

GUJARAT AGRICULTURAL UNIVERSITIES

1. Anand Agricultural University, Anand
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2. Junagadh Agricultural University, Junagadh
4. S. D. Agricultural University, S. K. Nagar

Fifth Semester B.Sc. (Hons.) Agriculture (Old Regular) End Examination December - 2019

PART - II : SUBJECTIVE

Course No.: Ag. Extn. 5.3 (Fourth Dean)

Course Title: Extension Methodologies for
Transfer of Technology

Date & Day: 18 / 12 / 2019, Wednesday

Time: 09.30 hrs. to 12.00 hrs.

Credit: 1 + 1 = 2

Total Marks: 40

Q.1. Define / Explain the following terms. (Any Ten)

10.00

- | | |
|---------------------|----------------------------|
| 1. Perception | 2. Diffusion |
| 3. Specimen | 4. Exhibition |
| 5. Adoption | 6. Message |
| 7. Innovation | 8. Agricultural journalism |
| 9. Feedback | 10. News |
| 11. Homophily | 12. Heterophily |
| 13. Personal letter | 14. Channel |

Q.2. Differentiate the following. (Any Four)

10.00

1. Adoption process and Diffusion process
2. Model and Specimen
3. Individual contact method and Mass contact method
4. Result demonstration and Method demonstration
5. Teleconferencing and Video conferencing
6. Workshop and Seminar

Q.3. Write short notes. (Any Four)

10.00

1. Brain storming
2. Sources of agricultural news
3. Types of news
4. Krishi Vigyan Kendra
5. Barriers in communication
6. Kisan call centre

Q.4. Solve following question. (Any Two)

10.00

1. Define extension teaching method and give the detail classification of extension teaching method.
2. Explain the adaptor's categories with diagram.
3. Define communication and explain key element of communication process.

University Seat No.:..... Reg. No.:..... Centre :

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Fifth Semester (Regular) B.Sc. (Hons.) Agril. End Examination Dec-2019

Course No.: Biotech. 5.1 Title of Course : Introductory Biotechnology (1+1)

Date : 20/12/2019

Time : Friday

Time : 9.30 to 11.30 hr.

Total Marks : 50

Q.1 (A) Define the following (ANY SEVEN) : (07)

- | | |
|--------------------|------------------|
| 1. Tissue culture | 5. Totipotency |
| 2. Callus | 6. Biotechnology |
| 3. Differentiation | 7. Explant |
| 4. Vector | 8. Central dogma |

(B) Draw the suitable illustration of micropropagation, its stages and applications. (05)

OR

What is molecular marker ? Explain RAPD marker in detail.

Q.2 (A) Differentiate following (ANY FOUR) : (08)

1. Direct Vs Indirect embryogenesis
2. Transcription Vs Translation
3. Conventional Vs Transgenic breeding
4. Gynogenesis Vs Androgenesis
5. Cybrid Vs Hybrid

(B) State whether the statement is True or False (05)

- (1) Gynogenesis is widely popular as compared to androgenesis.
- (2) Anther culture was discovered by Guha and Maheshwari.
- (3) Callus is the undifferentiated mass of cell.
- (4) Embryo culture has been successful in overcoming the problems of seed dormancy.
- (5) The relatively high level of cytokinin and auxin favored shoot formation during organogenesis.
- (6) Auxin have been used for cell division and root differentiation.
- (7) Synthetic seeds are derived through sexual fertilization.
- (8) A true somatic hybrid is regenerated from heterokaryon.
- (9) A tool for cutting DNA molecule is ligase.
- (10) The process of transferring plasmid into new host cell is called transduction.

Q.3 (A) Do as directed (ANY FOUR) : (08)

1. Give the basic steps of plant tissue culture.
2. Enlist different techniques of tissue culture for crop improvement.
Give the significance of any one.
3. Give brief account of organogenesis ?
4. Procedure for release of transgenic plants.
5. Give steps of PCR with explanation.

(P.T.O.)

- (B) Match the following : (03)
- | | |
|----------------------|---|
| 1. Murashige & Skoog | A. Father of tissue culture |
| 2. Cell culture | B. Guha & Maheswari |
| 3. Protoplast | C. Nutrition media for plant tissue culture |
| 4. Haberlandt | D. Production and secondary metabolism |
| 5. Haploid plant | E. Cell without cell wall |
| 6. RFLP | F. Non PCR based technique |

- (C) Write the full form of following (02)
- | | |
|--------|---------|
| 1. SSR | 3. PCR |
| 2. IAA | 4. RDAC |

- Q.4 (A) Write short note on following (ANY FOUR) : (08)

1. Cryopreservation
2. Protoplast isolation
3. DNA replication
4. Restriction enzymes
5. Gene cloning

- (B) Give the most appropriate answers (04)

1. Which of the following is the most popular for making artificial seeds ?

A Potassium nitrate	B Sodium alginate
C Sodium nitrate	D Agar
2. Transfer of a part of old culture to a new culture vessel is called

A Inoculation	B Subculturing
C Multiple culture	D Regeneration
3. The two enzymes commonly used for isolation of protoplasts from plants are

A Cellulase & Lipase	B Cellulase & Amylase
C Pectinase & Lipase	D Pectinase & Cellulase
4. Golden rice is

A A variety of rice growing along the yellow river in China	B Wild variety of rice with yellow coloured grains
C A transgenic rice having gene for β -carotene	D Long stored rice having yellow colour
5. The initiation codon is

A UUU	B AUG
C UGA	D GUG
6. The capability of any living cell of a plant in generating an entire new plant is called as

A Regeneration	B Totipotency
C Embryogenesis	D Morphogenesis
7. Variation caused by *in vitro* culture is called as

A Micropropagation	B Organogenesis
C Somaclonal variation	D All of these
8. A bacterium commonly used in plant genetic engineering is

A <i>E. coli</i>	B <i>Agrobacterium</i>
C <i>Mycobacterium</i>	D <i>Rhizobium</i>

-X-X-X-X-X-X-

University Seat No. _____

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Fifth Semester B.Sc. (Hons.) Agriculture (Old Regular) End Examination December - 2019**PART - I : OBJECTIVE****Course No.:** Ag. Extn. 5.3 (Fourth Dean)**Course Title:** Extension Methodologies for
Transfer of Technology**Credit:** 1 + 1 = 2**Time:** 09.30 hrs. to 10.15 hrs.**Date:** 18 / 12 / 2019, Wednesday**Total Marks:** 40**Write the correct option (A/B/C/D) of the multiple-choice questions in given answer sheet.**

