Name : Aiswarya

Fourth Semester B.Sc. Degree Examination, March 2020

Career Related First Degree Programme under CBCSS

Group — 2(a) Botany and Biotechnology

Core Course VI- BB 1441: HORTICULTURE MUSHROOM CULTIVATION AND MARKETING

(2014 Admn Onwards)

Time : 3 Hours Max. Marks : 80

SECTION – A

Answer **all** the questions in a word or **one or two** sentences. Each question carries **1** mark.

1. What are hedges?
2. Define a dikaryon.
3. What is scion?
4. Give the binomial of Oyster mushroom.
5. What is canning?
6. Name a flower inducing hormone.

7. Define hydroponics.

8. What is a spawn?

9. List any two poisonous mushrooms.

10. What is the use of vermiculite in horticulture?

(10 × 1 = 10 Marks)

SECTION – B

Answer **any eight** questions. Each question carries **2** marks.

11. Explain the modes of indoor garden.

12. Discuss the medicinal importance of mushrooms.

13. What is drip irrigation?

14. Differentiate between air layering and ground layering.

15. Why mushrooms are called "vegetable meat"?

16. What is topiary?

17. State the significance of conservatory?

18. Explain the morphology of *Pleurotus.*

19. What is bonsai? What is its importance?

20. Give a note on biofertilizers.

21. Distinguish blanching and steeping.

22. What are foliar sprays?

(8 × 2 = 16 Marks)

SECTION – C

Answer **any six** questions. Each question carries **4** marks.

23. What are fungicides? Explain with examples.

24. Explain the common pests affecting mushrooms and their control.

25. Mention the role of growth regulators in horticulture.

26. Give a note on garden tools and implements.

27. What is vermicompost? Explain its preparation.

28. Comment on storage of mushrooms on a commercial scale.

29. What is a lawn? Add a note on lawn preparation methods.

30. Explain the international trade and marketing status of mushroom.

31. Write the preparation of potting mixture.

(6 × 4 = 24 Marks)

SECTION – D

Answer **any two** questions. Each question carries **15** marks.

32. Explain various types of floral arrangements in horticulture.

33. With neat labelled diagrams, describe vegetative propagation by budding and grafting.

34. Describe the polythene bag cultivation method of paddy straw mushroom?

35. Discuss the methods involved in preservation of fruits and vegetables.

(2 × 15 = 30 Marks)

Name : .....Aiswarya.....

Third Semester B.Sc. Degree Examination, October 2019

Career Related First Degree Programme under CBCSS

Group 2 (a) Botany and Biotechnology

Vocational Course IV

BB 1371 – PROTISTA AND ANIMAL DIVERSITY

(2013 Admission Onwards)

Time : 3 Hours Max. Marks : 80

SECTION – A

Answer **all** questions in a **word** or **one** or **two** sentences. **Each** question carries **1** mark.

Draw diagrams only if specified in the questions.

1. Write down the scientific name of filarial worm.
2. Name the larva of Ascidia.
3. What do you mean by trignathic?
4. What is the function of marsupium?
5. Who proposed the three kingdom classification?
6. What is Pectoralis major?
7. Name an amphibian that shows parental care.
8. What is the function of pectoral girdle?

P.T.O.

9. Which are the cycles of Plasmodium that occurs within man?

10. What is a digenetic parasite?

(10 × 1 = 10 Marks)

SECTION – B

Answer any **eight** questions. **Each** question carries **2** mark. Answer not to exceed **one** paragraph.

11. Comment on brittle star.

12. Mention the economic importance of dentalium.

13. What is the difference between Protostomia and Deuterostomia?

14. Mention the salient features of Echidna.

15. Write a short note on Hirudinaria.

16. Comment on the damages caused by *Leptocorisa acuta*.

17. How does the bite of Russel's viper affect the victim?

18. Comment on the salient features of Ammocoetus larva.

19. What is Strobila?

20. Write down the salient features of Class Calcarea.

21. Define Neoteny.

22. Comment on the symbiotic relation of Phylum Parabasalia.

(8 × 2 = 16 Marks)

SECTION – C

Answer any **six** of the following (Answer not to exceed **120** words).**Each** question carries **4** marks.

23. Comment on the adaptations of aquatic mammals.

24. Mention the salient features of Urochordata and Cephalochordata?

25. Distinguish between Calotes and Draco.

26. Write an account on the pest attack and its control measures in paddy.

27. Briefly explain the life history of *Taenia solium.*

28. Write down the salient features of Phylum Onychophora with example.

29. Comment on the different appendages of Limulus.

30. Mention the salient features of Subphylum Mandibulata and its classffication?

31. Explain retrogressive metamorphosis with an example.

(6 × 4 = 24 Marks)

SECTION – D

Answer any **two** questions (Not more than **three** pages). **Each** question carries **15** marks.

32. Explain the digestive system and nervous system of Cockroach with suitable diagrams.

33. Write a brief description on the Kingdom Protista and example phyla.

34. Explain the characteristic features of Phylum Chordata and its classification with suitable examples.

35. Briefly explain the flight adaptations of birds.

(2 × 15 = 30 Marks)

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Reg. No. : 24718132019

Name : Aiswarya

Third Semester B.Sc. Degree Examination, October 2019

Career Related First Degree Programme Under CBCSS

2(a) – Botany and Biotechnology

Complementary Course: BB 1331

PHYSIOLOGICAL ASPECTS IN BIOCHEMISTRY

(2014 Admission Onwards)

Time : 3 Hours Max. Marks : 80

SECTION – I

Answer **all** questions

1. What is the functions of RBC?
2. How Iron is transported?
3. Name the blood forming organs.
4. What is the other name of Viamin K.
5. What is oxidation? How it is useful for detoxification?
6. What is Bohr effect?
7. Name the buffers present in blood.
8. What is NIDM?

P.T.O.

9. State the functions of cortisol.

10. Name peptide hormones.

(10 × 1 = 10 Marks)

SECTION – II

Answer any **eight** questions.

11. Write down the constituents of blood.

12. Write about erythropoeisis.

13. Write the functions of vitamin D.

14. What are the main constituents of urine?

15. What is the functions of carbonic anhydrase?

16. Define chloride shift.

17. Classify the types of jaundice.

18. What is the importance of BMI?

19. What is conjugation reactions? Give two examples?

20. What is the normal levels of blood glucose?

21. State the functions of GH.

22. How T_3 is differ from T_4?

(8 × 2 = 16 Marks)

SECTION – III

Answer any **six** questions.

23. Write the structure and functions of Hemoglobin.

24. Write about the absorption and metabolism of Iron.

25. Discuss the Detoxification process by oxidation and hydrolysis.

26. Write a note on obesity.

27. Explain the partial pressure of gases.

28. Write about acid base im balance.

29. Write the functions of thyroxine.

30. What are all the functions of estradiol?

31. Differentiate adrenalin and nor adrenalin with their functions.

(6 × 4 = 24 Marks)

SECTION – IV

Answer any **two** questions.

