Discuss cells differentiation for various types tissues and functions. [14]
OR
- (A)1 List and Explain various layers of skin [7]
2 List respiratory organs and discuss anatomy of any one of them [7]
(B) Answer any Four in brief [4]
1 Give average length of Small and Large intestine in adult human
2 Where Sebaceous glands are located?
3 Write two functions of Liver
4 Which part of the digestive system maximally absorbs nutrients to blood stream?
5 Give anatomical position of Bronchi
6 Draw the labelled diagram of digestive system
- Q-2 (A) Discuss various types of joints and giving suitable example. [14]
OR
- (A)1 List parts of axial skeleton and describe Vertebral column [7]
2 List various types of muscles and describe any one type in detail [7]
(B) Answer any Four in brief [4]
1 Match the Muscle type (a) with Description (b)
(a) Smooth muscles, Cardiac muscles, Skeletal muscles
(b) Fiber thickest in middle, tapered at ends, one central nucleus, not striated.
Branched cylindrical fiber, intercalated disc, striated.
Long cylindrical with peripherally located nucleus, striated.
2 Name two components of renal corpuscle
3 Name and locate the largest bone in the human body
4 List the components of Appendicular skeleton
5 List two functions of Skeletal system
6 What are Cancellous bones?
- Q-3 (A) Describe Cell and Tissue that constitute nervous system. [14]
OR
- (A)1 Explain locational anatomy and internal structure of Pituitary gland [7]
2 List hormones secreted by Adrenal gland giving its physiological function [7]
(B) Answer any Three in brief [3]
1 Match Hormone (a) and the Glands (b)
(a) FSH, Calcitonin, Melatonin, Insulin, Aldosterone
(b) Adrenal, Thyroid, Pineal, Pancreatic islets, Anterior Pituitary
2 Write difference between Motor and Sensory neurons
3 Write name for Connective tissue surrounding individual axon
4 What is Pectoral Girdle?
5 Write two functions of Hypothalamus gland
- Q-4 (A) Explain the anatomy and working of Heart. [14]
OR
- (A)1 Explain structure and function of RBCs [7]
2 Describe male reproductive organ with labelled diagram [7]
(B) Answer any Three in brief [3]
1 Give direction of blood flow in Veins and Arteries with reference to heart
2 Name the component connecting Ovary to Uterus
3 What is function of G-cells?
4 What is Lymphatic system?
5 What is gestation period in humans?

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- Q-1 A. Explain drug receptor interaction and describe G protein coupled receptor. [14]
OR
- A. 1. Describe the sources and active principle of drug. [7]
2. Write a detailed note on Unani system of medicine. [7]
- B. Answer the following (Any four) [4]
1. Name the *tridosha* as in Ayurved
 2. How subcutaneous parental drug is administered?
 3. What is the basic principle of Homeopathy?
 4. Increase in numbers of receptor on surface of target cells is called _____
 5. Drugs which are lipid insoluble and highly ionized fail to enter the cell membrane (True / False)
 6. Explain antagonist drug.
- Q-2 A. Which are the various drug formulations? Explain various types of drug packaging. [14]
OR
- A. 1. Discuss the drug dispensing environment as per Good Dispensing Practices. [7]
2. Write a note on contraindications with examples. [7]
- B. Answer the following (Any four) [4]
1. What is shown in 'Inscription' part of the prescription?
 2. If the drug dose is 250 mg, how many doses are contained in 10 g of drug?
 3. Write Young's rule of paediatric dose.
 4. What is the meaning of Rx?
 5. Drug administered by I.V. route has 100 % Bioavailability. (True / False)
 6. In which year 1st addition of Indian Pharmacopoeia was published?
- Q-3 A. Explain action potential with diagram and mechanism of action of any drug acting on CNS. [14]
OR
- A. 1. Write a note on inhibitors of RAA System. [7]
2. Describe the phenomenon of time course of drug action. [7]
- B. Answer the following (Any three) [3]
1. Define half-life.
 2. What is the difference between Antiseptic and Disinfectant?
 3. Explain the role of β -Blocker drugs.
 4. Histamine is derived from decarboxylation of _____.
 5. Write the name of any one excitatory neurotransmitter.
- Q-4 A. Explain psychotropic drugs and discuss the dependence and withdrawal symptoms in drug abuse. [14]
OR
- A. 1. Explain the constituents of alcoholic beverages and its metabolism. [7]
2. Write a note on harmful effects and benefits of quitting tobacco. [7]
- B. Answer the following (Any three) [3]
1. Name any two club drugs.
 2. Which tests are commonly used for testing of blood alcohol content (BAC)?
 3. What is Depressant drug?
 4. What is the effect of alcohol consumption on heart?
 5. How does Nicotine affects the body?