1.	The number of elements in the Communication Model of Aristotle is							
	A	5 elements	B	6 elements	C	4 elements	D	3 elements
2.	Television is primarily a							
	A	Media mix	B	Medium	C	Source	D	Channel
3.	It is traditional teaching method							
	A	TV	B	Film	C	Drama	D	Fax
4.	The techniques of handling message before placing it in the channel is called							
	A	Decoding	B	Treatment	C	Distortion	D	Feedback
5.	Audience response is an element in the communication model of							
	A	Berlo	B	Legans	C	Shanon and Weaver	D	Laswell
6.	The basic characteristics of a good message include							
	A	Timeliness	B	Specificity	C	Credibility	D	All of these
7.	The most important element in the communication process is							
	A	Source	B	Channel	C	Receiver	D	Message
8.	If receiver believe that the message is not only true but good also than the response is called							
	A	Overt action	B	Cognitive	C	Affective	D	All of these
9.	Which principle is useful for bringing change in the skill of audience?							
	A	Seeing is believing	B	Learning by doing	C	Both A and B	D	None of these
10.	It is a projected audio-visual aid							
	A	Radio	B	Transparency	C	Film	D	Poster
11.	It is the most effective method of communication for improving skill of the audience							
	A	Group contact	B	Face to face contact	C	Mass contact	D	None of these
12.	It is the source of the message							
	A	Receiver	B	Channel	C	Communicator	D	None of these
13.	Communication process is stabilized by							
	A	Feedback	B	Credibility	C	Channel	D	Empathy
14.	The type of audience which is important for effective communication process is							
	A	Active audience	B	Available audience	C	Passive audience	D	None of these
15.	Acceptance and Rejection are one of the kind of							
	A	Empathetic feeling	B	Treatment of message	C	Feedback	D	Failure of channel

16.	The communication type best apply to largely illiterate audience is							
	A	Written	B	Oral	C	Informal	D	Formal
17.	Effectiveness of any channel depends upon its							
	A	Credibility	B	Empathy	C	Feedback	D	Specificity
18.	The people to whom communicator desire to message is							
	A	Audience	B	Treatment	C	Message	D	Receiver
19.	Feedback in communication is for							
	A	Information	B	Intelligence	C	Improvement	D	Interaction
20.	People spend most of their time in							
	A		B		C		D	
21.	In India, the first KVK was established in the year							
	A	1974	B	1975	C	1973	D	1978
22.	Which of the following is essential for effective management of KVK?							
	A	SAC	B	ATMA-GB	C	LMC	D	All of these
23.	Folder is _____ method							
	A	Audio	B	Visual	C	Audio-visual	D	Written
24.	It is a 2 Dimension projected visual method							
	A	Slide	B	Poster	C	Film	D	Drama
25.	The method for presenting information to a large number of persons in a short period of time is							
	A	Field trip	B	Workshop	C	Public meeting	D	Seminar
26.	The helpline number of Kisan Call Centre is							
	A	1800-180-1515	B	1800-180-1551	C	1800-180-1525	D	1800-180-1575
27.	It is an electronic audio-visual medium which provides picture with sound							
	A	Film strip	B	LCD projector	C	Television	D	Radio
28.	The process of spreading new idea from its source of invention to its ultimate users							
	A	Adoption	B	Diffusion process	C	Rejection	D	Decision
29.	It is a network of large geographical area							
	A	LAN	B	WAN	C	Kiosk	D	None of them
30.	A decision to continue full use of an innovation is:							
	A	Diffusion	B	Adoption	C	Rejection	D	Feedback
31.	It is a mass contact methods							
	A	Demonstration	B	Field visit	C	News paper	D	Farmer call
32.	The effective method in coverage of large area is							
	A	Personal contact	B	Group contact	C	Mass contact	D	All of these
33.	The idea which is perceived as a new							
	A	Information	B	Innovation	C	Invention	D	Perception
34.	It is a three dimensional non-projected visual aid:							
	A	Poster	B	Folder	C	Slides	D	Specimen
35.	The communication which take place between two subordinates of the same superior is called							
	A	Horizontal	B	Upward	C	Downward	D	Cross wise
36.	It is a small group discussion technique having two way communication for participants							
	A	Symposium	B	Panel	C	Debate	D	Forum
37.	A decision not to continue with the innovation after previously adopted it							
	A	Rejection	B	Acceptance	C	Discontinuance	D	None of them
38.	The person first to adopt new ideas or innovation							
	A	Innovator	B	Early adopter	C	Late adopter	D	Laggards
39.	Lecture is _____ method							
	A	Audio	B	Visual	C	Audio-visual	D	All of these
40.	Method in which mostly one way communication take place							
	A	Lecture	B	Forum	C	Visual	D	Audio
41.	Grow more food is an example of							
	A	Campaign	B	Fieldtrip	C	Exhibition	D	None of these

