Roll No. _____

B. Sc. (Hons.) AGRICULTURE – 2ND SEMESTER
(SUBJECT NAME & CODE: BIOCHEMISTRY-17010203)
END TERM THEORY EXAMINATION

Time: 03:00 Hrs **Max. Marks: 60**

Instructions:
1. Write Roll No. on the Question Paper.
2. Candidate should ensure that they have been provided with correct question paper. Complaint(s) in this regard, if any, should be made within 15 minutes of the commencement of the exam. No complaint in this regard will be entertained thereafter.
3. Parts of a question should be attempted in sequential order. Marks are indicated against each question.
4. Draw diagram wherever required.

PART – A (OBJECTIVE TYPE QUESTIONS OMR SHEETS)

Q.1. The sugar in RNA and DNA is **(1)**
a) deoxyribose, phosphate **b)** ribose, deoxyribose
c) ribose, phosphate **d)** ribose, uracil

Q.2. The glycosidic bond in DNA and RNA **(1)**
a) connect the sugar to the base **b)** connect the sugar to the phosphate
c) connect the base to the phosphate **d)** none of the above

Q.3. A nucleotide consists of **(1)**
a) sugar, base and phosphate **b)** sugar and phosphate
c) paired bases **d)** base

Q.4. Which of the following is found in RNA but not DNA **(1)**
a) uracil **b)** deoxyribose **c)** phosphate **d)** adenine

Q.5. Which of the following is a purine **(1)**
a) cytosine **b)** adenine **c)** thymine **d)** uracil

Q.6. An essential amino acid is one that **(1)**
a) is essentially easy to synthesize
b) is essential to flagella motion
c) the body cannot synthesize
d) the body can synthesize under essential conditions

Q.7. D- alanine and L-alanine are technically known as **(1)**
a) anomers **b)** enantiomers **c)** epimers **d)** polymer

Q.8. How many different amino acids are there **(1)**
a) 3 **b)** 20 **c)** 100 **d)** an infinite number

Q.9. The sequence of letters WYQN will represent amino acids **(1)**
a) tryptophan, tyrosine, serine, asparagine
b) tryptophan, tyrosine, glutamine, asparagine
c) tryptophan, glutamine, serine, asparagine
d) glutamine, tyrosine, tryptophan, aspartic acid

Q.10. alpha helix is an example of protein's **(1)**
a) primary structure **b)** secondary structure
c) tertiary structure **d)** quaternary structure

P.T.O.

Q.11. The four subunits of the hemoglobin (Hb) represent protein's
a) primary structure
b) secondary structure
c) tertiary structure
d) quaternary structure

(1)

Q.12. Gluconeogenesis is the
a) formation of glycogen
b) breakdown of glucose to pyruvate
c) breakdown of glycogen to glucose
d) synthesis of glucose from non-carbohydrate precursors

(1)

Q.13. Hydrolysis of lactose yields
a) galactose and fructose
b) galactose and glucose
c) glucose and fructose
d) fructose and galactose

(1)

Q.14. Storage polysaccharide made by animals
a) amylopectin b) glycogen c) cellulose d) collagen

(1)

Q.15. In cells having organelles, the steps of the Kreb cycle and the electron transport system occurs in the
a) cell membrane
b) mitochondria
c) endoplasmic reticulum
d) none of these

(1)

Q.16. Saturated fatty acids contains
a) single bond
b) double bond
c) one or more double bond
d) both (a) and (b)

(1)

Q.17. Phospholipids contains
a) fatty acid and phosphate
b) glycerol and phosphate
c) glucose, fatty acid and phosphate
d) glycerol, fatty acid and phosphate

(1)

Q.18. The chromosomal DNA complexes with
a) three types of histone as H1, H2A, H4
b) five types of histone as H1, H2A, H2B, H3 and H4
c) four types of histone as H1, H2A, H3 and H4
d) two types of histone as H1and H4

(1)

Q.19. In DNA double helix, the two DNA chains are held together by
a) covalent bonds between the pair of bases
b) hydrogen bonds between the pair of bases
c) ionic bonds between the pair of bases
d) none of the above

(1)

Q.20. The 5' and 3' numbers are related to the
a) length of the DNA
b) carbon number in sugar
c) the number of phosphate
d) the base pair rule

(1)

Q.21. DNA replication takes place in which direction
a) 3' to 5'
b) 5' to 3'
c) randomly
d) vary from organism to organism

(1)

Q.22. In DNA, there are
a) five bases known as adenine, guanine, thymine, tryptophan and cytosine
b) four bases known as adenine, guanine, thymine and cytosine
c) three bases known as adenine, guanine and cytosine
d) only two bases known as adenine and cytosine

Q.23. In RNA, adenine pairs with (1)

a) guanine **b)** uracil **c)** thymine **d)** cytosine

Q.24. Which of the following is incorrect (1)

a) in DNA double helix, two strands of the DNA are bound with each other with the bases
b) adenine always pairs with thymine
c) guanine always pairs with cytosine
d) none of the above

Q.25. Which process is essentially the reverse of photosynthesis (1)

a) gluconeogenesis **b)** beta-oxidation
c) cellular respiration **d)** None of the above

Q.26. Rubisco (RuBP carboxylase-oxygenase enzyme), glyceraldehyde-3-phosphate and NADPH all play a role in (1)

a) the dark reactions of photosynthesis **b)** the breakdown of glucose into CO_2
c) cellular respiration when O_2 is present **d)** alcohol fermentation

Q.27. The electrons that are released by the splitting of water during photosynthesis ultimately end up in (1)

a) ATP **b)** O_2 **c)** NADPH **d)** CO_2

Q.28. Which enzyme is involved in carbon- fixation reaction (1)

a) NADP reductase **b)** cytochrome reductase
c) ribulose bisphosphate carboxylase **d)** glycerol kinase