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Geology

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[Max. Marks : 70

૧. વર્ણન કરો: ખંડીય પ્રવહન સિધ્ધાંત એટલે શું? કોણે તેનો પ્રસ્તાવ મુક્યો હતો? ખંડીય પ્રવહનનાં કારણો અને પુરાવાઓ પર નોંધ લખો. (૧૪)
- અથવા
- (અ) (૧) એરીનો સમતુલા સિધ્ધાંત. (૦૭)
 (૨) શિલાખંડ ભૂસંચલનનાં કારણો અને અગત્યતા. (૦૭)
- (બ) ટૂંકા જવાબ આપો (છ માંથી કોઈ પણ ચાર): (૦૪)
 (૧) સમતુલાની વ્યાખ્યા આપો.
 (૨) ખંડીય પ્રવહનની વ્યાખ્યા આપો.
 (૩) પ્રાટનાં સમતુલા સિધ્ધાંત પર ટૂંકમાં લખો.
 (૪) 'પેન્યાલાસા' એટલે શું?
 (૫) જુદા જુદા ભૂસંચલન શિલાખંડનાં નામ આપો.
 (૬) શિલાખંડ સીમાનાં ત્રણ પ્રકારો દર્શાવો.
૨. ચર્ચા કરો: તરંગો, પ્રવાહો અને ભરતી-ગોટ કેવી રીતે ઉદભવ પામે છે? સમુદ્રો અને મહાસાગરો દ્વારા ઉદભવતા નિક્ષેપ લક્ષણો પર નોંધ લખો. (૧૪)
- અથવા
- (અ) (૧) ભૂગર્ભજળની પરિભાષા. (૦૭)
 (૨) ઝરાં અને તેનાં ઉદભવ. (૦૭)
- (બ) ટૂંકા પ્રશ્નો (છ માંથી કોઈ પણ ચાર): (૦૪)
 (૧) સમુદ્રતળ આલેખની વ્યાખ્યા આપો.
 (૨) દરિયાઈ નિક્ષેપોની વ્યાખ્યા આપો.
 (૩) દરિયાઈ ધોવાણની વ્યાખ્યા આપો.
 (૪) સંતૃપ્તિ વિભાગની વ્યાખ્યા આપો.
 (૫) જળચક્રની વ્યાખ્યા આપો.
 (૬) અધોસ્થળ જળની વ્યાખ્યા આપો.
૩. સમજાવો: પૃથ્વિના ભૂસ્તરીય ઇતિહાસના મૂખ્ય વિભાગ એટલે શું? ભૂસ્તરીય કાળક્રમ આપો અને તેની વિગતવાર ચર્ચા કરો. (૧૪)
- અથવા
- (અ) (૧) જીવ પ્રાણી અને વનસ્પતિ) ની લાક્ષણિકતાઓ. (૦૭)
 (૨) જીવનનો ઉદભવ અને ઉત્ક્રાંતિ. (૦૭)
- (બ) ટૂંકમાં લખો (પાંચમાંથી કોઈ પણ ત્રણ): (૦૩)
 (૧) સ્તરવિદ્યા સંબંધિત બે પર્યાયનો ઉલ્લેખ કરો.
 (૨) સ્તરવિદ્યાનો કોઈપણ એક નિયમ આપો.
 (૩) સમકાલીનતાની વ્યાખ્યા આપો.
 (૪) ઉત્ક્રાંતિની વ્યાખ્યા આપો.
 (૫) વનસ્પતિ અને પ્રાણીના ત્રણ-ત્રણ સમુદાયનાં નામ આપો.
૪. નોંધ લખો: નકશાની વ્યાખ્યા આપો. પ્રમાણમાપ નકશાં પર કઈ રીતે દર્શાવવામાં આવે છે? સમોચ્ચવૃત રેખાઓની વિગતો આપો. (૧૪)
- અથવા
- (અ) (૧) આર્થિક ખનિજોનું વર્ગીકરણ. (૦૭)
 (૨) લોહ ખનિજોની ઉત્પત્તિ, પ્રાપ્તિસ્થિતિ અને ખનિજવિદ્યા. (૦૭)
- (બ) ટૂંકમાં જવાબ લખો (પાંચમાંથી કોઈ પણ ત્રણ): (૦૩)
 (૧) ઊંચાઈની વ્યાખ્યા આપો.
 (૨) સ્થળદ્રશ્યની વ્યાખ્યા આપો.
 (૩) વિવૃત્તિની વ્યાખ્યા આપો.
 (૪) અબરખ ખનિજોના ચાર નામ આપો.
 (૫) ઔદ્યોગિક ખનિજોની વ્યાખ્યા આપો.