42.	The first KVK in India was established at							
	A	Bihar	B	Rajasthan	C	Pondicherry	D	Punjab
43.	Which one is interactive communication method							
	A	Campaign	B	Television	C	Internet	D	Radio
44.	The sources of agricultural news is							
	A	Kisan meal	B	SAUs	C	Demonstration	D	All of them
45.	Farm Science Centre is a synonym of							
	A	FTC	B	FDG	C	Tele club	D	KVK
46.	The word communication is derived from communis which means							
	A	Oral speech	B	Common	C	Message	D	Community
47.	The person who adopt an innovation just after the average people of the society							
	A	Early adopter	B	Early majority	C	Late majority	D	Laggards
48.	Which of the following methods is useful to produce as many as possible solutions within stipulated time on a given problem?							
	A	Workshop	B	Buzz Session	C	Brain Storming	D	Symposium
49.	To decode a message is to							
	A	Interpret a message	B	Reject a message	C	Translate ideas into code	D	Evaluate a message
50.	An example of a communication channel is							
	A	Face-to-face conversation	B	Feedback	C	Context	D	Noise
51.	Effective communication is essentially a							
	A	Three-way process	B	One-way process	C	Two-way process	D	None of these
52.	Managers need effective communication skills to perform the following roles							
	A	Decisional	B	Impersonal	C	Personal	D	Interpersonal
53.	Radio and tape-recorder are the example of							
	A	Audio - aids	B	Visual - aids	C	Audio - Visual aids	D	All of these
54.	The way in which message is handled before placing in the channel							
	A	Decoding	B	Distortion	C	Treatment	D	Feedback
55.	Positive gestures are body signals that make you look							
	A		B		C		D	
56.	The problem of homogeneity is related to							
	A	Message	B	Communicator	C	Channel	D	Receiver
57.	'Destination' is an important element in the Communication Model of:							
	A	Berlo	B	Laswell	C	Schramm and Weaver	D	Aristotle
58.	There is more chances of effective communication, if audience is							
	A	Heterogeneous	B	Homogeneous	C	Educated	D	All of these
59.	It is a three-dimensional non-projected visual aid:							
	A	Poster	B	Folder	C	Slide	D	Specimen
60.	The link that connects the source with receiver is							
	A	Message	B	Communication effect	C	Channel	D	Treatment
61.	Communication barriers includes							
	A	Physical	B	Psychological	C	Cultural	D	All of these
62.	It is a traditional teaching method							
	A	Film	B	Television	C	Fax	D	Drama
63.	It is a face to face contact method							
	A	Farm & Home visit	B	Film	C	Folder	D	Field trip

64.	The effective method in teaching new skills is							
	A	Method demonstration	B	Field trip	C	Farm visit	D	Result demonstration
65.	A plan meeting organized for discussion and practical work on specific subject							
	A	Conference	B	Workshop	C	Seminar	D	Forum
66.	The person who continues full use of an innovation							
	A	Communicator	B	Innovator	C	Adopter	D	Inventor
67.	The method helps in selecting local leaders							
	A	Group contact	B	Mass contact	C	Individual contact	D	None of these
68.	People exchange their views, opinion or an idea on an issue is called							
	A	Forum	B	Workshop	C	Conference	D	Panel
69.	Exhibition is a systematic display of							
	A	Posters	B	Charts	C	Pictures	D	All of them
70.	The method used at adoption stage is							
	A	Personal contact	B	Group contact	C	Mass contact	D	All of these
71.	It is an electronic medium which provides sound only							
	A	Field trip	B	Projector	C	Radio	D	Television
72.	Decision not to adopt an innovation without even considering the innovation							
	A	Active rejection	B	Passive rejection	C	Rejection	D	Discontinuous
73.	The desirable changes are in receiver's knowledge, attitude and action represent							
	A	Empathy	B	Fidelity	C	Entropy	D	Credibility
74.	Any obstruction, barrier, hindrance, difficulty which enter into the channel is							
	A	Treatment	B	Response	C	Empathy	D	Noise
75.	The method is suitable for creating general awareness amongst the people							
	A	Individual contact	B	Group contact	C	Mass contact	D	All of these
76.	It is a printed communication through key board terminals							
	A	Video conferencing	B	Audio conferencing	C	Computer conferencing	D	Audio-visual conferencing
77.	The helpline number of Kissan Call Centre is							
	A	1515	B	1551	C	1115	D	5151
78.	Which is the best method of teaching Science to farmers?							
	A	Lecture	B	Seminar	C	Campaign	D	Demonstration
79.	Which of the following methods include practical session?							
	A	Seminar	B	Symposium	C	Workshop	D	Buzz session
80.	Oral communication is also known as							
	A	Verbal communication	B	Non verbal	C	Formal	D	Informal

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Fifth Semester B.Sc. (Hons.) Agriculture (Regular) End Examination-December 2019 Part – B : Subjective

Course No.: Ag. Engg. 5.3

Title of Course: Protected Cultivation and Post
Harvest Technology- 2(1+1)

Date: 17-12-2019
Tuesday

Time: 10:15-12:00

Marks: 40

Q.1.A Answer the following questions (Any Two)

(6.0)

- (i) Explain the working of multi-crop thresher and its components with neat sketch.
- (ii) Describe in brief the plant response to components of crop micro-climate. Write the equation depicting photosynthesis.
- (iii) Explain castor sheller and groundnut decorticator.

- B** A greenhouse of size 20m × 10m is having a cropped area of 150m². The available moisture holding capacity of the greenhouse soil is 15cm/m and the depth of the root zone is 1m. Irrigation has to be done when 40% of the available moisture in the root zone is depleted. The peak rate of moisture used by the crop is 4 mm/day. Water application efficiency (ratio of water stored in root zone of plants to water delivered to the soil) in the root zone is 70%. Determine the net depth of water application, irrigation period, and depth of water pumped per application and required capacity of the irrigation system in litres/minute for 8 hours a day. **(4.0)**

Q.2.A Explain the following (Any Three)

(6.0)

- (i) Explain fan and pad cooling system in greenhouse.
- (ii) Enlist different grain storage methods and explain cylindrical grain bin.
- (iii) Explain direct and indirect methods of moisture measurement.
- (iv) Explain LSU dryer with neat sketch.

- B** It is desired that 4 tons of parboiled paddy is to be dried on the open floor under sun from 30% m.c. to 15% m.c. during 12 hrs effective time. The average rate of water removal is 0.5 Kg/m²-h. Calculate the floor area required for sun drying. **(4.0)**

Q.3.A Write short note (Any Three)

(6.0)

- (i) Site selection and orientation of greenhouse
- (ii) Winnower
- (iii) Rules of watering in greenhouse
- (iv) Importance of post-harvest technology

- B** Five tonnes of paddy with 22% m.c.(w.b.) is to be dried to 10% m.c. (d.b.). Calculate the weight of bone-dry product, water evaporated and dried product. **(4.0)**

Q.4.A If a rigid-frame or post and rafter freestanding greenhouse 20 feet wide by 40 feet long, 16 feet high at the ridge, with 10 feet sidewalls, is covered with double-layer glass from the ground to the ridge, what size gas heater would be needed to maintain 60°F on the coldest winter night (0°F) (heat loss factor, $u = 0.8 \text{ Btu/h ft}^2 \text{ } ^\circ\text{F}$) . **(4.0)**

B Determine moisture content at different depth, moisture content in root-zone, net irrigation rate and gross irrigation required for the following observations of GH. **(4.0)**

Sr. No.	Depth of sampling (cm)	Wt. of moist soil (gm)	Dry wt. of soil (gm)
1	00-15	131	123
2	16-30	139	124
3	31-45	119	112
4	46-60	108	99

- (i) Soil moisture content and prior applying irrigation
- (ii) Soil moisture holding capacity = 10.5 cm/60 cm
- (iii) Bulk density of soil in root zone = 1.45 gm/cc
- (iv) Irrigation efficiency = 75%.