Q.29. The breakdown of glucose occurs by the process known as (1)

a) glycolysis **b)** fermentation **c)** anaerobic respiration **d)** Krebs cycle

Q.30. Starch is (1)

a) monosaccharide **b)** disaccharide
c) polysaccharide **d)** none of the above

PART – B (DESCRIPTIVE TYPE)

Attempt any five questions. Each question carries six (6) marks **(6x5 =30)**

Q.1. Write the difference between eukaryotes and prokaryotes. **(6)**

Q.2. Define lipid. Write briefly about their structure and functions. **(6)**

Q.3. Write the difference between DNA and RNA. **(6)**

Q.4. What is primary, secondary, tertiary and quaternary structure of proteins? **(6)**

Q.5. What are carbohydrates? Classify carbohydrate with suitable examples for each class. **(6)**

Q.6. Classify amino acids with examples for each class. **(6)**

Q.7. Write a short note on central dogma. **(6)**

Roll No. _____

B. Sc (Hons.) Agriculture (REAPPEAR)
Fundamentals of Genetics - 17010204
END TERM THEORY EXAMINATION

Time: 03:00 Hrs **Max. Marks: 60**

Instructions:

1. Write Roll No. on the Question Paper.
2. Candidate should ensure that they have been provided with correct question paper. Complaint(s) in this regard, if any, should be made within 15 minutes of the commencement of the exam. No complaint in this regard will be entertained thereafter.
3. Question No. 1 is compulsory. Marks are indicated against each question.
4. Draw diagram wherever required.

PART – A (Compulsory)

Q.1. Fill in the blanks / Comment on the following: **(10 x1 = 10)**

a) Genetics term was given by .....in.....
b) Crossing over occurs in .....stage of meiosis.
c) "Double helix" structure of DNA was proposed by .....in .....
d) Ratio of parental and recombinant phenotypes in a dihybrid cross would be .....
e) In cell wall middle lamella is composed of .....
f) Nullisomy
g) Central dogma
h) Pleiotropic gene
i) Linkage
j) m-RNA

PART – B

Attempt any FIVE questions. **(5 x 10 = 50)**

Q.1. Differentiate the following:

a) Plant and animal cells
b) Prokaryotic and eukaryotic cells

Q.2. Define DNA replication and describe main points related to DNA replication.

Q.3. Define law of segregation. Explain the same with the help of suitable example.

Q.4. Describe the functions of the following cell organelles:

a) Endoplasmic reticulum
b) Chloroplast
c) Mitochondria
d) Lysosomes and ribosomes

Q.5. Write short notes on the following:

a) Transition
b) Over dominance
c) Terminal deletion
d) Sex influenced characters

Q.6. What is crossing over? Describe the cytological proof of crossing over in details.

Q.7. What is mitosis? Describe diagrammatically the various stages of mitotic cell division.

**********ETE MAY 2018**********

Roll No._____

B. SC. (HONS.) AGRICULTURE - 2ND SEMESTER
(SUB NAME & CODE: FUNDAMENTALS OF GENETICS - 17010204)
END TERM THEORY EXAMINATION

Time: 03:00 Hrs **Max. Marks: 60**

Instructions:

1. Write Roll No. on the Question Paper.
2. Candidate should ensure that they have been provided with correct question paper. Complaint(s) in this regard, if any, should be made within 15 minutes of the commencement of the exam. No complaint in this regard will be entertained thereafter.
3. Parts of a question should be attempted in sequential order. Marks are indicated against each question.
4. Draw diagram wherever required.

PART – A (OBJECTIVE TYPE QUESTIONS OMR SHEETS)

Single Response Questions:-

Q.1. A functional unit of a gene which specifies synthesis of one polypeptide is known as **(1)**
a) Clone **b)** Recon **c)** Cistron **d)** Codon

Q.2. The scientists who rediscovered the Mendel's law are **(1)**
a) Mast and Pantin **b)** Watson and Crick
c) Correns, Tschemark and Hugo de vries **d)** Khorana and Nirenberg

Q.3. Colour blindness is caused due to **(1)**
a) Deficiency of vitamin C **b)** Sex linked abnormality
c) Absence of rods in retina **d)** Absence of visual purple in retina

Q.4. In a monohybrid cross the F_1 ratio of a back cross is **(1)**
a) 1: 1 **b)** 3: 1 **c)** 1 : 2 : 1 **d)** 9 : 3 : 3 : 1

Q.5. Proteins are made of amino acids linked together by specific bond called **(1)**
a) Peptide bond **b)** Nitrogen bond
c) Hydrogen bond **d)** Hydrogen and Nitrogen bond

Q.6. The enzymes which builds a m-RNA strand complementary to the DNA transcript unit is **(1)**
a) DNA Polymerase **b)** RNA Polymerase
c) Helicase **d)** DNA Ligase

Q.7. The triplet code of CAT in DNA is represent as .....in m-RNA and .....in t-RNA **(1)**
a) GAA, CAT **b)** CAT, CAT **c)** GUA, CAU **d)** GTA, CAU

Q.8. Genetics term was given by **(1)**
a) Johnson **b)** Bateson **c)** Mendel **d)** Flemming

Q.9. Who coined the term "Chromosomes" **(1)**
a) W. Waldeyer **b)** W. Flemming **c)** C. Benda **d)** W. Strasburger

Q.10. In cell cycle chromosomes and DNA replication take place during **(1)**
a) G1 phase **b)** G2 phase **c)** S phase **d)** All phases

P.T.O.