1. Describe: What is continental drift theory? Who has proposed it? Write a note on causes and evidences of continental drift. (14)
- OR**
- (A) (i) Airy's theory of isostasy. (07)
(ii) Causes and importance of plate tectonics. (07)
- (B) **Write short answers (Any four out of six):** (04)
(i) Define isostasy.
(ii) Define continental drift.
(iii) Briefly provide Pratt's theory of isostasy.
(iv) What is 'Panthalasa'?
(v) Name various tectonic plates.
(vi) Mention types of plate boundaries.
2. Discuss: How waves, currents and tides are originated? Write a note on depositional features produced by seas and oceans. (14)
- OR**
- (A) (i) Terminology of groundwater. (07)
(ii) Springs and their origin. (07)
- (B) **Short Questions (Any four out of six):** (04)
(i) Define hypsographic curve.
(ii) Define marine deposits.
(iii) Define marine erosion.
(iv) Define zone of saturation.
(v) Define hydrological cycle.
(vi) Define subsurface water.
3. Explain: What are major divisions of earth's geologic history? Provide and discuss geological time scale in details. (14)
- OR**
- (A) (i) Characteristics of organisms (plants and animals). (07)
(ii) Origin and evolution of life. (07)
- (B) **Write in brief (Any three out of five):** (03)
(i) Mention two terms related to stratigraphy.
(ii) Provide any one law of stratigraphy.
(iii) Define homotaxis.
(iv) Define evolution.
(v) Give names of three phyla of plants and three phyla of animals.
4. Write note: Define maps. How scales are represented on maps? Give details about contours. (14)
- OR**
- (A) (i) Classification of economic minerals. (07)
(ii) Origin, mode of occurrence and mineralogy of iron deposits. (07)
- (B) **Write answers in brief (Any three out of five):** (03)
(i) Define elevation.
(ii) Define relief.
(iii) Define outcrop.
(iv) Give names of four mica minerals.
(v) Define industrial mineral.

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Environmental Science

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Time : 2-30 Hours]

- Q-1 (A) Discuss origin of Earth and its uniqueness among celestial bodies [14]
OR
- (A)1 Explain the interior of the Earth with suitable diagram [7]
2 Describe geological subdivisions of Indian subcontinent with their characteristics [7]
(B) Answer any Four in brief [4]
1 What are chief chemical constituents of soil?
2 How absolute age of the rock is determined?
3 How Humus is formed?
4 What is Soil Horizon?
5 Name two common soil types found in Gujarat
6 What are P and S waves in earthquake?
- Q-2 (A) Write detailed note on formation and classification of rocks [14]
OR
- (A)1 Discuss formation of Igneous and Sedimentary rocks [7]
2 Explain natural forces responsible for erosion of Earth's material [7]
(B) Answer any Four in brief [4]
1 How coal is formed in the Nature?
2 What is Lignite?
3 What kind of rock is Marble?
4 Give an example of Igneous type of rock
5 What is Magma?
6 What is approximate depth of Earth crust layer?
- Q-3 (A) Write detailed note on Plate Tectonics as dynamic force on Earth [14]
OR
- (A)1 Explain role of Volcanic activities as endogenic Earth dynamic force [7]
2 Define geohazards and discuss means for its remediation [7]
(B) Answer any Three in brief [3]
1 What is 'active fault'?
2 Name place in Indian suitable for harvesting energy from Tidal waves
3 How Glaciers makes erosion of land?
4 What is 'Pangaea' ?
5 What are Converging and Diverging plate boundaries?
- Q-4 (A) Describe Hydrological and Rock cycles with diagram [14]
OR
- (A)1 Explain elemental cycling of Nitrogen [7]
2 Describe role of Photosynthetic processes in elemental cycling [7]
(B) Answer any Three in brief [3]
1 Name the source and process availing Phosphate at the beginning of cycling
2 What is the main reservoir of Nitrogen?
3 Which of the elemental cycling does not involve gaseous state?
4 What are Cyanobacteria?
5 Define Biodegradation