32. Write the chemical nature, sources, functions and deficiency of fat soluble vitamins.

33. Discuss about Liver function tests.

34. Write about hyper colesterolenia and Atherosclerosis.

35. Explain the transport and exchange of gases.

(2 × 15 = 30 Marks)

SECTION – B

Short answer questions. Not exceed three pages. Answer any six. (6×5=30 Marks)

11. Define Digital formula. Give any three differences between plant and animal.

12. What are Heart sounds ?

13. Differentiate between Skeletal and Smooth Muscles.

14. Comment on Human urine.

15. Explain the physiology of Photosynthesis.

16. Comment on Cranial meninges.

17. What is Arteriosclerosis ? Give its symptoms.

18. Explain Insulin glucose regulation.

19. How is nerve impulse transmitted across chemical synapse ?

20. Comment on the composition of bile.

21. Explain the division of vertebral column of man.

22. Compare Blood and Lymph.

SECTION – C

Short Essay. Not to exceed 150 words. Answer any six. (6×4=24 Marks)

23. Describe the functional units of Muscle contraction.

24. Comment on Haemoglobin and Erythrocytes.

25. Comment on the structural and functional units of Kidney.

26. What is uremia ? Comment on Haemodialysis.

27. Classify neurons on the basis of the dendrons and functions. Draw a neat diagram to with.

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SECTION – C

III. Answer **any 5** questions **(2×5=10 Weightage)**

29) What is uterine cycle ? Explain.

30) Write brief notes on prostagladins.

31) Write briefly any two excretory products of body.

32) Explain dialysis.

33) Explain the process of osmoregulation in fresh water organisms.

34) What are the characteristics features of a closed circulatory system ?

35) Explain the structure of a neuron.

36) What are the abnormal constituents of urine ?

SECTION – D

IV. Answer **any two** of the following (Not more than **three** pages) : **(4×2=8 Weightage)**

37) Write an essay on gametogenesis.

38) Write an essay on the mechanism of transmission of nerve impulses.

39) Give an account on the structure of human heart.

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29) Explain feedback mechanism and explain how it functions in regulating the concentration of hormones in blood.

30) With the help of a diagram describe the structure of spermatozoa.

31) Describe the stages of Oogenesis. **(4x6=24 Marks)**

SECTION – D

IV. Answer **any 2** questions. **Each** question carries **15** marks. (**Not** more than **3** pages).

32) Describe the ultra structure of muscle fiber with suitable diagrams.

33) With the help of a diagram, describe the nervous system of prawn.

34) Write an essay on the mechanism of urine formation in man.

35) Describe the catabolism of glucose. **(2x15=30 Marks)**

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(Pages : 3)

Reg. No. : ...

Name : ...

7119

Third Semester B.Sc. Degree Examination, December 2013
(Career Related First Degree Programme under CBCSS)
Group 2 (a) : Botany and Biotechnology
Vocational Course V – BB 1372 : ANIMAL PHYSIOLOGY AND ANATOMY

Time : 3 Hours

Max. Weight : 30

SECTION – A

I Answer **all** questions. (1×4=4 Weightage)

A) Choose the correct answer :

1) Which of the following is a lipase ?
   a) Elastase
   b) Peptidase
   c) Amylase
   d) Esterase

2) Normal proportion of monocytes in blood is
   a) 20-40%
   b) 35-40%
   c) 2-8%
   d) 0.5-1%

3) Haemocoel is the characteristic of
   a) Frog
   b) Cockroach
   c) Earthworm
   d) Sardine

4) Glomerulus is a part of
   a) Nervous system
   b) Reproductive system
   c) Circulatory system
   d) Excretory system

B) Answer in a **word** or **sentence** :

5) Define neurogenic muscles.

6) Expand ADH.

7) Expand EEG.

8) Name the protein present in bones.

P.T.O.

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26. Enumerate the functions of Liver.

27. Classify animals on the basis of its excretory products. Give example for each.

28. Briefly explain morphogenetic movements during Gastrulation.

29. Differentiate spermatogenesis from oogenesis.

30. Describe the role of hormones in regulation of blood glucose level.

31. Explain menstrual cycle.

SECTION – D

Long essay. Answer **any two** : **(2×15=30 Marks)**

32. Describe the structure and functions of human skin.

33. Explain the structure of neuron and synapse. Comment on synaptic transmission.

34. Describe the physiology of respiratory gas transportation in man. Add a note on mechanism of respiration.

35. Describe the cytophysiology of human kidney.

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(Pages : 3) D – 3170

Reg. No. : 17617502

Name : Rajeeta Raj. E

Third Semester B.Sc. Degree Examination, December 2017
(Career Related First Degree Programme under CBCSS)
Group 2(a) : Botany and Biotechnology
Vocational Course – V
BB 1372 – ANIMAL PHYSIOLOGY AND ANATOMY
(2013 Admission Onwards)

Time : 3 Hours

Max. Marks : 80

SECTION – A

Answer **all** the questions in a word or **one** or **two** sentences. **(10×1=10 Marks)**

1. What is Neuroglia cell ? Mention it functions.
2. Name enzyme producing cells of Gastric gland.
3. What is Pace maker ?
4. What is node of Ranvier ? What is the function ?
5. What are external intercostals ? Mention its function.
6. Define Osmoregulation.
7. Mention the role of Enterokinase in digestion. Where it is produced ?
8. What is Foramen of magnum ? Mention its function.
9. Name two female Sex hormones.
10. What is Cretinism ?

P.T.O.

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SECTION – C

III. Answer **any 5** questions. (2×5=10 Weightage)

29) Explain the various mechanisms involved in the absorption of digested food.

30) Give a comparative account of respiratory pigments.

31) Give the major differences between an open circulatory system and closed circulatory system.

32) Explain cardiac cycle.

33) What are the major respiratory organs of invertebrates ?

34) List out the functions of lymphatic system.

35) Give an account of the excretory products of animals, special reference to nitrogenous.

36) Explain the structure of human sperm.

SECTION – D

IV. Answer **any two** of the following (**not** more than three pages). (4×2=8 Weightage)

37) Give a detailed structure of human heart. Explain the Functioning.

38) Explain the structure of a neuron and the mechanism of nerve impulse transmission.

39) Explain the types of reproduction found among invertebrates **and** vertebrates.

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SECTION – C

III. Answer **any 5** questions : **(2×5=10 Weightage)**

29) Explain the process of protein digestion in humans, mentioning the end products.

30) Describe the structure of human respiratory system.

31) Discuss the relationship between heart beat, pulse and heart sounds.

32) What do you understand by action potential ? How it is generated ?

33) What are the major excretory organs of invertebrates ? Explain with examples.

34) With the help of a diagram describe the structure of pectoral girdle of man.

35) Explain the major functions of skin.

36) Describe the metabolism of glucose.