Q.11. Crossing over occurs in which stage of meiosis (1)
a) Leptotene b) Diplotene c) Zygotene d) Pachytene

Q.12. In cell wall middle lamella is composed of (1)
a) Calcium pectate b) Magnesium pectate
c) Calcium and magnesium pectate d) None of the above

Q.13. Watson and Crick proposed a "double helix" structure of DNA in (1)
a) 1957 b) 1941 c) 1952 d) 1953

Q.14. Genetic code is (1)
a) Triplet b) Commaless c) Overlapping d) Both A and B

Q.15. Leaf variegation in *Mirabilis jalapa* is an example of (1)
a) Plastid inheritance b) Mitochondria inheritance
c) Both A and B d) None of the above

Q.16. Jagannath is a mutant variety of (1)
a) Rice b) Wheat c) Maize d) Castor

Q.17. Replacement and substitution of a purine by another purine or a pyramidine by another pyramidine is known as (1)
a) Base deletion b) Transversion c) Transition d) Base addition

Q.18. The type of RNA specifically responsible for directing the proper sequence of amino acids in protein synthesis (1)
a) Ribosomal RNA b) Messenger RNA
c) Chromosomal RNA d) None of the above

Q.19. Through which enzyme can RNA give rise to DNA (1)
a) Restriction enzyme b) DNA Polymerase
c) RNA Polymerase d) Reverse transcriptase

Q.20. A haploid set of all the genes present in a gamete is called (1)
a) Genotype b) Phenotype c) Linkage group d) None of the above

Q.21. Haploid chromosome number is 10. What is number in a monosomic (1)
a) 19 b) 18 c) 20 d) 22

Q.22. Point mutation is a change which involve (1)
a) Loss of gene b) Addition of gene
c) Change in a base of a gene d) All of the above

Q.23. In split gene, the coding sequence are called (1)
a) Cistrons b) Operons c) Exons d) Introns

Q.24. Starting and stopping codons are respectively (1)
a) UCA and UAA b) AUG and UGA c) GUA and AAA d) GUG and AUG

Q.25. ABO blood grouping in humans is an example of (1)
a) Polygenic inheritance b) Pleiotropic gene
c) Complementary gene d) Multiples alleles

P.T.O.

Q.26. Genes do not occurs in pairs in (1)
a) Zygote b) Somatic cells c) Gametes d) None of the above

Q.27. The phenomenon which defies the independent assortment is (1)
a) Segregation b) Crossing over c) Dominance d) Linkage

Q.28. A pea with white flowers was crossed to another pea which is also white flower plant. When selfed the F_2 generation produced purple and white in the ratio 9:7. The reason for the result is that (1)
a) It is typical monohybrid Mendelian ratio
b) Purple flower colour is dominant over the white
c) It is a complementary factor
d) None of the above

Q.29. Multiple alleles are present (1)
a) At different loci in the same chromosome
b) In different chromosome
c) At the same locus in one type of chromosome
d) None of the above

Q.30. Ratio of parental and recombinant type phenotype in a dihybrid cross would be (1)
a) 8 : 8 b) 6 : 10 c) 10 : 6 d) 9 : 7

PART – B (DESCRIPTIVE TYPE)

Attempt any five questions. Each question carries six (6) marks. **(5 x 6 = 30)**

Q.1. Describe the functions of the following cell organelles: (6)
A. Mitochondria
B. Endoplasmic reticulum
C. Golgi complex
D. Lysosomes and ribosomes

Q.2. Define DNA replication and describe the main points related to DNA replication. (6)

Q.3. Describe operon in E. coli when:
A. Lactose is present
B. Lactose is absent (6)

Q.4. Define the law of independent assortment. Explain the same with the help of suitable example. (6)

Q.5. What is crossing over? Describe the cytological proof of crossing over in details. (6)

Q.6. Write short notes on the following:
A. Incomplete dominance
B. Over dominance
C. Multiple alleles
D. Sex linked characters (6)

Q.7. Describe characteristic features of cytoplasmic inheritance along with suitable examples. (6)

Roll No.....

B.Sc. (HONS.) AGRICULTURE 2ND SEMESTER EXAMINATION

SUBJECT – LIVESTOCK PRODUCTION AND MANAGEMENT (LPM), PAPER CODE -0170101205

TIME: 3 HOURS **MAXIMUM MARKS-60**

Instructions:

1. Write your Roll No. on the Question Paper.
2. Candidate should ensure that they have been provided with correct question paper. Complaints in this regard, if any, should be reported to the invigilator on the duty in the examination hall within 15 minutes of the commencements of the exams. No complain will be entertained thereafter.
3. **Attempt six questions in all. Question No. 1 is compulsory.**
4. All question carry equal marks as noted against each questions.

PART -A

Q.1 Fill in the blanks. **10x1=10**

a) _____ are those animals in which all teeth have fallen.
b) _____ gave the theory of evolution.
c) _____ is the permanent method of identification in livestock.
d) _____ is the name kept for breeding in equines.
e) _____ is the act of parturition in cattle.
f) _____is the cross of Brahman X Angus.
g) _____is the renewal of old feathers in birds.
i) _____is the yellowish part of egg.
j) _____is the sterile female born co-twins to male in cattle.
k) _____is the name given to females which have not been bred.

Part-B

Attempt any five questions. **5x10=50**

Q.2. a) Why is Jersey more popular in India than other exotic breeds of cattle?
b) Describe the characteristic features of Holstein- Friesian and Brown-Swiss breeds.

Q.3. Write the various factors for selecting a dairy-cow and breeding bull for various economic characters.

Q.4. Write the management practices for raising calves upto adult stage.

Q.5. Name two important milch breeds of cattle and their chief characteristics.

Q.6. a) Enlist two important breeds of layers and broilers in poultry
b) Give the stepwise procedure of hatching, incubation and brooding of chicks.

Q.7. a) Explain different types of housing system in cattle and buffaloes
b) Use of record keeping in animal improvement.

Q.8. a) What are the advantages of the use of Cage system in management of layers?
b) Describe the dehorning of calves.