C Do as directed

(2.0)

Explain greenhouse effect. Write the benefits of protected agriculture over the conventional agriculture.

OR

Differentiate between conventional drying and freeze drying

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- Fifth Semester B.Sc. (Hons.) Agriculture (Regular) End Examination-2019

GPB 5.6 : Crop Improvement-I (1+1)

Date: 17/12/2019

Time: 09:30 to 11:30 hrs

Day: Tuesday

Marks: 50

Note: All the answers should be written in the provided answer sheet only.

Q. 1 (A) Define/ Explain the following terms (Any Eight) (4.0)

- | | | | |
|--------------------|--------------------|-----------------|-------------|
| 1. Diadelphous | 2. Teosinte | 3. Monoecious | 4. Anthesis |
| 5. Lint | 6. Protandry | 7. Xenia effect | 8. B-Line |
| 9. Pistillate line | 10. Male sterility | | |

(B) Do as directed (Any Seven) (7.0)

1. Give the ideotypes of Maize.
2. Explain the types of bloom in castor.
3. Enlist the genetic reasons for low productivity in groundnut.
4. Briefly describe the different types of sorghum.
5. Enlist the cultivated and related wild species of rice.
6. Enlist the different sex forms in cucumber.
7. Give the important quality parameters of tobacco.
8. Enlist the breeding methods of cotton.

(C) Give the full forms of the following (2.0)

- | | | | | |
|---------|---------|----------|---------|-------------|
| 1. IRRI | 2. CICR | 3. BTRS | 4. IIPR | 5. IIVR |
| 6. IIOR | 7. NRCG | 8. AVRDC | 9. CTRI | 10. ICRISAT |

Q. 2 (A) Fill in the blanks (5.0)

1. The source of dwarfing gene in rice is _____.
2. _____ is the source of male sterile cytoplasm in Pearl millet.
3. Resistant to *striga* is a specific breeding objective of _____ crop.
4. Staminate flower of maize is known as _____.
5. _____ is the anti-nutritional factor in groundnut.
6. The first CGMS based hybrid of pigeonpea is _____.
7. _____ is father of hybrid cotton.
8. Bitterness in bitter gourd is due to _____ compound.
9. Castor belongs to _____ family.
10. _____ crop is considered as golden Nugget of the orient.

(B) Write short note (Any Four) (8.0)

1. Bt Cotton
2. Genetic origin of cultivated groundnut
3. Golden Rice
4. Pistillate lines in Castor
5. Classification of pigeonpea

P.T.O.

Q. 3 (A) Write the important breeding objectives (Any Four)

(6.0)

1. Rice
2. Cotton
3. Pigeonpea
4. Cucurbits
5. Maize

(B) Furnish the information in the given table

(6.0)

Name of Crop	Botanical Name	Family	Chromosome number	Centre of origin	Variety/ Hybrid
Sesame					
Okra					
Greengram					
Cucumber					

Q. 4 (A) Whether the given statements are True/False

(3.0)

1. Combine Kafir 60 A is the source of male sterile cytoplasm in maize.
2. EGMS system is one line breeding method of hybrid rice development.
3. *Glycine max* is botanical name of soyabean
4. Pearlmillet is having protandrous nature
5. Multilines are a mixture of purelines.
6. Sorghum cannot tolerate heat, drought, salt and aluminium toxicity.

(B) Differentiate the following (Any Four)

(4.0)

1. *Nicotiana tabacum* Vs *Nicotiana rustica*
2. *Indica* Rice Vs *Japonica* Rice
3. Bunch Vs Spreading type groundnut
4. Monopodia Vs Sympodia
5. A-Line Vs R- Line

(C) Justify the following statements (Any Five)

(5.0)

1. Emasculation is not necessary for hybrid seed production of castor.
2. Earliness is desirable breeding objectives in all crops.
3. Though flowers are above ground level in groundnut, peg formation take place below ground level.
4. TMS source of cytoplasm is not used for hybrid seed production in maize.
5. Resistance to shattering is an important breeding objective in pulses.
6. Manual hybrid seed production is feasible in cotton.

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- Fifth Semester B. Sc. (Hons) Agril. (Regular) End Examination- December 2019

COURSE NO. : LPM-5.1

Course Title: RUMINANT PRODUCTION AND MANAGEMENT

Date: 18/12/2019

Time: 09.30-11.30 Hrs.

Day: Wednesday

Total Marks: 50.00

All questions are compulsory

All answers must be written in the answer sheet

Q. I (A) Choose the correct answer from the options given **4.00**

1. The group of buffalo is known as
a. Herd b. Flock c. Mass d. Community
2. Act of parturition in goat is called
a. Calving b. Lambing c. Kidding d. Foaling
3. Which of the following is a breed of Gujarat ?
a. Murrah b. Nili Ravi c. Jafarabadi d. Pandharpuri
4. Which word indicates the *Bos indicus* correctly is
a. Humpless b. Zebu c. Non Ruminant d. Exotic
5. Cereal grains are very good source of
a. Protein b. Minerals c. . Energy d. Vitamins
6. Gestation period of cow is
a. 310 days b. 280 days c. 250 days d. 360 days
7. The best method for milking of dairy animals is
a. Full hand b. Knuckling c. Stripping d. None of these
8. The percentage of world's livestock population in India is
a. 12 % b. 16 % c. 20 % d. 24 %

(B) Define or explain the following (Any six) **3.00**

- | | |
|---------------------|---------------------|
| 1. Domestication | 2. Animal husbandry |
| 3. Biological Value | 4. Ration |
| 5. Evolution | 6. Lactation length |
| 7. Roughage | 8. Heifer |

(C) What is Artificial insemination ? Discuss the advantages and disadvantages of AI. **4.00**