SECTION – D

IV. Answer **any 2** of the following (**Not** more than **three** pages) : **(4×2=8 Weightage)**

37) Write an essay on physiological process of urine formation.

38) With help of diagram describe the nervous system of cockroach.

39) Elaborate the hormonal control of menstrual cycle.

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(Pages : 3)

Reg. No. : .....

Name : .....

7094

Third Semester B.Sc. Degree Examination, November 2012
(Career Related First Degree Programme Under CBCSS)
Group 2 (a) : BOTANY AND BIOTECHNOLOGY
Vocational Course V – BB 1372 : Animal Physiology and Anatomy

Time: 3 Hours

Max. Weight: 30

SECTION – A

I. Answer **all** questions :

(1x4=4 Weightage)

A) Choose the correct answer :

1) The blood feeding habit is called.
   a) Insectivory
   b) Omnivory
   c) Sanguivory
   d) Granivory

2) Which of the following is a protease ?
   a) Maltase
   b) Peptidase
   c) Chitinase
   d) Lactase

3) Scurvy is due to the deficiency of
   a) Vitamin – C
   b) Vitamin – D
   c) Vitamin – A
   d) Vitamin – E

4) Insulin is produced by which gland
   a) Pituitary
   b) Pancreas
   c) Liver
   d) Thyroid

B) Answer in a word on sentence :

5) Define trachycardia.

6) Define haemocoel

7) What is arteriosclerosis ?

8) What are purkinji fibers ?

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Reg. No. : .....

Name : .....

Third Semester B.Sc. Degree Examination, December 2013
(Career Related First Degree Programme under CBCSS)
Group 2 (a) : Botany and Biotechnology
Vocational Course V – BB 1372 : ANIMAL PHYSIOLOGY AND ANATOMY

Time : 3 Hours Max. Marks : 80

SECTION – A

I. Answer **all** questions. (8 × 1 = 8 Weightage)

A) Choose the correct answer :

1) Which of the following is a lipase ?
   a) Diastase b) Peptidase
   c) Amylase d) Esterase

2) Normal proportion of monocytes in blood is
   a) 20-40% b) 35-40%
   c) 2-8% d) 0.5-1%

3) Haemocoel is the characteristic of
   a) Frog b) Cockroach
   c) Earthworm d) Sardine

4) Glomerulus is a part of
   a) Nervous system b) Reproductive system
   c) Circulatory system d) Excretory system

B) Answer in a **word** or **sentence** :

5) Define neurogenic muscles.

6) Expand ADH.

7) Expand EEG.

8) Name the protein present in bones.

P.T.O.

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SECTION – B

Short answer questions. **Not** exceed in **one** paragraph. Answer **eight** : (8x2=16 Marks)

11. Distinguish between Tissue and Organ.

12. Comment on excretory structures of Invertebrate animals.

13. Differentiate between Rugae and Villi.

14. Comment on Epithelial tissue.

15. Explain the dental formula of adult man.

16. Comment on Muscle proteins.

17. Distinguish between exocrine and endocrine glands.

18. Which hormone is responsible for following disorders :
    a) Diabetes insipidus
    b) Parathyroid tetany
    c) Addison's disease
    d) Acromegaly.

19. Trace in order enzymes acting on protein and list the end products in digestion.

20. Comment on the composition of Plasma.

21. Differentiate between Glycogenesis and Glycogenolysis.

22. Classify hormones on the basis of its chemical nature.

SECTION – C

Short essay. **Not** to exceed **120** words. Answer **any six** : (6x4=24 Marks)

23. Give an account of vertebral column and ribs of human body.

24. Briefly describe the Adrenal gland hormones.

25. Comment on blood groups in man.

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C) Fill in the blanks :

9) Voiding of abnormally large volume of urine by inhibiting renal re-absorptio is called _____

10) _____ is a milk coagulating enzyme.

11) Hormone _____ stimulate gastric secretion and induces contraction of smooth muscles of the intestine.

12) Partial oxidation of fuel molecules in the absence of molecular oxygen is called _____

D) State whether **true** or **false** :

13) Emphysema is a disease affecting the lungs.

14) Red muscle fibers are also called slow muscle fiberos.

15) Human nervous system consists of nearly 10^{11} neurons.

16) MRI scanning completely avoid ionizing radiations.

SECTION – B

II. Answer **any eight** questions (giving **four** major points) : (1×8=8 Weigh

17) Name any four hormones secreated by pituitorygland.

18) What is a vital stain ? Name any two vital stains.

19) What are the functions of placenta ?

20) What is a synapse ?

21) Distinguish between isogomy and oogamy.

22) Define 'amniocentesis'.

23) What are lacteals ? Mention its function.

24) State ureotelism with one example.

25) Name two water soluble vitamins.

26) Mention two intestinal glands.

27) Mention two diseases transmitted through blood transfusion.

28) What are the formed elements in blood ?

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(Pages : 3) **B – 3785**

Reg. No. : .....

Name : .....

Third Semester B.Sc. Degree Examination, December 2016

Career Related First Degree Programme under CBCSS

Group 2(a)-BOTANY AND BIOTECHNOLOGY

Vocational Course – V

BB 1372 : Animal Physiology and Anatomy

(2013 Admission Onwards)

Time : 3 Hours Max. Marks : 80

SECTION – A

Answer **all** the questions in **a word** or **one** or **two** sentences : **(10×1=10 Marks)**

1. What is meant by Cardiac frequency ?
2. Name the parts of small intestine in human.
3. What is Morula ?
4. What is Corpus luteum ?
5. Name the bones of Pectoral girdle in man.
6. How does Carboxyhaemoglobin form ?
7. Mention the functions of Thrombocytes.
8. What is Melatonin ? Mention its function.
9. Name two Thyroid hormones.
10. What is Nissil body ? Mention its function.

P.T.O.

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P I I B

(3) Fill in the blanks :

(i) Blood pressure is measured by _____

(ii) The presence of protein in the final urine is _____

(iii) _____ is the process of formation of urine.

(iv) Thyroxine _____

(v) Hormone _____ initiates the onset of sexual cycle and stimulate contra
of mammary glands to eject milk.

(4) Write whether true or false :

(i) Dendrites transmit impulses away from cyton.

(ii) During change size of the cells decreases.

(iii) Placenta in human beings is formed by chorion.

(iv) Pancreas is a holocrine gland.

SECTION – II

II. Answer any eight questions (giving four major points) (1x8=8 Weightage

(7) Explain mitosis cycle.

(8) Write brief notes on erythropoiesis.

(9) Give account on WHO.

(10) Define nephritis.

(11) What is Graffian Follicle ?

(12) Mention the functions pineal gland.

(13) What are neurotransmitters ? Give examples.

(14) Describe pulmonary circulation.

(15) Define renal hypertension.

(16) Name the hormones secreted by ovary.

(17) Write any two differences between sympathetic and parasympathetic

(18) Write a note on voluntary and involuntary muscles.

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32. Briefly explain the basic features of embryogenesis in metazoans.