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Roll No. _____

B. Sc (Hons.) AGRICULTURE SEMESTER – II EXAMINATION

(SUB: LIVE STOCK PRODUCTION & MANAGEMENT; PAPER CODE:- 17010205)

Time: 03:00 Hrs **Max. Marks: 60**

Instructions:

1. Write Roll No. on the Question Paper.
2. Candidate should ensure that they have been provided with correct question paper. Complaint(s) in this regard, if any, should be made within 15 minutes of the commencement of the exam. No complaint in this regard will be entertained thereafter.
3. Parts of a question should be attempted in sequential order. Marks are indicated against each question.
4. Draw diagram wherever required.

PART – A (OBJECTIVE TYPE QUESTIONS OMR SHEETS)

Q.1. Era behind the hunting of animals for food and clothing is (1)

a) Neo-lithic **b)** Meso-lithic **c)** Paleo-lithic **d)** Geo-lithic

Q.2. Which is the main dairy animal of India (1)

a) Cattle **b)** Buffalo **c)** Crossbred cattle **d)** Goat

Q.3. How many are the livestock farming zones of India (1)

a) 10 **b)** 15 **c)** 20 **d)** 25

Q.4. A female animal that have not been bred (1)

a) Crossbred **b)** Inbred **c)** Open Animal **d)** Hybrid

Q.5. Gestation Length of Cattle is (1)

a) 283 days **b)** 240 days **c)** 210 days **d)** 300 days

Q.6. Theory Of Evolution was given by (1)

a) Mendel **b)** C.Darwin **c)** Aristotle **d)** Linnaeus

Q.7. Home tract of Murrah breed of Buffalo is (1)

a) Punjab **b)** Haryana **c)** U.P. **d)** M.P.

Q.8. Method of identification in Pig is (1)

a) Ear Tagging **b)** Ear Notching **c)** Tattooing **d)** Branding

Q.9. Home tract of Sahiwal cattle is (1)

a) Ferozepur in Punjab **b)** Montgomery of Pakistan

c) Gujarat **d)** Sutlej Bank of Punjab

Q.10. Main characteristics features of Murrah Buffalo are (1)

a) Jet Black Colour **b)** Spiral Curly Horns

c) High fat content **d)** All of the above

Q.11. Home tract of Holstein Friesian of cattle is (1)

a) Holland b) America c) Australia d) England

Q.12. Characteristics features of White Leghorn (1)

a) More Egg b) Red Comb c) Yellow Shanks d) All of the above

Q.13. Long Pendulous ears, Roman Nose, White colour with black spots are found in ---------- breed of Goat. (1)

a) Beetal b) Black Bengal c) Jamnapari d) Barbari

Q.14. Number of well established breeds of Sheep in India are (1)

a) 10 b) 12 c) 8 d) 14

Q.15. Brangus is the cross of which two breeds (1)

a) Brahma x Hariana b) Brahma x Angus

c) Sahiwal x Angus d) Hariana x Jersey

Q.16. Instrument used for castration of male in Cattle and Buffalo is called (1)

a) Tattooing forcep b) Burdizo Castrator

c) Branding Pliar d) Clipper

Q.17. The first milk rich in immunoglobulins and minerals given to calf is called (1)

a) Full cream milk b) Tonned milk c) Colostrum d) Skimmed milk

Q.18. Docile and Gentle behavior of animal is called (1)

a) Selection b) Culling c) Disposition d) Weaning

Q.19. Free range type of housing is common in (1)

a) Europe b) Holland c) America d) Australia

Q.20. Stripping is practiced during milking for (1)

a) Checking abnormality in milk b) Clean milk production

c) Drawing off last milk drops d) All of the above

Q.21. Best method of milking of large animals in (1)

a) Intermittent milking b) Full hand milking

c) Stripping d) Knuckling

Q.22. Body temperature in Cattle is (1)

a) 39° C b) 36° C c) 38.5° C d) 37° C

Q.23. American class of Poultry birds includes (1)

a) Plymouth Rock b) Rhode Island Red

c) New Hampshire d) All of the above

Q.24. American Poultry birds having (1)

a) Feathered Shanks b) Yellow skin

c) Red ear lobes d) All of the above

Q.25. Building where chicks are grown (1)

a) Grower House b) Brooder House
c) Layer House d) Cage House

Q.26. Feathery Hairy part of the tail is called (1)

a) Dewlap b) Brisket c) Switch d) Tail Head

Q.27. No. of Hatching days in Poultry Chicks are (1)

a) 18 b) 21 c) 24 d) 26

Q.28. No. of Permanent Teeth in Cattle are (1)

a) 26 b) 32 c) 38 d) 34

Q.29. Hormone responsible for let down of milk is (1)

a) Estrogen b) Progesterone c) Oxytocin d) Vassopresin

Q.30. Moulting in birds is (1)

a) Renewal of Feather b) Growth of Feather
c) Colouring of Feather d) Shortening of Feather

PART – B (DESCRIPTIVE TYPE)

Q.1. Define the followings: (1x5=5)

a) Tattooing
b) Dehorning
c) Drying off milk
d) Free Martin
e) Branding

Q.2. Explain the followings in 4-5 lines: (1x5=5)

a) Neo-lithic age
b) Open mouthed
c) Livestock farming zone
d) Bull Nose Ring
e) Cross Breeding

Q.3. a) Explain the different types of housing system in Cattle and Buffaloes. (5)

b) Name two important milch breeds of Cattle and their Features. (5)

Q.4. a) Write the various factors for selecting a dairy-cow for economic characters. (5)

b) Give the management practices for raising calves upto adult stage. (5)

Roll No. _____

B. Sc (Hons.) Agriculture 2nd Semester
Elementary Microbiology - 17010206 (Reappear)
END TERM THEORY EXAMINATION

Time: 03:00 Hrs **Max. Marks: 60**

Instructions:

1. Write Roll No. on the Question Paper.
2. Candidate should ensure that they have been provided with correct question paper. Complaint(s) in this regard, if any, should be made within 15 minutes of the commencement of the exam. No complaint in this regard will be entertained thereafter.
3. Marks are indicated against each question.
4. Draw diagram wherever required.