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Bio-chemistry

March 2019

Time : 2-30 Hours]

[Max. Marks : 70

- Q1(A) Explain the followings (14)
1. Principle behind the pH meter
 2. Properties of Water.
 3. Hemoglobin as a physiological buffer
- OR
- Q1(A)i Define: Acid, Base, Indicators, P_{K_w} , pOH , pK_a , pH (07)
- Q1(A)ii Write a note on buffer capacity with appropriate examples. (07)
- Q1(B) Answer any four (04)
1. State the Henderson Hasselbalch Equation
 2. What is the importance of Henderson Hasselbalch Equation
 3. Define Buffer
 4. What is buffer capacity
 5. Name the electrodes of P^H meter
 6. Which solvent is considered as universal solvent
- Q2(A) Write a note on : (14)
1. Pfeffer's method of measuring osmotic pressure (With diagram)
 2. Discuss the physiological importance of viscosity
- OR
- Q2(A)i Explain: Donnan membrane equilibrium and its relation to osmotic pressure (07)
- Q2(A)ii Define surface tension and list the factors affecting it. (07)
- Q2(B) Answer any four (04)
1. List any two factors affecting viscosity
 2. Name the method to measure surface tension
 3. What is membrane hydrolysis.
 4. State Gibb's Thompson principle
 5. State the difference between Adsorption and Absorption.
 6. Define: Osmosis and Osmotic pressure
- Q3(A) Explain in detail: Polyacralamide gel electrophoresis (14)
- OR
- Q3(A)i Draw a block diagram of HPLC and state its applications (07)
- Q3(A)ii Write a note on TLC (07)
- Q3(B) Answer any three: (03)
1. Define R_f
 2. What is stationary phase in Paper chromatography
 3. Name one detector used in Gas chromatography.
 4. What is the role of SDS in electrophoresis?
 5. State the full form of TEMED
- Q4(A) Discuss the principle, parts and working of spectrophotometer (14)
- OR
- Q4(A)i Discuss applications of Spectrofluorometer (07)
- Q4(A)ii Discuss the limitations of Lambert- Beer's law (07)
- Q4(B) Answer any three: (03)
1. Name monochromators
 2. What is the use of wavelength selector in colorimeter
 3. What is the role of a detector
 4. State one application of spectrophotometer
 5. State one limitation of colorimeter

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Geology

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[Max. Marks : 70]

Time : 2-30 Hours]

