DB-003-001638

B. Sc. (Sem. VI) (CBCS) Examination

April / May – 2015

603 : Biochem., Endocrino, CAN Biology Paper - III

Faculty Code : 003

Subject Code : 001638

Time : $2\frac{1}{2}$ Hours] [Total Marks : **70**

SECTION - I

1 Select the correct answer for the questions from the given choice : **20**

(1) Bodily chemical messengers that send messages from one set of cells to another, affecting changes :

(A) alveoli

(B) nephrons

(C) hormones

(D) none of the above

(2) Vasopressin is secreted by :

(A) adenohypophysis

(B) neurohypophysis

(C) zona glomerulosa

(D) pars intermedia

(3) _____ links the nervous system to the endocrine system via the pituitary gland.

(A) thalamus

(B) hypothalamus

(C) pituitary

(D) pancreas

(4) Estrogen is mostly secreted by _____.

(A) corpus luteum

(B) theca interna

(C) leydig cells

(D) theca externa

(5) Aldosterone is mostly secreted by _____.

(A) zona glomerulosa and zona reticularis

(B) zona reticularis

(C) zona fasciculata and zona reticularis

(D) zona glomerulosa

(6) 80% of the body phosphates is in the _____.

(A) kidney (B) liver

(C) bone (D) heart

(7) _____ is an example of the steroid hormone.

(A) Vit. D

(B) Cholecalciferol

(C) 25-Hydroxycholecalciferol

(D) 1, 25-dihydroxycholecalciferol

(8) Receptors for estrogen and thyroid are located _____.

(A) on the cell membrane

(B) in the cytoplasm

(C) in the nucleus

(D) outside the cell

(9) Cancer is caused by :

(A) Uncontrolled meiosis

(B) Uncontrolled mitosis

(C) Rupturing the cells

(D) apoptosis

(10) HBV is usually responsible for _____ carcinoma.

(A) Hepatocellular

(B) Skin

(C) Cervical

(D) All of (A), (B) and (C)

(11) Which is involved in the prevention of cancer ?

(A) Anti oncogenes

(B) UV radiation

(C) Chemical carcinogen

(D) All of (A), (B) and (C)

(12) Which of the following can contribute to development of cancers ?

(A) Chemicals in food

(B) UV radiation

(C) HIV virus

(D) All of (A), (B) and (C)

(13) Which of the following is the example of derived database for amino acid sequence ?

(A) ClusTr (B) PRINTS

(C) COGS (D) All of above

(14) Which one is the correct sequence for collection of data ?

[Hint : Arrange the following events in ascending order]

(1) Sequencing (DNA, proteins)

(2) Computer storage of sequences

(3) Development of sequence formats

(4) Submission of sequences to the databases

(A) (1), (2), (3), (4)

(B) (4), (3), (2), (1)

(C) (1), (4), (2), (3)

(D) (1), (3), (4), (2)

(15) The database which allows the study of a single organism is classified as...

(A) Primary database

(B) Composite database

(C) Derived database

(D) All of above

(16) The first biological database developed by Dayhoff is :

(A) PIR

(B) EMBL

(C) PDB

(D) PROSITE

(17) The procedure of aligning many sequence simultaneously is called :

(A) Multiple sequence alignment

(B) Global alignment

(C) Pair wise alignment

(D) Local alignment

(18) 'FASTA' was published by :

(A) Joseph Sambrook (B) Pearson and Lipman

(C) Sanger (D) Altschul et all

(19) GenBasnk, the nucleic acid sequence database is maintained by :

(A) Brookhaven laboratory

(B) EMBL

(C) DDBJ

(D) NCBI

(20) Bioinformatics involves following field/s.

(A) Biochemistry

(B) Statistics

(C) Applied mathematics

(D) All of the above

SECTION - II

2 (a) Answer any three of the following questions : **2×3=6**

(1) What do you understand by preproinsulin ?

(2) Give the role of aldosterone for sodium reabsorption.

(3) Define carcinogens.

(4) What is knowledge base database ?

(5) Define protein family and give one example of it.

(6) What do you mean by a neoplasm ?

(b) Answer any three of the following questions : **3×3=9**

(1) Give various agents and factors responsible for control of hormone action.

(2) Write the major symptoms of diabetes.

(3) Classify the cancer on the basis of its origin.

(4) Explain object oriented database.

(5) Write detail about building and submission of data in GenBank.

(6) Give some application of bioinformatics in the field of medicines.

(c) Answer any two of the following questions : **5×2=10**

(1) Describe the mechanism of action of a typical peptide hormone.

(2) With well labelled diagram, explain about spermatogenesis.

(3) Write the functional role of DNA damage repair mechanism with respect to cancer.

(4) Give some applications of database management system.

(5) Explain in brief about Protein databank.

3 (a) Answer any three of the following questions : **2×3=6**

(1) What do you understand by adenyl cyclase ?

(2) Give the fundamental action of CTH from pituitary.

(3) Write the role of proto oncogenes.

(4) Which type of problems will you face to handle a new unknown DNA sequence ?

(5) Give the difference between local and global alignment.

(6) With well labelled diagram explain anatomy of thyroid gland.

(b) Answer any three of the following questions : **3×3=9**

(1) Comment : Prolonged cortisol therapy causes osteoporosis in the vertebra.

(2) Draw a well labelled diagram of microscopic view of thyroid gland.

(3) Write a note on metastasis.

(4) Explain flat file model of database with advantage and limitation.

(5) Write in short about TrEMBL.

(6) Write the difference between PubMed, PubMed Central and MEDLINE.

(c) Answer any two of the following questions : **5×2=10**

(1) Illustrate the synthesis of 1,25 DHCC and its role in calcium absorption.

(2) Discuss about the functional anatomy of adrenal gland and its applied physiology.

(3) Write detailed note on benign tumor.

(4) Explain primary database in detail with examples.

(5) Explain in brief : sequence similarity search tools.