Q.1. Define the following terms. **(1 x 10=10)**

a) Germ theory
b) Bacteria
c) Eukaryote
d) Food spoilage
e) Biogas
f) GM food
g) Algae
h) Nucleus
i) Prokaryote
j) Biodegradation

Attempt any FIVE from the following questions **(5X10=50)**

Q.2. Describe the role of microbes in composting.
Q.3. Define bacteria. Give its general characteristics with diagram.
Q.4. Name two scientists in the field of microbiology and write on their contributions.
Q.5. Describe the nitrogen cycle with diagrams.
Q.6. Describe lytic and lysogenic cycle of virus
Q.7. Explain microflora of rhizosphere and phyllosphere.
Q.8. Differentiate between prokaryotes and eukaryotes with examples
Q.9. Define fungi. Write a note on its occurrence and reproduction.

**********ETE MAY JUNE 2018**********

Roll No. _____

B.Sc (Hons.) AGRICULTURE EXAMINATION

(SUB: ELEMENTARY MICROBIOLOGY; PAPER CODE:-17010206)

Time: 03:00 Hrs **Max. Marks: 60**

Instructions:

1. Write Roll No. on the Question Paper.
2. Candidate should ensure that they have been provided with correct question paper. Complaint(s) in this regard, if any, should be made within 15 minutes of the commencement of the exam. No complaint in this regard will be entertained thereafter.
3. Parts of a question should be attempted in sequential order. Marks are indicated against each question.
4. Draw diagram wherever required.

PART – A (OBJECTIVE TYPE QUESTIONS OMR SHEETS)

Q.1. Who is regarded as the father of microbiology (1)
a) Louis Pasteur b) Anton von Leuwenhoek
c) Robert Koch d) Joseph Lister

Q.2. Cell wall of algae is made up of (1)
a) Peptidoglycan b) Chitin c) Cellulose d) dextrose

Q.3. Prion is the causative agent of (1)
a) Scrapie b) Syphilis c) Tetanus d) Food poisoning

Q.4. Which one is a fungi (1)
a) *Proteus* *b) Escherichia coli* *c) Nostoc* *d) Aspergillus niger*

Q.5. Which of the following is common for prokaryotes and eukaryotes (1)
a) Golgi bodies b) Mitochondria c) Chloroplasts d) Ribosomes

Q.6. Which of the following lacks cells (1)
a) Bacteria b) Protozoa **c)** Virus d) Algae

Q.7. Phycology is known as the study of (1)
a) Fungi b) Algae **c)** Bacteria d) Virus

Q.8. Anabaena is an example of (1)
a) Algae b) Protozoa c) Virus d) Fungi

Q.9. Which is not a fermented product (1)
a) Pudding b) Bread c)Wine d) Cheese

Q.10. The network of hyphae is called (1)
a) Holdfast b) Symbiont c) Septa d) Mycelium

Q.11. Single celled fungi are also called (1)
a) Akinetes b) Mold c) Yeast d) Conidia

Q.12. Relationship in which one benefits without affecting the other is called (1)
a) Parasitism b) Commensalism c) Mutualism d) Symbioism

P.T.O.

Q.13. Which of the following is not a food preservation technique (1)
a) Canning b) Irradiation c) Pasteurisation d) Ammonification

Q.14. GMO stands for (1)
a) Genetically modified organism b) Genetic model organism
c) Gene modified organism d) Gene model organism

Q.15. Prophage is formed in (1)
a) Algae b) Virus c) Fungi d) Bacteria

Q.16. Which is not a benefit seen in biofertilizer (1)
a) Cost effective b) Renewable
c) Environment friendly d) horizontal Gene transfer

Q.17. Decomposition of organic matter by microbes is called (1)
a) Biogas b) biodegradation c) bio-oil d) biocontrol

Q.18. Biogas production consists of (1)
a) oxygen and methane b) oxygen and hydrogen
c) hydrogen and methane d) methane and oxygen

Q.19. Select the most common soil bacteria (1)
a) Neisseria b) Phytoplankton c) Actinomycetes d) Mycoplasma

Q.20. Which of the following is not a nitrogen fixing bacteriam (1)
a) Escherichia coli b) Cyanobacteria c) Nitrosomonas d) Nitrobacter

Q.21. Thermophilic bacteria is (1)
a) Pressure loving b) heat loving c) salt loving d) methane loving

Q.22. Food poisoning is commonly caused by (1)
a) Neisseria b) Mycoplasma c) Clostridium d) Retrovirus

Q.23. Which of the following has autotrophic nutrition (1)
a) Algae b) Yeast c) Virus d) Protozoa

Q.24. Which of the following is an example of a virus (1)
a) Staphylococcus aureus b) Streptococcus pneumoniae
c) Chlorococcum d) Rhabdo

Q.25. Which part is not a feature of Bacteriophage structure (1)
a) head b) feet c) neck d) tail

Q.26. Select the false statement (1)
a) Bacteria has multiple number of cells
b) Bacteria is a prokaryote
c) Bacteria consists of a nucleoid
d) Bacteria can reproduce by budding

Q.27. Which is a fungal disease (1)
a) Cholera b) Tuberculosis
c) Candidiasis d) AIDS