33. Explain the process of carbon dioxide transportation from cells to lungs.

34. Describe the Feedback mechanism.

35. Describe asexual reproduction in animals.

SECTION – D

(2×15=30 Marks)

Long Essay. Answer **any two**

36. Describe hormones produced by hypophysis and epiphysis and its functions.

37. Explain the structure and working of human heart with the help of a diagram.

38. Describe Gametogenesis. Comment on the structure of sperm and ovum.

39. Describe the different kinds of connective tissues in Human body.

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13) Which are the different types of heterotrophic nutrition ?

14) Mention any four major functions of Liver.

15) What are villi ? What is their significance ?

16) Explain the difference between closed and open circulatory system.

17) Explain why SA node is regarded as the pacemaker of heart.

18) Explain glycogenolysis.

19) What are cross bridges ? Mention their role in muscle contraction.

20) Point out the hormones secreted by adenohypophysis.

21) Explain why adrenaline is considered as an Emergency hormone.

22) Explain how the level of glucose is maintained in blood. **(2x8=16 Marks)**

SECTION – C

III. Answer **any 6** questions. **Each** question carries **4** marks. Answer **not** to exceed **120** words.

23) What is a tissue ? Give an account of the supporting tissue.

24) Describe how proteins are digested and absorbed in man.

25) Explain the process of carbon dioxide transport.

26) Give an account of systemic, pulmonary and portal circulation in man.

27) Describe the different kinds of human blood corpuscles mentioning their major function.

28) Explain the structure of pectoral girdle of man.

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(Pages : 3)

Reg. No. : 2A1131220004

6735

Name : Anju Madhu

Third Semester B.Sc. Degree Examination, November 2014
(Career Related First Degree Programme under CBCSS)
Group 2(a) : BOTANY AND BIOTECHNOLOGY
Vocational Course – V
BB 1372 : Animal Physiology and Anatomy
(2013 Admission)

Time : 3 Hours

Max. Marks : 80

SECTION – A

I. Answer **all** questions in a **word** or **one** or **two** sentences. **Each** question carries **1** mark.

1) What are mast cells ?

2) Name the enzymes present in gastric juice.

3) What do you mean by dead air ?

4) Name the valves of heart responsible for the heart sounds.

5) Define ureotelism. Give example.

6) What do you mean by T-tubule system ?

7) Mention the parts of midbrain.

8) What is spermiogenesis ?

9) Mention the endocrine secretions of neurohypophysis.

10) What is a coccyx ? (1×10=10 Marks)

SECTION – B

II. Answer **any 8** questions. **Each** question carries **2** marks. Answer **not** to exceed **one** paragraph.

11) Distinguish between Tendon and Ligament.

12) Differentiate between striated and nonstriated muscle.

P.T.O.

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7. Define P/O ratio.

8. What are uncouplers of oxidative phosphorylation?

9. What is the wobble position of a codon?

10. What is meant by a primary transcript?

(10 × 1 = 10 Marks)

SECTION – II

(Short Answer Questions- not to exceed one paragraph)

Answer any **eight** questions.

11. Describe the extend up to which carbohydrates are digested in the mouth.

12. List out the irreversible reactions of glycolysis.

13. Compare mitochondrial and peroxisomal β oxidation of fatty acids.

14. What are micelles? Describe the role of micelle formation in the digestion of lipids.

15. Name the proteolytic enzymes of the GI tract. Why they do not cause any proteolytic damage to the cells of their formation?

16. Compare the absorption of D and L amino acids in the small intestine.

17. Differentiate between oxidative and substrate level phosphorylations.

18. Why ATP is considered as a high energy compound? Explain with the help of its structure.

19. Give two examples for inhibitors of electron transport chain. How do they act?

20. How do you explain degeneracy of genetic code?

21. Define start and stop codons.

22. What are promoters? Where are they located?

(8 × 2 = 16 Marks)

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SECTION – III

(Short Essay - not to exceed 120 words)

Answer any **six** questions.

23. Describe cori cycle and explain its significance.

24. How glycogen metabolism is allosterically regulated?

25. What is meant by emulsification? How emulsifiers play a major role in the digestion and absorption of lipids?

26. Describe the physiological functions of phospholipids.

27. Give an account of urea cycle.

28. Explain why the process of ATP production by electron transport in mitochondrial membrane is called oxidative phosphorylation.

29. Explain the role of high energy phosphate groups in bioenergetics.

30. Give an account of the arrangement of DNA in chromosomes.

31. Give an account of the structure and functions of tRNA.

(6 × 4 = 24 Marks)

SECTION –IV

(Long Essay)

Answer any **two** questions.

32. Give an account of the digestion and absorption of carbohydrates.

33. Explain the biosynthesis of cholesterol and bile acids. Describe their functions.

34. Explain the process of mitochondrial electron transport and ATP production.

35. Describe the major events involved in prokaryotic transcription.

(2 × 15 = 30 Marks)

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Reg. No. : .....

Name : .....

Fourth Semester B.Sc. Degree Examination, March 2020

Career Related First Degree Programme under CBCSS

Group 2(a) — Botany and Biotechnology

Vocational Course — BB 1471 : MOLECULAR BIOLOGY

(2015 Admission onwards)

Time : 3 Hours Max. Marks : 80

SECTION – A

Answer **all** the questions in a **word** or **1** or **2** sentences. **Each** question carries **1** mark.

1. Name the Indian-born scientist who is involved in the discovery of the genetic code.
2. Which enzyme is involved in the joining of DNA fragments?
3. Define exons.
4. What should be the complementary strand of 3' ATGGCTTGA 5'?
5. Which RNA is responsible for bringing amino acids to ribosome during translation?
6. Give one triplet codon which codes for the amino acid Glycine.
7. Nucleosome consists of _____.
8. Which is the starting amino acid in eukaryotic translation?
9. What is the size of human mitochondrial genome?
10. Give an example of a repressible operon.

(10 × 1 = 10 Marks)

P.T.O.

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(Pages : 3) J – 1328

Reg. No. : 24181320U.....

Name : ..Nandhana.B.....

Fourth Semester B.Sc. Degree Examination, March 2020

Career Related First Degree Programme Under CBCSS

2(a) – Botany and Biotechnology

Complementary Course

BB 1431 : METABOLISM

(2014 Admission onwards)

Time : 3 Hours Max. Marks : 80

SECTION – I

(Very Short Answer Type- maximum two sentences)

Answer **all** questions.

1. What is meant by 'energy investment phase' of glycolytic pathway?

2. Name a hormone that acts as an activator of glycogen phosphorylase.

3. Name an ω 3 fatty acid which is essential to humans.

4. How many ATP molecules are produced by the complete oxidation of one molecule of palmitic acid?

5. Name a protein digesting enzyme found in the stomach of infants and children, but absent in adults.

6. Which is the reaction catalysed by alanine amino transferase?

P.T.O.