૧. ચર્ચા કરો: (અ) ખનિજોનાં વક્રીભવનાંક માપક એટલે શું? ખનિજોનાં વક્રીભવનાંક માપકની વ્યાખ્યા આપો અને વર્ણન કરો. બેકની કસોટીનું વર્ણન કરો અને અસરો દર્શાવો. (૧૪)
- અથવા
- (અ) (૧) સુક્ષ્મ ઉદમાં યુગ્મતા. (૦૭)
(૨) વિલોપ. (૦૭)
- (બ) ટૂંકા જવાબ આપો (૭ માંથી કોઈ પણ ચાર): (૦૪)
(૧) રંગવિકાર દર્શાવતી બે ખનિજોનાં નામ દર્શાવો.
(૨) દ્વિતીય ક્રમનાં વ્યતિકરણ રંગો દર્શાવતી બે ખનિજોનાં નામ આપો.
(૩) ઝબકારની વ્યાખ્યા આપો.
(૪) રંગવિકારની વ્યાખ્યા આપો.
(૫) દ્વિરંગવિકાર અને ત્રિરંગવિકાર એટલે શું?
(૬) શાં માટે અભિડેન્ડિત કાર્યામાંથી પસાર થતી પ્રકાશપથ ઊંધા શંકુ આકારનો હોય છે?
૨. સમજાવો: (અ) પાચસાઇટ સ્ક્રેટિકનાં અક્ષીય લક્ષણો અને સમતાના તત્ત્વોનું વર્ણન કરો. (૧૪)
- અથવા
- (અ) (૧) ગેલેના પ્રકારનાં સ્વરૂપો. (૦૭)
(૨) એનેટેલ સ્ક્રેટિકનાં સમતાનાં તત્ત્વો. (૦૭)
- (બ) ટૂંકા પ્રશ્નો (૭ માંથી કોઈ પણ ચાર): (૦૪)
(૧) ઝીરકોન સ્ક્રેટિકનો સ્ટીરીઓગ્રાફીક પ્રક્ષેપ દોરો.
(૨) ઝીરકોન પ્રકારનાં અક્ષીય લક્ષણો દર્શાવો.
(૩) ગેલેના પ્રકારનાં સમતાનાં તત્ત્વો આપો.
(૪) ટેટ્રાહેડ્રાઇટ પ્રકારનો સ્ટીરીઓગ્રાફીક પ્રક્ષેપ દોરો.
(૫) બોરેસાઇટ સ્ક્રેટિકનાં અક્ષીય લક્ષણો આપો.
(૬) ટેટ્રાહેડ્રાઇટ પ્રકારનાં બધા સ્વરૂપોનાં નામ આપો.
૩. વર્ણન કરો: (અ) અગ્નિકૃત ખડકોમાં પ્રાપ્તિસ્થિતિ એટલે શું? તેને કઇ રીતે વર્ગીકૃત કરવામાં આવે છે? સિલનું વિગતવાર વર્ણન કરો. (૧૪)
- અથવા
- (અ) (૧) પત્રવાત, નાઇસોઝ અને ક્લિપ્કાયુક્ત સંરચનાઓ. (૦૭)
(૨) સ્તર રચના, પ્રવાહ પ્રસ્તર, પૂરપ્રવાહ પ્રસ્તર અને મુખવિકાસ પ્રદેશ સંરચનાઓ. (૦૭)
- (બ) ટૂંકમાં લખી (પાંચમાંથી કોઈ પણ ત્રણ): (૦૩)
(૧) સંરચનાની વ્યાખ્યા આપો.
(૨) માયરોલીટીક સંરચના એટલે શું?
(૩) ક્રિસ્ટલોબલાસ્ટીક સંરચનાની વ્યાખ્યા આપો.
(૪) વરસાદનાં ટીપા પડવાને કારણે અને પંક કણ નિક્ષેપનાં સુકાવાને કારણે બનતી કણકૃત સંરચનાનાં નામ આપો.
(૫) મેક્યુલીઝ સંરચનાની વ્યાખ્યા આપો.
૪. નોંધ લખો: (અ) કોમીયમ અને એલ્યુમીનીયમ નિક્ષેપોની ખનિજવિદ્યા, પ્રાપ્તિસ્થિતિ અને ઉપયોગો આપો. (૧૪)
- અથવા
- (અ) (૧) એસ્બેસ્ટોસ નિક્ષેપોનું વિતરણ. (૦૭)
(૨) મેંગેનિઝ નિક્ષેપોની ખનિજવિદ્યા અને ઉપયોગો. (૦૭)
- (બ) ટૂંકમાં જવાબ લખી (પાંચમાંથી કોઈ પણ ત્રણ): (૦૩)
(૧) કોમીયમ નિક્ષેપોનું છેલ્લા બે વર્ષનું ઉત્પાદન આપો.
(૨) બોક્સાઇટ નિક્ષેપોનાં ઉપયોગો આપો.
(૩) ભારતમાં કૌસની પ્રાપ્તિસ્થિતિ દર્શાવો.
(૪) એસ્બેસ્ટોસ નિક્ષેપોનાં બે ઉપયોગો બતાવો.
(૫) મેંગેનિઝ નિક્ષેપોનાં પ્રકારોના નામ દર્શાવો.