Q.28. Gram staining is done for **(1)**

a) Protozoa b) Algae c) Fungi d) Bacteria

Q.29. Select the true statement **(1)**

a) Fungi are eukaryotic
b) Giardia is an example of algae
c) Viroids causes animal diseases affecting brain function
d) Bacteria is present only in soil habitats

Q.30. Which is not a function of Rhizobium **(1)**

a) Nitrogen fixation
b) formation of root nodules
c) uptake of nutrients by plants
d) releasing toxins to animals

PART – B (DESCRIPTIVE TYPE)

Write any six out of seven questions **(6 X 5 = 30)**

Q.1. Define :

(a) Composting

(b) Food spoilage **(2+3)**

Q.2. Write short notes on **(2+3)**

(a). Virus

(b) Rhizosphere

Q.3. Differentiate between prokaryotes and eukaryotes **(5)**

Q.4. Explain the virus replication cycle with diagrams **(5)**

Q.5. Write a note on biofertilizers and their role in agriculture **(5)**

Q.6. What is a bacteria ? Explain its process of reproduction. **(5)**

Q.7. Name any 2 scientists in the field of Microbiology and write a note on their contributions. **(5)**

Roll No. _____

B. Sc (Hons.) Agriculture 2nd Semester (Re-appear)
PLANT PATHOGENS AND PRINCIPLES OF PLANT PATHOLOGY- 17010207
END TERM THEORY EXAMINATION

Time: 3:00 Hrs **Max. Marks: 60**

Instructions:

1. Write Roll No. on the Question Paper.
2. Candidate should ensure that they have been provided with correct question paper. Complaint(s) in this regard, if any, should be made within 15 minutes of the commencement of the exam. No complaint in this regard will be entertained thereafter.
3. Parts of a question should be attempted in sequential order. Marks are indicated against each question.
4. Draw diagram wherever required.

Part - A

Q.1. Fill in the blanks **(10x1=10)**

(a) Death of infected tissue is called .....
(b) Phytophthora infestans is related with disease .....
(c) Fungal cell wall is made up of .....
(d) Interwoven mass of thread-like hyphae is called .....
(e) Disease which is constantly present in a moderate to severe form and is confined to a particular country or district is called .....
(f) Father of modern plant pathology .....
(g) Flag smut of wheat is introduced into India from .....
(h) Root knot of vegetable crops is caused due to .....
(i) ..... is the casual organism of Ergot of bajra.
(j) Removal of diseased plants or their affected organs from field is called .....

Part- B (Attempt any FIVE questions) (5x10=50)

Q.2. Define the following :

a) Parasite
b) Inoculum
c) Remote sensing
d) Eradication

Q.3. Explain the sources of survival of plant pathogens.

Q.4. What is defense mechanism? Describe the structural and biochemical type of defense mechanism.

Q.5. What is disease cycle? Explain the steps involved in disease cycle.

Q.6. Differentiate between

a) Disease and disorder
b) Symptom and Syndrome
c) Host specific and non-host specific toxin
d) Manures and fertilizers

Q.7. Define plant pathology. Write a short note on history of plant pathology.

Q.8. What are growth regulators? Describe their role in plant pathogenesis.

Roll No. _____

B. SC (Hons.) AGRICULTURE 2ND SEMESTER
SUB NAME & CODE: PLANT PATHOGENS & PRINCIPLES OF PLANT PATHOLOGY- 17010207
END TERM THEORY EXAMINATION

Time: 03:00 Hrs **Max. Marks: 60**

Instructions:

1. Write Roll No. on the Question Paper.
2. Candidate should ensure that they have been provided with correct question paper. Complaint(s) in this regard, if any, should be made within 15 minutes of the commencement of the exam. No complaint in this regard will be entertained thereafter.
3. Parts of a question should be attempted in sequential order. Marks are indicated against each question.
4. Draw diagram wherever required.

PART – A (OBJECTIVE TYPE QUESTIONS OMR SHEETS)

Q.1. Cork layer formation in plants is a **(1)**

a) histological defense structure
b) a natural opening structure
c) pre -existing defense structure
d) none of the above

Q.2. Abscission layer in plants is formed **(1)**

a) to kill the pathogens
b) for surrounding the locus of infection
c) to secrete the toxic substances
d) none of the above

Q.3. Phytoalexins in the plants are **(1)**

a) produce before infection of the pathogen
b) pre –existing chemical substances
c) pre –existing morphological structures
d) post inflectional/induced defence mechanism

Q.4. Tyloses are the **(1)**

a) over growth of protoplast of living parenchyma cells
b) chemical present before the infection
c) toxic substances produced post infection
d) none of the above

Q.5. Hyper sensitive reaction (HR) occurs in plants **(1)**

a) as localized induced cell death
b) as resistance present in the plants against a pathogens
c) as a compatible reaction of host-pathogen combination
d) none of the above

Q.6. For an epidemic which of the following factors is essential **(1)**

a) distance of susceptible plants from the source of primary inoculum
b) abundance and distribution of susceptible hosts
c) presence of collateral hosts
d) all of the above

Q.7. General principles of plant disease management are (1)

a) avoidance of pathogen
b) exclusion of inoculums of pathogen
c) (a) and (b)
d) none of the above

Q.8. Which one of following disease management methods is physical method (1)

a) antibiosis
b) antisporulent
c) (a) and (b)
d) hot air treatment

Q.9. Phytosanitary certificate is an official certificate from (1)

a) the country where seed material is received
b) the country of origin of seed material
c) both of the countries at (a) and (b)
d) none of the above

Q.10. For avoidance of any pathogen which of the following method is followed (1)

a) sowing of disease escaping varieties
b) adjusting the time of sowing
c) proper selection of geographical area
d) all of the above

Q.11. Blast of rice is caused by (1)

a) *Magnaporthe grisea*
b) *Drechslera oryzae*
c) *Ephelis oryzae*
d) *Rhizoctonia solani*