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SECTION – B

Answer **any eight** questions. **Each** question carries **2** marks. (Answer not to exceed **1** paragraph).

11. What is the importance of Hershey-Chase experiment?

12. Which are the major components of eukaryotic transcription -initiation complex?

13. How the enhancer is different from a promoter?

14. What is the importance of the post-transcriptional modification of mRNAs?

15. List out any three post-translational modifications.

16. Briefly explain the Wobble hypothesis.

17. What is the major difference between a *lac* and *trp* operon?

18. Comment of the importance of promoters in gene expression.

19. Write down the names of any three enzymes involved in DNA replication.

20. What is meant by an open reading frame?

21. What are transposons?

22. Write a brief note on chloroplast DNA.

(8 × 2 = 16 Marks)

SECTION – C

Answer **any six** questions. **Each** question carries **4** marks. (Answer not to exceed **120** wards).

23. Explain the organization of eukaryotic genome.

24. Write down the properties of genetic code.

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25. Write three major differences in the DNA replication process between prokaryotes and eukaryotes.

26. Explain the mechanisms of gene regulation in eukaryotes.

27. Explain the kind of regulation in *trp* operon.

28. Give an account on the three stages of the process of transcription.

29. Write any three differences between prokaryotic and eukaryotic translation.

30. Write a note on mRNA degradation after translation.

31. Write a note on human mitochondrial genome.

(6 × 4 = 24 Marks)

SECTION – D

Answer **any two** questions. **Each** question carries **15** marks. (Answer not to exceed **3** pages).

32. Explain the organization, regulation and mechanism of *lac* operon.

33. With the help of diagrams, explain in details the various steps involved in DNA replication in eukaryotes.

34. Write an essay on eukaryotic translation and the role of different types of RNAs in the process.

35. Write an essay on the post transcriptional modifications of mRNAs and post translational modifications of proteins.

(2 × 15 = 30 Marks)

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(Pages : 3) **H–1629**

Reg. No. : 24718132011

Name : Nandhana. B

Third Semester B.Sc. Degree Examination, October 2019

Career Related First Degree Programme under CBCSS

Group 2 (a) Botany and Biotechnology

Vocational Course V

BB 1372 : ANIMAL PHYSIOLOGY AND ANATOMY

(2013 Admission Onwards)

Time : 3 Hours Max. Marks : 80

SECTION – A

Answer **all** questions in a word or **one** or **two** sentences. Each questions carries **1 mark**.

1. What is Cellular respiration?

2. Explain Thyroxine.

3. Give note on Myelin Sheath.

4. Give note on Melatonin.

5. What is an Eosinophil?

6. Give note on Sarcoplasmatic Reticulum.

7. What is FSH?

P.T.O.

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8. Give note on Neurotransmitter.

9. What is Striated muscle?

10. Explain Counter-current Flow.

(10 × 1 = 10 Marks)

SECTION – B

Answer **any eight** questions. Each question carries **2** marks. Answer not to exceed one paragraph

11. What is Lymphocyte?

12. Explain Gas exchange.

13. What is Graafian follicle?

14. Define feedback Loop.

15. Define homeostasis.

16. What is meant by Renin?

17. What is the function of SA Node?

18. Explain autonomic nervous system.

19. What is the function of Loop of Henle?

20. Explain pulmonary respiration.

21. What is Cardiac Cycle?

22. What is sensory neuron?

(8 × 2 = 16 Marks)

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SECTION – C

Answer **any six** questions.(Answer not to exceed 120 words) Each questions carries 4 marks

23. Explain the process of menstrual cycle.

24. Give note on the nervous system of invertebrates.

25. Explain the various types of circulation.

26. What are the functions of pancreas.

27. Give an account of human axial skeleton system.

28. Explain the structure of sperm.

29. Explain the structure of nephrones.

30. Explain different types of digestion.

31. Give a brief note on human respiratory system.

(6 × 4 = 24 Marks)

SECTION – D

Answer **any two** questions.(not more than **3** pages). Each questions carries 15 marks

32. Explain the spermatogenesis in human.

33. With the help of a labelled diagram describe Human heart.

34. Give an essay on excretory organs of invertebrates.

35. Explain the endocrine functions of the pituitary glands and discuss their regulatory functions.

(2 × 15 = 30 Marks)

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(Pages : 3) G –2594

Reg. No. : .....

Name : .....

Second Semester B.Sc. Degree Examination, May 2019

(Career Related First Degree Programme under CBCSS)

Group 2 (a) Botany and Biotechnology

BB 1271 : MICROBIAL METABOLISM, GENETICS AND DISEASES

(2015 Admission Onwards)

Time : 3 Hours Max. Marks : 80

SECTION – A

Answer **all** questions in a word 1 or 2 sentences :

1. Name any passive process for the uptake of solutes into a bacterial cell.
2. Define a autotroph.
3. What is the function of bacterial carotenoids?
4. In which life cycle the bacteriophage DNA integrates into the host genome?
5. Which organism produces the botulinium toxin?
6. What is meant by a stringer plasmid?
7. What is meant by an auxotroph?
8. Name the causative organism of tuberculosis.
9. Name the virus which cause chickenpox.
10. What is the role of F pilus in conjugation?

(10 × 1 = 10 Marks)

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SECTION – B

Answer **any eight** questions. Answer not to exceed 1 paragraph.

11. What are phycobiliproteins?

12. Write a short note on bacterial chlorophyll.

13. Briefly describe the nutritional classification of bacteria.

14. What are relaxed plasmids?

15. What is plasmid mediated resistance?

16. Name any two engineered plasmid vectors.

17. What is the difference between F+ and F- bacterial cells?

18. Give an account of the replica plating techniques.

19. What is the causative organism of Dengue fever. Briefly describe the symptoms.

20. What disease is caused by Shijella? Describe the main symptoms.

21. Name two soil borne infections and causative organisms.

22. Name the causative organism and symptoms of Polio.

(8 × 2 = 16 Marks)

SECTION – C

Answer **any six** questions. Answer not to exceed 120 words.

23. Explain the tricarboxylic acid cycle.

24. Write a short note on bacteriochlorophyll.

25. Write note the lactic acid fermentation in bacteria.

26. Briefly describe the importance of induced mutations in genetic engineering.

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27. Describe the glycolysis in bacteria.

28. Describe the Griffith's experiment and its importance.

29. Give an account of two neurotropic viral diseases affecting human?

30. Discuss the various methods to prevent the water and food borne infections.

31. Write a note on Staphylococcal food poisoning.

(6 × 4 = 24 Marks)

SECTION – D

Answer **any two** questions. Answer not to exceed 3 pages.

32. Explain the various photosynthetic pigments and the mechanisms of photosynthesis in bacteria.

33. Write an essay on the major dermatoviral diseases affecting human with its causative organisms and symptoms.

34. Give a detailed account on the electron transport and oxidative phosphorylation in bacteria.

35. Describe the mechanism of horizontal gene transfer during bacterial conjugation. Compare transformation and transduction.