Q.II. (A) fill in the blanks **4.00**

1. The process of extra nutrients supplied to the advanced pregnant animals is known as _____
2. The hormone responsible for holding up of milk in mammary gland is _____
3. Freezing point of milk is _____ °C
4. Frozen Semen is solidified (frozen) and preserved at _____ °C in Liquid N₂
5. Artificial method of calf raising is also known as _____

6. The percentage of milk obtained from rear and fore quarter of lactating animal is _____% & _____%, respectively
7. The test performed to detect mastitis in early stage is _____

(B) Short notes (Any four)

4.00

1. Loose housing system
2. Method of selection
3. Protein digestion in ruminants
4. Physical and economical aspects of Gir cattle
5. Physical and economical aspects of Mehsana buffalo

(C) Discuss in detail the role of animal husbandry in national economy

5.00

Q.III (A) Match the following

4.00

Column A	Column B
1. Foot and Mouth disease	A. N*6.25
2. Hemorrhagic Septicemia	B. Concentrate
3. Milk fever	C. Viral disease
4. Crude Protein	D. 550-600 °C
5. Inbreeding	E. Probiotic
6. Lactobacillus	F. Bacterial Disease
7. Total Ash	G. Production of Sire
8. Cotton seed cake	H. Metabolic Disease

(B). Justify the following statements

2x4=8.00

1. Organic manure is considered as life of soil.
2. Buffaloes are considered as the backbone of India Dairy Industry.
3. Mehsana buffaloes are more suitable for city milk producer.
4. Colostrums must be fed to the calf immediately after calving .

Q. IV. (A) State following statements True or False

4.0

1. "Sawaichal" is a breed characteristic of Kankrej cattle
2. Ovulation in cow occurs in Metestrus phase.
3. NDDDB has headquarter at Ahmedabad.
4. Bullock is a castrated male used for draft purpose.
5. Patanwadi is a black faced sheep breed of Gujarat.
6. Breeding between full brother and full sister is a type of close breeding.
7. Rumen is considered as the true stomach of ruminant
8. Sheep are seasonal breeders.

(B) Explain the following in detail (Any four)

2.5 x4=10.00

1. Clean milk production
2. Feeding management of milking animals
3. Advantages of goat farming
4. Out-breeding
5. Utility classification of sheep

@@@@@@@@@@@@@@@@

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Fifth Sem. B.Sc. (Hons.) Agriculture (Regular) End Examination- December 2019

Part – A : Objective

Course No.: Ag. Engg. 5.3

Title of Course: Protected Cultivation and Post
Harvest Technology- 2(1+1)

Date: 17-12-2019

Time: 09:30-10:15

Marks: 40

Tuesday

Marks Obtained:

➤ Write the correct option A/B/C/D in **CAPITAL LETTERS ONLY** against the question number on the **ANSWER SHEET ONLY** (First Page).

➤ Do not write/mark anything on the question paper.

Q.1	Choose the correct answer from the following MCQ.
1	Which solution is used in Hydroponics technology for growing plants? (A) Brine (B) Nutrient (C) Sugar (D) Soil
2	Which type of dryers serve as storage unit after drying is completed? (A) Batch or bin (B) Continuous flow (C) Freeze (D) Solar
3	The origin of the Oldpad thresher are : (A) Rajasthan (B) Maharashtra (C) Gujarat (D) Punjab
4	Temperature is measure the level of (A) Radiation (B) Heat (C) Humidity (D) Ventilation
5	In greenhouse, evaporative cooling system is used for... (A) Active summer cooling (B) Active winter cooling (C) Passive summer cooling (D) Passive winter cooling
6	During the night time, the air temperature inside greenhouse... (A) Decreases (B) Increases (C) Remains stable (D) None of the above
7	Cylinder and concave clearance depends on: (A) Manufacturer (B) Plant size (C) Crop and variety (D) None of the above
8	Rotary driers are : (A)Batch type (B) Continuous type (C) Mixing type (D) All the above
9	In which type of green house the arches or trusses are supported by angle-iron purlins? (A) Pipe framed (B) Truss framed (C) Wooden framed (D) None of the above
10	During summer, what is desirable greenhouse temperature for effective crop growth? (A) Equivalent to the ambient temperature (B) Higher than the ambient temperature (C) Lower than the ambient temperature (D) None of the above
11	Light, temperature, air compositions and nature of the root medium are components of: (A) Crop growth (B) Crop health (C) Crop intensity (D) Crop micro-climate
12	Uneven span type green house is constructed on... (A) Hilly terrain (B) Leveled ground (C) Undulated land (D) None of the above
13	For effective cooling, what is drawn into green house through its openings? (A) Large amount of cooled air (B) Large amount of cooled water (C) Large amount of humid air (D) None of the above
14	Value of moisture content of fruits and vegetables on dry basis as compared to that of moisture content on wet basis is... (A) Less (B) More (C) Negligible (D) Same
15	What is the technical name given to the tubes that do the actual winter cooling by simple mixing of the outside ambient air? (A) Convection tubes (B) Conduction tubes (C) Radiation tubes (D) Copper tubes
16	All biochemical reactions in the plant are controlled by the... (A) Enzymes (B) Bacteria (C) Virus (D) Insects