Q.12. Bacterial cell wall is made up of (1)

a) peptidoglycon
b) chitin
c) flagellin
d) none of the above

Q.13. The genetic material in a bacterial cell is (1)

a) a nucleoid region
b) definite nucleus
c) mitochondria
d) mesosome

Q.14. Most of the plant viruses contain (1)

a) RNA
b) DNA
c) both RNA and DNA
d) none of the above

Q.15. A virus particle is composed of (1)

a) only nucleic acid
b) only protein
c) nucleic acid and protein
d) none of these

Q.16. Late blight of potato is caused by (1)
a) *Alternaria solani*
b) *Phytophthora infestans*
c) *Synchytrium endobioticum*
d) *Septoria lycopersici*

Q.17. *Agrobacterium tumefaciens* induces (1)
a) galls/tumours
b) soft rot
c) leaf spot
d) wilt

Q.18. Cell wall of fungi belonging to ascomycetes contains (1)
a) chitin
b) cellulose
c) peptidoglycon
d) protein

Q.19. Typical conditions used for sterilization are (1)
a) 100^0C for 10 minutes
b) 121^0C at 15 psi for 15 minutes
c) 80^0C for 10 minutes
d) 176^0C for 15 seconds

Q.20. Mycoplasmas are sensitive to (1)
a) penicillin
b) tetracycline
c) sugars
d) amino acids

Q.21. Which one is the example of host specific toxin (1)
a) tabtoxin
b) fusaric acid
c) pyricularin
d) victorin

Q.22. Ti plasmid is present in (1)
a) *Escherichia coli*
b) *Agrobacterium tumefaciens*
c) *Bacillus thuringiensis*
d) *Xanthomonas campestris*

Q.23. A disease affecting food conduction in plant (1)
a) vascular wilt
b) root rots
c) sandal spike
d) soft rots

Q.24. Germ theory was originated from the works of (1)
a) Antonie von Leeuwenhoek
b) Louis Pasteur
c) Alexander Fleming
d) Robert Koch

(1)

Q.25. Prokaryote without the cell wall
a) virus
b) *Escherichia coli*
c) viriods
d) spiroplasma

(1)

Q.26. The fungus which is so important for its use in genetic studies is
a) Aspergillus
b) Rhizopus
c) Penicillium
d) Neurospora

(1)

Q.27. Appressorium is a cellular structure
a) bacteria
b) fungi
c) virus
d) none

(1)

Q.28. The first antibiotic penicillin discovered by
a) Alexander Fleming
b) Stanley
c) Stakmann
d) Louis Pasteur

(1)

Q.29. Virus which can kill the bacteria is known as
a) virion
b) bacteriophage
c) tobacco mosaic virus
d) cauliflower mosaic virus

(1)

Q.30. Optimum temperature for growth of *Escherichia coli*
a) 37^0C
b) 55^0C
c) 40^0C
d) 10^0C

PART – B (DESCRIPTIVE TYPE)

(6x5 =30)

Attempt any five questions.

Q.1. What steps should be taken into consideration to avoid the contact between pathogen and susceptible host?
Q.2. What are essential components/conditions for an epiphytotic or epidemic in plants?
Q.3. Explain defense mechanisms in plants.
Q.4. Define the following (a) spiroplasma (b) bacteria and (c) virus.
Q.5. Explain the role of enzymes in pathogenesis.
Q.6. Differentiate between plant cell and animal cell.
Q.7. Write a short note on fungi.

Roll No. _____

B. Sc (Hons.) Agriculture, 2ND Semester (REAPPEAR)
Soil Fertility, Soil Chemistry and Nutrient Management - 17010208
END TERM THEORY EXAMINATION

Time: 03:00 Hrs **Max. Marks: 60**

Instructions:

1. Write Roll No. on the Question Paper.
2. Candidate should ensure that they have been provided with correct question paper. Complaint(s) in this regard, if any, should be made within 15 minutes of the commencement of the exam. No complaint in this regard will be entertained thereafter.
3. Question No. 1 is compulsory. Marks are indicated against each question.
4. Draw diagram wherever required.

PART – A (Compulsory)

Q.1. Fill in the blanks following: **(10 x1 = 10)**

a) Acid Soil generally reclaimed by.....
b) Farm yard manure, compost and green manure are..... organic manures.
c) Abundant element in calcareous soil is.....
d) Dhaincha is grown in .....season.
e) Nitrogen deficiency appears on .....leaves.
f) In saline soil, ESP is less than .....of the total C.E.C.
g) Full form of E.C. is.....
h) In alkali soil pH is .....
i) SSP contains .....% phosphorus.
j) Deficiency of .....in rice is called *Khaira disease*.

PART – B

Attempt any FIVE questions. **(5 x 10 = 50)**

Q.2. Define / comment the following.
a) Hidden Hunger
b) Chlorosis
c) Compost
d) Quality of irrigation water
e) White soil

Q.3. Define the fertilizers. Explains the types of fertilizers.
Q.4. What are the criteria of essentiality? Explains the role of major nutrients in plant growth.
Q.5. Differentiate between the following.
a) Macro nutrients and trace nutrient
b) Organic fertilizers and chemical fertilizers
c) Soil fertility and productivity
d) Deficiency symptoms and toxicity symptoms
e) Bulky and organic manures
Q.6. Discuss the role, deficiency symptoms and control of nitrogen, and zinc in plant growth.
Q.7. What are the ways to increase the fertilizers use efficiency.
Q.8. Elaborate the rapid tissue test. What are chemical methods of soil fertility evaluation?

**********ETE MAY 2018**********

Roll No._____.