(2 × 15 = 30 Marks)

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Reg. No. : .....

Name : Apurva Raj B

(Pages : 3)

D -

Third Semester B.Sc. Degree Examination, December 201
(Career Related First Degree Programme under CBCSS)
Group 2(a) : Botany and Biotechnology
Vocational Course – IV
BB 1371 : PROTISTA AND ANIMAL DIVERSITY
(2013 Admission Onwards)

Time : 3 Hours

Max.

SECTION – A

Answer **all** the questions in **a word** or **one** or **two** sentences : **(10×1**

1. Who proposed :
   a) Binomial Nomenclature
   b) Five Kingdom Classification ?
2. Differentiate between Cellular and Tissue level organization.
3. What is Clitellium ? Mention the function.
4. Name the body cavity of
   a) Arthropoda
   b) Nematoda.
5. What is Nematocyst ? Mention the function.
6. Name the respiratory organ of
   a) Scolopendra
   b) Scorpion.
7. What is Elephant tusk shell ? Name the phylum in which it belongs.
8. What is Aristotle's Lantern ? Mention the function.

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29. Explain retrogressive metamorphosis in Ascidia.

30. Describe the digestive system of Cockroach.

31. Describe the vertebral column of Frog.

32. Describe the appendages in Prawn.

33. Explain the external features of Scoliodon.

SECTION – D

(2×15=30 Marks)

Long essay. Answer any two :

34. Give a detailed account of brain in Frog.

35. Describe the aquatic adaptations of mammals with suitable examples.

36. Describe the distinguishing characters to identify poisonous snakes from non-poisonous. Add a note on poisonous snakes of Keral and their toxic effects.

37. Describe the life cycle of *Plasmodium vivax*.

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9. What is Syncytium ? Give an example.

10. What is Synsacrum ? Where it is found ?

SECTION – B

Short answer questions. **Not** exceed in **one** paragraph. Answer eight : (

11. What is Ecolocation ? Give an example.

12. What is Pecten ? Mention its function.

13. Explain different types of feathers in Birds.

14. How does Pearl formation occur in Pearl oyster ?

15. Evolutionary significance of Limulus.

16. What are the peculiar features of Rhacophorus ?

17. Describe neuromotor system in Paramecium.

18. Enumerate the salient features of Ichthyophis.

19. Mention four parasitic adaptations of Fasciola.

20. Give an account of insect pests affecting paddy.

21. Describe unique characters of Chordata.

22. Explain desert adaptations of Ostrich.

SECTION – C

Short Essay. **Not** to exceed **120** words. Answer **any six** :

23. Describe the morphology of Sepia.

24. Classify Phylum Echinodermata with suitable examples.

25. Give an account of evolutionary significance of Peripatus.

26. Describe the morphology of Amphioxus.

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29. Explain retrogressive metamorphosis in Ascidia.

30. Describe the digestive system of Cockroach.

31. Describe the vertebral column of Frog.

32. Describe the appendages in Prawn.

33. Explain the external features of Scoliodon.

SECTION - D

Long essay. Answer any two : (2×15=30 Marks)

32. Give a detailed account of brain in Frog.

33. Describe the aquatic adaptations of mammals with suitable examples.

34. Describe the distinguishing characters to identify poisonous snakes from non-poisonous. Add a note on poisonous snakes of Keral and their toxic effects.

35. Describe the life cycle of *Plasmodium vivax*.

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Reg. No. : ...13B20...

Name : ...Arun S...

Third Semester B.Sc. Degree Examination, November 201
(Career Related First Degree Programme under CBCSS)
Group 2 (a) Botany and Biotechnology
Vocational Course – IV
BB 1371 : PROTISTA AND ANIMAL DIVERSITY
(2013 admission)

Time : 3 Hours Max.

SECTION – A

I. Answer **all** questions in **one** or **two** sentences. **Each** question carries **on**
(10×1

1) Name the podomers of leg of Cockroach.

2) Differentiate between Peristomium and Prostomium.

3) What is meant by syncytium ? Give an example.

4) Name the five kingdoms of Whittaker classification.

5) What is Coelom ?

6) What is meant by heterocercal caudal fin ?

7) What is Aristotle's lantern ? Mention its function.

8) What is Urostyle ?

9) Mention the systematic position of :
   a) Amphioxus
   b) Draco

10) What are the major differences between Protostomia and Deutero

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SREE NARAYANA COLLEGE, KOLLAM

Third semester B.Sc. Degree model examination, December 2016

(Career Based First Degree Programme under CBCSS)

Core Course Vocational - **BB1371 Protista and Animal Diversity**

Time: 3hrs

Max. Marks 80

SECTION – A

I. Answer all questions (answer in a word or a sentence) **(Marks 1x10=10)**

1. Name the podomers of leg of Cockroach
2. Polymorphism
3. What is Aristotle's lantern?
4. Diploblastic
5. Mention the systematic positionsof ,
   a. Brittle star
   b. Scuttigerella
6. Gonochoric condition
7. Limlus belongs to class .....
8. Nematocyst
9. Define Red spot of star fish
10. Schizocoelic

SECTION – B

II. Answer any 8 questions (Not exceed one paragraph) **(Marks 2x8=16)**

11. Explain the appendages of Scorpion
12. Write down the characters of mesozoa
13. Explain the characters of chordates
14. Differentiate Bilateria and Radiata
15. Explain *Tribolium*
16. Explain the body wall layers in Porifera.
17. Explain class Pycnogodia
18. What are the major difference between Prostomia and Deuterostomia.
19. Explain Peracopods and Chelipeds of *Penaeus*
20. Explain metagenesis with suitable examples.
21. Explain hepatic portal system in Chordates.
22. What do you understand by Metamerism and pseudometamerism.

SECTION – C

III. Answer any 6 questions (Short answer type) **(Marks 4x6=24)**

23. Sketch and label mouth parts of Cockroach.
24. Explain the different levels of organization in kingdom animalia
25. Classify phylum Echinodermata with suitable examples
26. Explain the polymorphism in Cnidarians.
27. Mention two insect pest of paddy and explain the damage caused by them and control m
28. Write down the classification of phylum Platyhelminthes
29. Explain thoracic appendages of *Penaeus*.
30. Write the salient features of Fasciola hepatica.

SECTION – D

IV. Answer any 2 questions (Long essay type)

31. Briefly explain about different appendages of *Penaeus* **(Marks 15x2=**
32. Briefly explain the general characters and classification of phylum Cnidaria.
33. Explain the salient features of Subphylum Trilobitomorpha with an example.