17	Which type's orientation of the greenhouse provide more sunlight over the year? (A) East-West (B) North-South (C) North-west (D) South-east
18	Photosynthesis does not increase at light intensities higher than... (A) 320 lux (B) 3,200 lux (C) 32,000 lux (D) 3,20,000 lux
19	Which one is the indirect method of moisture determination? (A) Brown Duvel distillation method (B) Double stage method (C) Electrical resistance method (D) Single stage method
20	In actual winter cooling, simple mixing of outside ambient air is takes place through: (A) Radiation (B) Conduction (C) Convection (D) None of above
21	Initial cost of glass green house is ____ as compared to double layer film plastic green house (A) Less (B) Equal (C) Same (D) More
22	Removal of moisture content from any product/ grain to bone dry level is called: (A) Dehydration (B) Drying (C) Evaporation (D) None of above
23	An increase in the concentration of greenhouse gases in the atmosphere is termed as... (A) Green house defect (B) Green house effect (C) Green house maintenance (D) Green house management
24	An even span type green house design is used for the green house of... (A) Extra large size (B) Large size (C) Medium size (D) Small size
25	The drying process involves: (A) Heat transfer (B) Mass transfer (C) Heat and mass transfer (D) None of these
26	If more broken grains are coming from thresher than what will you do: (A) Reduce input (B) Reduce cylinder speed (C) Increase cylinder speed (D) Increase concave clearance
27	The highest horizontal section in top of the roof is known as: (A) Gutter (B) Purlin (C) Ridge (D) Arc
28	Fan-pad are used in: (A) Summer cooling (B) Winter cooling (C) Rainy season (D) All the above
29	Under normal conditions, carbon dioxide (CO ₂) exists as a gas in the atmosphere slightly above... (A) 300 ppm (B) 3,000 ppm (C) 30,000 ppm (D) 300,000 ppm
30	What is the name of the technology used for growing plants in nutrient solution with or without the use of an artificial medium? (A) Hydroponics (B) Hydropower (C) Hydro-gel (D) Hydro-shower
31	In greenhouse, evaporative cooling system is used for... (A) Active summer cooling (B) Active winter cooling (C) Passive summer cooling (D) Passive winter cooling
32	What is used for separating grains from chaff through an air stream created by fan? (A) Winnowing (B) Sheller (C) Thresher (D) Crusher
33	Concave is an integral part of... (A) Thresher (B) Winnowing (C) Freezer (D) Washer
34	The provision of natural ventilation is provided in which type of green house? (A) Lean-to (B) Ridge and furrow (C) Saw-tooth (D) None of the above
35	In quonset green house the pipe arches or trusses are supported by pipe purlins running along the... (A) Height of green house (B) Length of green house (C) Side walls of green house (D) Width of green house
36	In which type of green house the trusses are not used? (A) Pipe framed (B) Truss framed (C) Wooden framed (D) None of the above
37	If moisture content (d.b.) is 16%, what will be moisture content (w.b.) (A) 11.00% (B) 12.00% (C) 13.00% (D) 14.00%
38	Agricultural products have what type of nature? (A) Moisture absorbing only (B) Moisture absorbing and releasing both (C) Moisture releasing only (D) Neither moisture absorbing nor releasing

39	Which dryer operates on re-circulatory mechanism? (A) Flat bed (B) RPEC (C) Tray (D) Silo
40	If the level of carbon dioxide (CO ₂) inside a green house is less than ambient level, what will be the effect on plant growth? (A) Growth will accelerate (B) Growth will remain normal (C) Growth will retard (D) No growth at all
41	Which method of irrigation is the only means of applying uniform water and fertilizer to the plants? (A) Border (B) Flood (C) Sprinkler (D) Trickle / drip
42	The term drying refers to the removal of relatively small amount of moisture from a solid or nearly solid material by... (A) Condensation (B) Evaporation (C) Sublimation (D) Transpiration
43	IARI developed a: (A) RPEC dryer (B) Non-mixing dryer (C) Mixing dryer (D) None of above
44	Commonly wood used for the construction of traditional green house is: (A) Ply (B) Teak (C) Pine (D) Babool
45	Net irrigation required / peak use rate = (A) Amount of water application (B) Capacity of irrigation (C) Irrigation period (D) None of above
46	Hygroscopic water is called as : (A) Capillary water (B) Wilting point (C) Oven dry (D) None of above
47	The method of drying, which is independent of weather conditions, is known as... (A) Hot air drying (B) Mechanical drying (C) Sun drying (D) None of the above
48	_____ is the process of separating grain from chaff through an air stream created by fan. (A) Winnowing (B) Shelling (C) Threshing (D) Crushing
49	In general for the green houses with span less than 6m, only structures are used : (A) Pipe framed (B) Truss framed (C) Wooden framed (D) Steel framed
50	Convection drying is mostly used for drying: (A) Vegetable (B) Grain (C) Fruit (D) All the above
51	Groundnut decorticator is used for separating of (A) Husk from grain (B) Stone from grain (C) Kernel from Pod (D) Fodder from pod
52	Which cooling system is preferred in summer (A) Condensation (B) Evaporation (C) Transpiration (D) None of above
53	1000 kg of water occupies 1 m ³ space, the density of water in g/cc is (A) 0.01 (B) 0.10 (C) 1.00 (D) 10.00
54	250 ml pouch of mustard oil contains 225 g oil, the density of oil in kg/m ³ will be.... (A) 700 (B) 800 (C) 900 (D) 1000
55	The instrument used to measure the speed of wind is (A) Mannometer (B) Hygrometer (C) Pyranometer (D) None of above
56	The instrument used to measure rotational speed (rpm) is (A) Hygrometer (B) Pyranometer (C) Anemometer (D) Tachometer
57	Post harvest technology starts with the selection of proper harvest and ends with what? (A) Drying of the product (B) Marketing of the product (C) Storage of the product (D) Value addition of the product
58	Technical term related to soil & water both is: (A) Humidity (B) Radiation (C) Texture (D) Percolation
59	In the photosynthesis reaction, which type of energy is used for the production of carbohydrates and oxygen from carbon dioxide and water in presence of chlorophyll? (A) Heat energy (B) Light energy (C) Water energy (D) Wind energy
60	Value of true density of fruits and vegetables as compared to that of bulk density is... (A) Higher (B) Similar (C) Smaller (D) Un-noticeable
61	The angle between the base and the slope of the cone formed on a free vertical fall of the grain mass to a horizontal plane is known as... (A) Angle of feeder (B) Angle of hopper (C) Angle of repose (D) Angle of chute