B. Sc. (Hons.) AGRICULTURE) – 2nd SEMESTER

[SUBJECT - SOIL FERTILITY, SOIL CHEMISTRY AND NUTRIENT MANAGEMENT]

(PAPER CODE– 17010208)

END TERM THEORY EXAMINATION

Time: 03:00 Hrs. **Max Mark: 60**

Instructions:

1. Write your Roll No. on the Question Paper.
2. Candidate should ensure that they have been provided with the correct question paper. Complaints in this regards, If any, should be made within 15 minutes of the commencement of the exam. No complaint(s) will be entertained thereafter.
3. Each Part is Compulsory. Marks are indicated against each question.
4. Draw the diagram wherever required.

PART-A (OBJECTIVE TYPE QUESTIONS OMR SHEETS)

ATTEMPT ALL QUESTIONS: - **(30X1=30)**

Q. 1. Soil gets nutrients from diammonium phosphate: **(1)**

a) Nitrogen
b) Phosphorus
c) Nitrogen and Phosphorus
d) Potash

Q. 2. Which one is high mobile plant nutrients? **(1)**

a) Potassium b) Sulphur c) Nitrogen d) Calcium

Q. 3. Which one is not essential macronutrient for plant? **(1)**

a) Zinc b) Nitrogen c) Phosphorus d) Potash

Q. 4. Acid soils pH is **(1)**

a) 7.0 b) 4.2 c) 8.5 d) 7.2

Q. 5. Deficiency of nitrogen in soil turns the leaves of plant into **(1)**

a) Black b) Blue c) Red d) Yellow

Q. 6. Compost improves the soil condition **(1)**

a) Physical b) Chemical c) Biological d) A, B and C

Q. 7. Soil fertility is called as: **(1)**

a) Fertilizers
b) Inheritance capacity of soil
c) Both
d) None of these

Q. 8. Saline soil pH value ranges from: **(1)**

a) 6.5-7.5
b) 4.5-5.5
c) 5.5-6.5
d) 7.5-8.5

Q. 9. Abundant element in calcium soil is: **(1)**

a) Ca b) K c) Na d) Zn

Q. 10. Medium salinity of water E.C. contains value **(1)**

a) Less than 750 b) More than 250 c) 250-750 d) None of these

Q. 11. Saline soils is reclaimed by: **(1)**

a) Lime b) Gypsum c) Basic slag d) none of these

P.T.O.

Q. 12. Electrical conductivity (EC) mmhos/cm of alkali soil is: (1)

a) More than 4 b) Less than 4 c) Medium d) High

Q. 13. Availability of Fe, Mn , Zn and Cu in acid soil is: (1)

a) Very less b) Less c) Medium d) All of the above

Q. 14. Water is available to plant at atmosphere tension. (1)

a) 31 b) 1000 c) 15-1/3 d) 10000

Q. 15. Concentration of total soluble salts is called as: (1)

a) Sodium hazard b) Salinity hazard

c) Sodium and Salinity Hazard d) All of three

Q. 16. Ammonium sulphate contains % nitrogen. (1)

a) 46 b) 26 c) 20.6 d) 58

Q. 17. Capacity of the soil to produce a particular crop is expressed in terms of: (1)

a) Soil fertility b) Nutrient c) Toxicity d) Productivity

Q. 18. Which fertilizers can be used as foliar spry? (1)

a) Nitrogen b) Phosphorous c) Potassium d) Calcium

Q. 19. Khaira disease of rice is control by: (1)

a) Nitrogen b) Boron c) Sulphur d) Zinc sulphate

Q. 20. Partially mobile nutrients is: (1)

a) Nitrogen b) Zinc c) Copper d) Calcium

Q. 21. Which scientist gave the criteria of essentiality? (1)

a) Arnon b) Joffe c) Marbut d) Raman

Q. 22. Ammonium sulphate nitrate contains % sulphur. (1)

a) 12 b) 16 c) 21 d) 18

Q. 23. Chemical formula of pyrites is: (1)

a) Fe_3SO_4 b) FeSO c) $FeSO_2$ d) $FeSO_4$

Q. 24. Farm Yard Manure (FYM) contains of sulphur. (1)

a) 0.5 b) 0.25 c) 0.04 d) 1.04

Q. 25. ' Grey-speck' disease is controlled by: (1)

a) Mo b) Mn c) Zn d) Cu

Q. 26. Which one is beneficial nutrient? (1)

a) Na b) Mn c) Zn d) N

Q. 27. CSSRI was established in (1)

a) Delhi b) Karnal c) Bhopal d) Hyderabad

Q. 28. Phosphorous is taken up by plant in the form of (1)

a) P_2O_5 b) P_2O c) H_2PO^- d) HPO_4^{--}

Q. 29. Which of the following is responsible in preparation of vermicompost? (1)

a) Earthworms b) Centipedes c) Millipedes d) Termites

Q. 30. Generally zinc – fixation is found at- (1)

a) Low pH value b) High pH value c) Neutral pH value d) None of these

PART-B (DESCRIPTIVE TYPE)

Long Essay: - (6)

Q. 1. What the criteria of essentiality and classify plant nutrients?

OR

What do you mean by fertilizers and explains the types of fertilizers?

Short Notes:- (2x3=6)

Q. 2. Write short notes on any three of the following.

a) Plant nutrients
b) Manures
c) Vermicompost
d) Deficiency
e) Acid soil

Definitions: - (2x3=6)

Q. 3. Define any three of the following

a) INM
b) Luxury consumption
c) Quality of irrigation water
d) Availability
e) Toxicity

Discriminatory / Differentiation Questions:- (2x2=4)

Q. 4. Differentiate between.

a) Straight fertilizers and complex fertilizers
b) Soil fertility and productivity

Problem Based Questions:-

Q. 5. Explain the methods of reclamation of acid soil. (3)

Q. 6. Explain the scheduling of nutrients application. (3)

Short note questions:-

Q. 7. Write short notes on calcareous soil (2)