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D – 3169

9. What is Syncytium ? Give an example.

10. What is Synsacrum ? Where it is found ?

SECTION – B

Short answer questions. **Not** exceed in **one** paragraph. Answer **eight** :

11. What is Ecolocation ? Give an example.

12. What is Pecten ? Mention its function.

13. Explain different types of feathers in Birds.

14. How does Pearl formation occur in Pearl oyster ?

15. Evolutionary significance of Limulus.

16. What are the peculiar features of Rhacophorus ?

17. Describe neuromotor system in Paramecium.

18. Enumerate the salient features of Ichthyophis.

19. Mention four parasitic adaptations of Fasciola.

20. Give an account of insect pests affecting paddy.

21. Describe unique characters of Chordata.

22. Explain desert adaptations of Ostrich.

SECTION – C

Short Essay. **Not** to exceed **120** words. Answer **any six** :

23. Describe the morphology of Sepia.

24. Classify Phylum Echinodermata with suitable examples.

25. Give an account of evolutionary significance of Peripatus.

26. Describe the morphology of Amphioxus.

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920

C) Fill in the blanks :

9) The tissue that lines the surface of the body or body parts is called _____

10) Respiration through lungs is called _____

11) The cellular process of engulfing solid particles by cells and protists is called _____

12) The skeletal muscle is also known as _____

D) State whether **true** or **false** :

13) Amoeba exhibits holozoic nutrition.

14) Heart of frog has four chambers.

15) Corpus luteum is formed from ovulated follicle.

16) Dialysis is a process of removal of damaged RBC from blood.

SECTION – B

II. Answer **any eight** questions (giving **four** major points) : (1×8=8 Weightage)

17) Describe the advantages of closed circulatory system.

18) Name any four hormones secreted by the pituitary gland.

19) Describe any four functions of lymphatic circulation.

20) What are the formed elements in blood ?

21) Mention any four physiological functions of liver.

22) Cite salient differences between electrical synapse and chemical synapse.

23) Briefly describe the stages of spermatogenesis.

24) Mention the functions of smooth muscles.

25) Write any four major phases of human embryogenesis.

26) Describe briefly the pulmonary circulation in mammals.

27) Write any four differences between sexual reproduction and asexual reproduction.

28) Explain the term apocrine gland.

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SECTION – C

III. Answer **any five** questions. (**not** more than **one** page). **(2×5=10 Weightag**

29) Explain "metagenesis" with suitable example.

30) Explain the adaptations of aquatic mammals.

31) Describe the functioning of water vascular system of starfish.

32) Describe the evolutionary significance of limulus.

33) Explain the modes of reproduction in paramecium.

34) Explain the distinctive features of super class agnatha.

35) Write brief notes on peripatus explaining its adaptations.

36) Describe the exoskeletal structures of pigeon.

SECTION – D

IV. Answer **any two** questions. (**not** more than **three** pages). **(4×2=8 Weighta**

37) Write an essay on Plasmodium vivax. Add a note on its clinical significance.

38) Explain how birds adapted to its aerial mode of life.

39) Give an account of bivalved molluscans and its economic importance.

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27. Describe alternation of generation with reference to Obelia colony.

28. Describe the external features of Sepia.

29. Explain briefly the aquatic adaptations of mammals.

30. Comment on the structural peculiarities of Ostrich.

31. Describe the morphology of Limulus.

SECTION – D

Long essay. Answer any two. (2×15=30)

32. Explain flight adaptations of Birds.

33. Give an account of reproduction in Paramecium.

34. Describe organization and affinities of Peripatus.

35. Describe metamorphosis in Ascidia. Add a note on its body wall.

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C) Fill in the blanks :

9) Peripatus belong to the phylum _____

10) Tribolium is a pest of _____

11) Rasping organ of pila _____

12) Ichthyophis belong to the order _____

D) State **true** or **false** :

13) Jelly fish belong to the class Pisces.

14) Ascaris is an example for eucoelomate.

15) Peripatus is a living fossil.

16) Sepia is a molluscahaving internal cell.

SECTION – B

II. Answer **any eight** questions in **one** or **two** sentences.

17) Malpighian tubules.

18) Axolotl larva.

19) Arboreal lizard.

20) Give any two parasitic adaptations of leech.

21) What are tentaculocysts ?

22) What is meant by Pseudocoel ?

23) What is madreporite ?

24) Give any two adaptations of a sea snake.

25) What is neuromast organ ?

26) Mention the levels of organisation in Protista and porifera.

27) Write the names of two pests of coconut.

28) Name two coral forming cnidarians.

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B – 3784

SECTION – B

Short answer questions. **Not** exceed in **one** paragraph. Answer **eight**. (8×2=16

11. Differentiate Polyp and Medusa.
12. Mention four parasitic adaptations of Leech.
13. Explain Choanocytes.
14. Classify and explain Metazoans.
15. Comment on aerial adaptations of Bat.
16. Explain Neoteny with example.
17. Sketch and label the leg of Cockroach.
18. Name the adult of following larval forms :
    a) Tadpole
    b) Redia
    c) Ephyra
    d) Bipinneria.
19. Explain extra intestinal migration with example.
20. Distinguish between radial and bilateral symmetry.
21. What are the basic criteria selected for five Kingdom Classification.
22. Explain sexual dimorphism in Frog.

SECTION – C

Short essay. **Not** to exceed **120** words. Answer **any six**. (6x4

23. Describe the external features of *Taenia Solium*.
24. Describe the digestive system of Frog with the help of a diagram.
25. Comment on 'Cycle of Rose' in Plasmodium.
26. Describe the morphology of Cockroach.

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SECTION – B

Answer **any eight** questions. Each question carries **2** marks. Answers not to exceed **one** paragraph.

11. What are toxoids?
12. Explain humoral immunity.
13. What is agglutination reaction?
14. Discuss the role of dendritic cells in immune system.
15. What are B cells?
16. Explain immunodiffusion.
17. What are isotypes?
18. What is MHC? Explain its role.
19. Brief a note on myeloid cells.
20. What are immunogens?
21. Explain acquired immunity.
22. What are DNA vaccines?

(8 × 2 = 16 Marks)

SECTION – C

Answer **any six** questions. Each question carries **4** marks. Answers not to exceed **120** words.

23. Explain structure and function of thymus.
24. Comment on Rh incompatibility in ABO blood groups.
25. Explain ELISA.
26. What is hypersensitivity? Explain its types.

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SECTION – B

Answer **any eight** questions. **Each** question carries **2** marks. (Answer not to exceed **1** paragraph).

11. What is the importance of Hershey-Chase experiment?

12. Which are the major components of eukaryotic transcription -initiation complex?

13. How the enhancer is different from a promoter?

14. What is the importance of the post-transcriptional modification of mRNAs?

15. List out any three post-translational modifications.

16. Briefly explain the Wobble hypothesis.

17. What is the major difference between a *lac* and *trp* operon?

18. Comment of the importance of promoters in gene expression.

19. Write down the names of any three enzymes involved in DNA replication.

20. What is meant by an open reading frame?

21. What are transposons?

22. Write a brief note on chloroplast DNA.

(8 × 2 = 16 Marks)

SECTION – C

Answer **any six** questions. **Each** question carries **4** marks. (Answer not to exceed **120** wards).