62	Sublimation is the process of directly changing the state from... (A) Liquid to gas (B) Gas to solid (C) Solid to gas (D) Solid to liquid
63	Sun drying is one type of... (A) Radiation drying (B) Conduction drying (C) Convection drying (D) Mechanical drying
64	Safe storage of paddy (w.b.) for storage of over one year is : (A) 10 % (B) 12 % (C) 14 % (D) None of the above
65	Which is the state producing maximum groundnut in India: (A) Gujarat (B) Rajasthan (C) A.P. (D) M.P.
66	Under protected agriculture the crops are protected against ... (A) Insect infestation (B) Post harvest losses (C) Pre harvest losses (D) Unfavourable environmental conditions
67	The light intensity is measured by the international unit known as... (A) kilolux (B) kilowatt (C) kilonewton (D) kilogram
68	Fogger is used to control the _____. (A) Air flow (B) Temperature (C) Humidity (D) Ventilation
69	The EMC gives an idea about : (A) Initial moisture content of the material (B) Final moisture content of the material (C) Critical moisture content of the material (D) Whether the material will loose or gain the moisture at a particular set of atmospheric conditions
70	In an aspirator, the fan is placed at the air discharge point to create : (A) Atmospheric pressure (B) A positive higher pressure (C) A negative pressure (D) None of these
71	Removal of moisture from grain mass to a safe level of moisture content is necessary for preservation of _____. (A) Quantity (B) Quality (C) Nutritive value and viability (D) All of above
72	Maize sheller is used to separate the grains from... (A) Cob (B) Earhead (C) Plant (D) Pod
73	Pusa grain bin was developed by (A) LSU (B) IARI (C) ICAR (D) RPEC
74	In green houses forced ventilation is essential to have precise control over... (A) Air temperature (B) Carbon dioxide level (C) Humidity (D) All of the above
75	Reaper machine is used for: (A) Decortication (B) Harvesting (C) Threshing (D) Winnowing
76	Soil environment includes (A) Air Temperature (B) Solar radiation (C) Humidity (D) Soil pH
77	The optimum range of RH for green house production is: (A) 30-45 % (B) 50-65 % (C) 70-85 % (D) more than 90
78	LSU dryer is which type of grain dryer? (A) Discrete flow mixing type (B) Discrete flow non-mixing type (C) Continuous flow mixing type (D) Continuous flow non-mixing type
79	In case of grains, weight per unit volume, at a standard pressure and temperature is termed as. (A) Specific gravity (B) Mass (C) Volume (D) Density
80	To avoid the cold bite to plants, inside the greenhouse, due to freezing; some amount of _____ has to be supplied. (A) Water (B) Light (C) Heat (D) Humidification

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Fifth Semester (4th Dean) (Old Reg.) B.Sc.(Hons.) Agri. End Examination Dec., 2019

Pl. Path.5.3: Diseases of field crops and their management

Date : 16-12-2019

Day : Monday

Time : 10:15 to 12:00

Marks : 40.00

PART-I I (Subjective)

Q.1 State the causal organism and describe the characteristic symptoms of the following diseases (ANY FIVE). (10.0)

- | | |
|----------------------------------|---------------------------|
| 1. Collar rot of groundnut | 5. Sesamum phyllody |
| 2. Mosaic of tobacco | 6. Whip smut of sugarcane |
| 3. Bacterial leaf blight of rice | 7. Rust of sunflower. |
| 4. Turcicum blight of maize | 8. Blast of finger millet |

Q.2 Write the causal organism and suitable management practices for the following diseases (ANY FIVE). (10.0)

- | | |
|------------------------------|-------------------------------|
| 1. Tikka of groundnut | 5. Yellow mosaic of greengram |
| 2. Brown leaf spot of rice | 6. Loose smut of wheat |
| 3. Powdery mildew of mustard | 7. Wilt of sugarcane. |
| 4. Black arm of cotton | |

Q.3 State the causal organism, favourable climatic conditions and disease cycle of the following diseases (ANY FIVE). (10.0)

1. Rhizome rot of turmeric
2. Root rot of castor
3. Ascochyta blight of chickpea
4. Black stem rust of wheat
5. Ergot of bajara
6. Anthracnose of black gram
7. Stem rot of jatropha.

Q.4 Differentiate between the following (ANY FIVE). (10.0)

- | | |
|----------------------------|---------------------------------------|
| 1. Grain smut of sorghum | AND Long smut of sorghum |
| 2. <i>Striga</i> sp. | AND <i>Orobanche</i> sp. |
| 3. Wilt of cotton | AND Root rot of cotton |
| 4. Brown rust of wheat | AND Yellow rust of wheat |
| 5. Leaf blotch of turmeric | AND Leaf spot of turmeric |
| 6. White rust of mustard | AND Downy mildew of mustard |
| 7. Wilt of pigeonpea | AND Phytophthora blight of pigeonpea. |

X=====X=====X=====X

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4. S. D. Agricultural University, S.K. Nagar.

Fifth Semester (Reg.) B.Sc. (Hons.) Agri. End Examination: December-2019

Course No. : Pl. Path. 5.4

Course Title: Diseases of field & horticultural crops and their management - I (2+1)

Date: 16.12.2019

Time: 09:30 to 11:30 hrs.

Day: Monday

Marks: 50

Note: 1. Support your answers with suitable examples and diagrams wherever necessary.
2. Figures to the right in brackets indicate marks.

Q.1 (A) Describe characteristic symptoms of the following diseases (ANY FOUR). (8.0)

- | | |
|-------------------------------|--------------------------------|
| 1) Yellow vein mosaic of okra | 4) Downy mildew of bajra |
| 2) Bud necrosis of groundnut | 5) Angular leaf spot of cotton |
| 3) Sigatoka disease of banana | 6) Phomopsis blight of brinjal |

(B) Fill in the blanks with appropriate answer. (5.0)

- 1) "Kresek" symptoms are observed in _____ disease of paddy.
- 2) The alternate host of pathogen causing rust disease of bajra is _____.
- 3) Among the smuts of sorghum, _____ smut is the most serious disease.
- 4) Collar rot of groundnut is caused by _____.
- 5) "Shoe string" like symptoms is observed in _____ disease of papaya.
- 6) _____ juvenile stage of root-knot nematode causes initial infection to host roots.
- 7) Little leaf disease of brinjal is transmitted by _____.
- 8) *Colletotrichum* causing anthracnose disease of beans produces _____ asexual fruiting body.
- 9) _____ is the perfect stage of *Rhizoctonia solani*.
- 10) Secondary source of infection of coffee rust is through _____.