1. Discuss: (A) What is refractive index of minerals? Define and describe RI of minerals. (14)
Describe Beck's test and its effects.

OR

- (A) (i) Twinning in thin sections. (07)
(ii) Extinction. (07)
- (B) **Write short answers (Any four out of six):** (04)
(i) Name two minerals showing pleochroism.
(ii) Provide names of two minerals showing 2nd order interference colours.
(iii) Define twinkling.
(iv) Define pleochroism.
(v) What is dichroism and trichroism?
(vi) Why passage of light is conoscopic in convergent lens.

2. Explain: (A) Describe axial characters and symmetry elements of pyrite crystal. (14)

OR

- (A) (i) Forms of galena type. (07)
(ii) Symmetry elements of anatase crystal. (07)
- (B) **Short Questions (Any four out of six):** (04)
(i) Draw a stereographic projection of zircon crystal.
(ii) Provide axial characters of zircon type.
(iii) Mention elements of symmetry of galena type.
(iv) Draw a stereographic projection of tetrahedrite type.
(v) Give axial characters of boracite crystal.
(vi) Name all the forms of tetrahedrite type.

3. Describe: (A) What is mode of occurrence of igneous rocks? How it is classified? (14)
Describe sills in details.

OR

- (A) (i) Schistose, gneissose and granulose structures. (07)
(ii) Stratification, cross-stratification, torrential bedding and delta structure. (07)
- (B) **Write in brief (Any three out of five):** (03)
(i) Define structure.
(ii) What is myarolitic structure?
(iii) Define crystalloblastic structure.
(iv) Name sedimentary structures produced by dropping of rain and drying of muddy sediments.
(v) Define maculose structure.

4. Write notes: (A) Provide mineralogy, mode of occurrence and uses of chromium and aluminium deposits. (14)

OR

- (A) (i) Distribution of asbestos deposits. (07)
(ii) Mineralogy and uses of manganese deposits. (07)
- (B) **Write answers in brief (Any three out of five):** (03)
(i) Provide production of chromium deposit for last two years.
(ii) Provide uses of bauxite deposit.
(iii) Give mode of occurrence of diamond deposits of India.
(iv) Mention two uses of asbestos deposits.
(v) Name types of manganese deposits.

B.Sc. (Sem.-3) Examination

CC 202

Environmental Science

March 2019

Time : 2-30 Hours]

[Max. Marks : 70

Que-1 (A) Write a detailed note on ocean of the world and describe their physiography (14)

OR

(A) 1 Write short note on properties of sea water (7)

2 Write note on Tide and Ocean currents (7)

(B) Answer any Four in brief (4)

1. Define Phytoplankton

2. List seasons in India

3. What is Mean Sea Level?

4. What is continental shelf?

5. What is unit to measure salinity of sea water?

6. Name two amphibian animals.

Que-2 (A) Discuss chemistry of fresh water and discuss impurities in drinking water (14)

OR

(A) 1 Explain Hydrological cycle with diagram (7)

2 Write Short note on physical forms of water in cryosphere (7)

(B) Answer any Four in brief (4)

1. Give importance of water cycle

2. Name two biological impurities in fresh water

3. What is hydrosphere?

4. What Labrador current?

5. Name primary producer in sea water

6. What is benthic zone?

Que-3 (A) Describe physicochemical composition of air and impurities within it (14)

OR

(A) 1 Write a note on monsoon seasons in India (7)

2 Explain organic pollutants of Air pollution (7)

(B) Answer any Three in brief (3)

1. Give sources of SPM in air.

2. What is El Nino?

3. What is ENSO?

4. Name industries releasing radioactive pollutant in air.

5. Name two CFC gases.

Que-4 (A) List marine biospheres and describe continental shelf with its importance (14)

OR

(A)1 Write short note on Coral Reefs. (7)

2 Write short note on estuarine biosphere (7)

(B) Answer any Three in brief (3)