23. Explain the organization of eukaryotic genome.

24. Write down the properties of genetic code.

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25. Write three major differences in the DNA replication process between prokaryotes and eukaryotes.

26. Explain the mechanisms of gene regulation in eukaryotes.

27. Explain the kind of regulation in *trp* operon.

28. Give an account on the three stages of the process of transcription.

29. Write any three differences between prokaryotic and eukaryotic translation.

30. Write a note on mRNA degradation after translation.

31. Write a note on human mitochondrial genome.

(6 × 4 = 24 Marks)

SECTION – D

Answer **any two** questions. **Each** question carries **15** marks. (Answer not to exceed **3** pages).

32. *Explain the organization, regulation and mechanism of lac operon.*

33. With the help of diagrams, explain in details the various steps involved in DNA replication in eukaryotes.

34. Write an essay on eukaryotic translation and the role of different types of RNAs in the process.

35. Write an essay on the post transcriptional modifications of mRNAs and post translational modifications of proteins.

(2 × 15 = 30 Marks)

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(Pages : 3) J – 1336

Reg. No. : .....

Name : .....

Fourth Semester B.Sc. Degree Examination, March 2020

Career Related First Degree Programme under CBCSS

Group 2(a) — Botany and Biotechnology

Vocational Course — BB 1471 : MOLECULAR BIOLOGY

(2015 Admission onwards)

Time : 3 Hours Max. Marks : 80

SECTION – A

Answer ***all*** *the questions in a* **word** or **1** or **2** sentences. **Each** question carries **1** mark.

1. Name the Indian-born scientist who is involved in the discovery of the genetic code.
2. Which enzyme is involved in the joining of DNA fragments?
3. Define exons.
4. What should be the complementary strand of 3' ATGGCTTGA 5'?
5. Which RNA is responsible for bringing amino acids to ribosome during translation?
6. Give one triplet codon which codes for the amino acid Glycine.
7. Nucleosome consists of _____.
8. Which is the starting amino acid in eukaryotic translation?
9. What is the size of human mitochondrial genome?
10. Give an example of a repressible operon.

(10 × 1 = 10 Marks)

P.T.O.

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(Pages : 3) J – 3031

Reg. No. : .....

Name : .....

Fourth Semester B.Sc. Degree Examination, June 2020

Career Related First Degree Programme under CBCSS

Group 2 (a) Botany and Biotechnology

Vocational Course — BB 1472 : IMMUNOLOGY

(2015 Admission onwards)

Time : 3 Hours Max. Marks : 80

SECTION – A

Answer **all** the questions in a word or **one** or **two** sentences. Each question carries **1** mark.

1. What are memory cells?
2. Define immunity.
3. What are haptens?
4. Give an example for an oral vaccine.
5. What are chemokines?
6. What is RIA?
7. Define epitope.
8. What is the function of T helper cells?
9. Define allotypes.
10. What are super antigens?

(10 × 1 = 10 Marks)

P.T.O.

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27. Give an account on cell mediated immunity.

28. Brief a note on secondary lymphoid organs.

29. What are attenuated vaccines?

30. Explain antigen antibody interaction.

31. Discuss immune response to infections.

(6 × 4 = 24 Marks)

SECTION – D

Answer **any two** questions. Each question carries **15** marks. Answers not to exceed **3** pages.

32. Write an essay on genetic basis of antibody diversity.

33. Explain the structure and functions of antibodies.

34. Discuss autoimmune diseases with examples.

35. What is hybridoma technology? Explain the production of monoclonal antibodies.

(2 × 15 = 30 Marks)

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SECTION – C

Answer any **six** questions. **Each** question carries **4** marks.

23. Explain the measures of central tendency.

24. Discuss the ethical issues in biotechnology.

25. Describe various methods of data collection.

26. Explain the production of monoclonal antibodies.

27. Discuss cyber crime and security privacy issues.

28. Write a brief note on Good Laboratory Practices.

29. Explain the role of microbes in food processing.

30. Brief a note on online learning platforms with examples.

31. Discuss internet as a knowledge repository.

(6 × 4 = 24 Marks)

SECTION – D

Answer any **two** questions. **Each** question carries **15** marks. (Answer not to exceed **three** pages).

32. Explain the design and planning of experiments in scientific research.

33. Discuss the significance of statistical methods in biological studies.

34. What are GM crops? Explain the applications of biotechnology in agriculture.

35. Explain the features of a modern personal computer and its peripherals.

(2 × 15 = 30 Marks)

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7. What is Review of Literature?

8. What is science direct?

9. Give an example for SCP.

10. What is a copyright?

(10 × 1 = 10 Marks)

SECTION – B

Answer any **eight** questions. **Each** question carries **2** marks. (Answer not to exceed **one** paragraph).

11. What is standard deviation?

12. Define patent. Explain its types.

13. What is an operating system? Give two examples.

14. Comment on 'Flavr Savr' tomato.

15. What is science?

16. Describe the process of industrial production of wine.

17. What is a frequency polygon?

18. Differentiate primary and secondary data.

19. What is a biofuel?

20. List the main steps involved in Genetic engineering.

21. What is a pie diagram?

22. Discuss applications of IT in teaching and learning.

(8 × 2 = 16 Marks)

2021/10/1 20:16

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(Pages : 3) H – 2202

Reg. No. : ...2471913.2005

Name : ...Anu Krishna K.R

First Semester B.Sc. Degree Examination, November 2019

Career Related First Degree Programme under CBCSS

Group 2(a) : Botany and Biotechnology

Foundation Course

BB 1121 : METHODOLOGY AND PERSPECTIVES OF BIOTECHNOLOGY

(2019 Admission)

Time : 3 Hours Max. Marks : 80

SECTION – A

Answer **all** the questions in a **word** or **one** or **two** sentences. **Each** question carries **1** mark.

1. What is INFLIBNET?

2. Define null hypothesis.

3. What is Chi square test?

4. Expand GMP.

5. What is a Recombinant DNA?

6. List any two biotechnology companies in India.

P.T.O.

2021/10/1 20:16

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SECTION – C

Answer any **six** questions. **Each** question carries **4** marks.

23. Explain the measures of central tendency.

24. Discuss the ethical issues in biotechnology.

25. Describe various methods of data collection.

26. Explain the production of monoclonal antibodies.

27. Discuss cyber crime and security privacy issues.

28. Write a brief note on Good Laboratory Practices.

29. Explain the role of microbes in food processing.

30. Brief a note on online learning platforms with examples.

31. Discuss internet as a knowledge repository.

(6 × 4 = 24 Marks

SECTION – D

Answer any **two** questions. **Each** question carries **15** marks. (Answer not to exceed **three** pages).

32. Explain the design and planning of experiments in scientific research.

33. Discuss the significance of statistical methods in biological studies.

34. What are GM crops? Explain the applications of biotechnology in agriculture.

35. Explain the features of a modern personal computer and its peripherals.

(2 × 15 = 30 Marks

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