1. Name two nuclear power plant site in India.

2. Give scientific name for Corals.

3. What is continental drift?

4. What is Palaeontology?

5. Which river makes the biggest Delta zone?

B.Sc. (Sem.-3) Examination

CC 202

Bio-chemistry

March 2019

Time : 2-30 Hours]

[Max. Marks : 70

- Q1A** Explain in detail the technique of Cell Fractionation to separate Cell Organelles. (14)
- OR**
- Q1A (i)** Discuss the Fluid-Mosaic structure of Plasma membrane. (07)
- (ii)** Discuss the functions of Nucleus. (07)
- Q1B** Answer any four : (04)
1. State any two differences between a Prokaryotic and a Eukaryotic Cell.
 2. What is the role of Peroxisomes.
 3. Name different Polymorphic forms of Lysosomes.
 4. State any two functions of Golgi bodies.
 5. Draw and label the shape of the two subunits of 70S Ribosome.
 6. What is the role of Marker Enzymes?
- Q2 A** Discuss conduction of Nerve impulse and explain Synapse. (14)
- OR**
- Q2A(i)** Discuss the inorganic and organic phase of Bone . (07)
- (ii)** Write a note on Sliding Filament theory. (07)
- Q2B** Answer any four : (04)
1. Give one function of Glial cells.
 2. What is the reflex action??
 3. Name the various types of Muscles.
 4. Name any two factors affecting Bone remodeling.
 5. Name the Muscle proteins.
 6. Give any two functions of Bones.
- Q3A** Discuss the synthesis and physiological action of Thyroid Hormones. (14)
- OR**
- Q3A(i)** Write the structure, dietary sources, deficiency disease and any three functions of Vitamin C. (07)
- (ii)** Name all the B complex Vitamins. Write the coenzyme form of any one of them and state its role. (07)
- Q3B** Answer any three : (03)
1. Define Hormones.
 2. What is Goitre?
 3. Name the Pancreatic Hormones.
 4. Which mineral is present in the structure of Vitamin B₁₂?
 5. Name the Coenzyme form and deficiency disease of Thiamin.

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Q4A What is Blood Pressure? Discuss factors affecting it and its Physiological importance. **(14)**
OR

Q4A(i) Explain Cardiac cycle **(07)**
(ii) Write a note on ECG. **(07)**

Q4B Answer any three : **(03)**

1. Define Heart rate.
2. Name the junctional tissues of the Heart.
3. Name the artery carrying deoxygenated blood.
4. What is Cardiac output?
5. Give one function of Systemic circulation.

B.Sc. (Sem.-3) Examination

CC 201

Computer Science

March 2019

Time : 2-30 Hours]

[Max. Marks : 70

- Q-1 A Write the following.
(i) Explain all types of data structures with detail. (14)

OR

- (i) Explain all types of data types in detail with problem of tower of Hanoi. (14)

- Q-1 B. Short questions(Any four out of six) (4)

1. What is data structure?
2. What is difference between push-pop?
3. What is DFS?
4. What is recursion?
5. What is an array?
6. What is Huffman Coding?

- Q-2 A Write the following.
(i) What is Queue? Explain its all types with algorithms. (14)

OR

- (i) What is linked list? Explain any two type of it with algorithms. (14)

- Q-2 B. MCQ(Any four out of six) (4)

1. What is A Spanning tree?
2. What is a difference between enqueue-dequeue?
3. What is Linear search?
4. List down all sorting algorithms?

5. What is binary search?

6. What is tree traversal?

Q-3 A Write the following.

(i) Explain all types of inheritance with the concept of friend function in detail. (14)

OR

(i) Explain Operator overloading in detail with all types & examples. (14)

Q-3 B. Short questions(Any three out of five) (3)

1. What is reference variable?
2. What is constructor?
3. What is abstract keyword?
4. ANSI stands for.....
5. List down all access specifiers.

Q-4 A Write the following.

(i) Explain all tokens of C++ in detail with their all subtypes. (14)

OR

(i) Explain virtual function in detail with all types of polymorphism. (14)

Q-4 B. Short questions(Any three out of five) (3)

1. What is difference between cin and cout function.
2. List down all categories of data type.
3. What is inline function?
4. What is new keyword?
5. Which is type caste operator in C++?



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Candidate's Seat No : _____

B.Sc. (Sem.-3) Examination

CC 202

Computer Science

March 2019

Time : 2-30 Hours]

[Max. Marks : 70

70

Q-1 A Write the following.

(i) Explain .NET framework with it's components and benefits. (14)

OR

(i) Explain Memory management in detail. Also explain the garbage collection. (14)

Q-1 B. Short questions(Any four out of six) (4)

1.MDI stands for...

2.What is .net?

3.ADO stands for...

4.CLR stands for...

5 What is console class?

6.What is abstraction?

Q-2 A Write the following.

(i) What is Array? Explain types of array with example and explain the operators in detail. (14)

OR

(i) Explain windows control in detail (14)

Q-2 B. MCQ(Any four out of six) (4)

1.JIT stands for..

2.MSIL stands for...

3.What is metadata?

4.What is function overloading?

P.T.O

5. What is polymorphism?

6. List out any four properties of textbox.

Q-3 A Write the following.

(i) What is SDI and MDI? Explain with example. Also give the steps for creating MDI form. (14)

OR

(i) What is Constructor & Destructor. Explain with types. Also give the examples. (14)

Q-3 B. Short questions (Any three out of five) (3)

1. What is difference between VB and VB.net?
2. What is namespace?
3. Which namespace are used for accessing the data?
4. What are nested classes?
5. What is the difference between DataReader and DataSet?

Q-4 A Write the following.

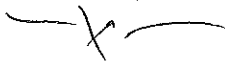
(i) What is ADO.net? Explain its Components in detail. Also explain connection object and command object. (14)

OR

(i) Explain OOPs components in detail with example. (14)

Q-4 B. Short questions (Any three out of five) (3)

1. CTS stands for...
2. How many languages are supported by .net?
3. How to create a constant in VB.NET?
4. What is the use of DIM statement in VB.NET?
5. IDE stands for...



B.Sc. (Sem.-3) Examination
CC 202 Biotechnology
(Methods in Biotechnology)

Time : 2-30 Hours]

March 2019

[Max. Marks : 70

- Instructions :** (1) All question are Compulsory.
 (2) Start each question from a new page.
 (3) Figures to the right indicate Full Marks.

Que-1 (A) Describe principle an technique for centrifugation giving its applications 14
 OR

1. Write note on principle and applications of partition chromatography. 7
2. Explain factors affecting sedimentation and give applications of precipitation technique. 7

(B) Answer any Four in brief 4

1. Define Electrophoretic mobility.
2. What is Diffraction?
3. Draw light path in spectroscopy
4. Name material used to make filters
5. What is Swedberg unit?
6. What is Molecular sieving?

Que-2 (A) Discuss principle and applications of bioassay with its advantages over chemical assay 14
 OR

1. Explain ELISA technique with diagram. 7
2. Write a note on Fluorescence spectroscopy 7

(B) Answer any Four in brief 4

1. Name two Reporter genes
2. Give two uses of Radioactive isotope in biology laboratory
3. Give use of nutritional mutant
4. What is Isoelectric focussing?
5. Write Stoke's law
6. What is use of immunofluorescence technique?

Que-3 (A) Explain properties of enzyme and features of thermal cycler machine used in PCR. 14
 OR

1. List types of blotting techniques and explain Western blotting in detail 7
2. Explain principle and uses of Nucleic acid hybridization technique. 7

(B) Answer any Three in brief 3

1. What is T_m value of DNA?
2. Which molecules are analysed by Southern blot technique?
3. Why study of gene expression is important?
4. What is Microarray technique?
5. What is RT PCR?

Que-4 (A) Describe various methods used for cultivation of Bacterial virus. 14
 OR

1. Write a note on virus cultivation in Chick embryo. 7
2. Explain screening of organic acid producing microbes from nature 7

(B) Answer any Three in brief 3

1. Which method is used to preserve fungal cultures?
2. Name two desirable characteristics of industrial strains
3. What is CFU?
4. What is cytopathic effect?
5. What is use of animal virus cultivation technique?