Q.2 (A) Mention favourable conditions and disease cycle of the following diseases (ANY FOUR). (6.0)

- | | |
|---------------------------|-----------------------------------|
| 1) Damping off of tobacco | 4) Stem bleeding of coconut |
| 2) Panama wilt of banana | 5) Powdery mildew of cluster bean |
| 3) Ergot of bajra | 6) Bacterial leaf blight of rice |

(B) Answer the following questions (ANY SIX). (3.0)

- 1) Who reported the khaira disorder of rice for the first time?
- 2) Name the sap transmissible viral disease of tobacco.
- 3) Name the perfect stage of pathogen causing blast disease of finger millet.
- 4) Why insecticides are used for the management of viral diseases?
- 5) Why false smut is not considered as true smut?
- 6) Enlist the spores produce by wilt causing pathogen.
- 7) Why clipping of rice seedlings is avoided at the time of transplanting?
- 8) Enlist any two biocontrol agents used for management of plant diseases.

(C) State the name of causal organism of the following diseases. (4.0)

- | | |
|----------------------------------|-------------------------------------|
| 1) Blister blight of tea | 5) Bacterial blight of cluster bean |
| 2) Alternaria blight of cotton | 6) Tungro disease of rice |
| 3) Ganoderma stem rot of coconut | 7) Late wilt of maize |
| 4) Root knot of pomegranate | 8) Rust of bajra |

Q.3 (A) Differentiate between the following diseases (ANY FOUR). (8.0)

- | | |
|---------------------------------|--------------------------------|
| 1) Turcicum blight of maize | Vs Maydis blight of maize |
| 2) Grain smut of sorghum | Vs Long smut of sorghum |
| 3) Wilt of cotton | Vs Root rot of cotton |
| 4) Early leaf spot of groundnut | Vs Late leaf spot of groundnut |
| 5) Panama wilt of banana | Vs Moko wilt of banana |
| 6) Tobacco mosaic | Vs Tobacco leaf curl |

(B) State whether the following statements are 'True' or 'False'. (4.0)

- 1) Buck eye rot disease of tomato is caused by *Alternaria solani*.
- 2) The most prominent symptoms of anthracnose disease of beans are seen on the pods.
- 3) Downy mildew of bajra is also known as green ear disease.
- 4) Turcicum leaf spot of maize are smaller than maydis leaf spot.
- 5) Metalaxyl is mainly used for management of oomycetes fungi.
- 6) Tetracycline antibiotic is effective against bacterial diseases of plants.
- 7) *Phytophthora parasitica* is a causal organism of Phytophthora blight of colocasia.
- 8) The genome of banana bunchy top virus is dsRNA.
- 9) *Macrophomina phaseolina* is the pycnidial stage of castor root rot disease.
- 10) Seed treatment is recommended for management of soil borne disease.

Q.4 (A) Write suitable management practices of the following diseases (ANY FOUR). (8.0)

- | | |
|------------------------------------|-----------------------|
| 1) Bacterial blight of pomegranate | 4) Wilt of castor |
| 2) Leaf curl of tomato | 5) Blast of paddy |
| 3) Stem rot of groundnut | 6) Foot rot of papaya |

(B) Match the following Group (A) with Group (B). (4.0)

- | Group (A) | Group (B) |
|-----------------------------------|-----------------------------------|
| 1) Leaf reddening of cotton | A. Chlamydospore |
| 2) Groundnut chlorosis | B. <i>Pentalonia nigronervosa</i> |
| 3) Sterility mosaic of pigeon pea | C. Pycnidia |
| 4) Orobanchae | D. Partial root parasite |
| 5) Banana bunchy top | E. Iron deficiency |
| 6) Tomato spotted wilt | F. Eryophid mite |
| 7) Striga | G. Cleistothecium |
| 8) Phomopsis blight of brinjal | H. Mg deficiency |
| 9) Fusarium wilt | I. Complete root parasite |
| 10) Powdery mildew | J. Thrips |

Centre:.....

Supervisor's Signature

Reg.No.:.....

Uni. Seat No.:.....

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Fifth Semester (4th Dean) (Old Reg.) B.Sc.(Hons.) Agri. End Examination Dec., 2019

Course No.: Pl. Path.5.3 **Course title:** Diseases of field crops and their management

Date : 16-12-2019

Time : 09:30 to 12:00

Day : Monday

Marks : 40.00

Part-I (Objective)

Note: Write the appropriate answer (A,B,C& D) in the bracket provided to the right side.

1. Internally seed borne fungal disease of wheat is... ()
(A) Loose smut (B) Karnal bunt
(C) Ear cockle (D) Tundu
2. Which wheat rust is complete their life cycle on *Thalictrum* sp. ? ()
(A) Black rust (B) Yellow rust
(C) Brown rust (D) White rust
3. Sexual spore of black rust of wheat is..... ()
(A) Uredospore (B) Aeciospore
(C) Pycniospore (D) Teliospore
4. Wilting syndrome in rice known as 'Kresiek' is occurs in..... ()
(A) False smut (B) Brown leaf spot
(C) Bacterial blight (D) Blast
5. Toxin produced by *Claviceps fusiformis* is.... ()
(A) Aflatoxin (B) Ergotin
(C) Fumotoxin (D) Tabtoxin
6. Bud necrosis of groundnut is transmitted by ()
(A) Aphid (B) Thrips
(C) Mites (D) Whitefly
7. Charcoal rot of maize is caused by..... ()
(A) *Macrophomina phaseolina* (B) *Sclerotium rolfsii*
(C) *Fusarium moniliforme* (D) *Pythium aphanidermatum*
8. Curling and twisting of wheat spikes with yellow slime on inflorescence and stem is a characteristic symptom of..... ()
(A) Black rust (B) Karnal bunt
(C) Ergot (D) Tundu
9. Sesamum phyllody is caused by ()
(A) Bacteria (B) Viroid
(C) Virus (D) Phytoplasma
10. Striga/Witch weed in sorghum is..... ()
(A) Complete stem parasite (B) Partial stem parasite
(C) Partial root parasite (D) Complete root parasite
11. *Sphacelotheca cruenta* causes disease in sorghum is..... ()
(A) Grain smut (B) Loose smut
(C) Long smut (D) Head smut

(P.T.O.)

12. *Fusarium oxysporum* f.sp. *ricini* causes castor wilt produces..... ()
 (A) Macroconidia (B) Microconidia
 (C) Chlamydospores (D) All of the above
13. Sclerotia of bajra ergot can be removed from the seed by floating them in..... ()
 (A) Brine/salt solution (B) Glycerol
 (C) Mustard oil (D) Kerosine
14. Khaira disease of rice is due to deficiency of..... ()
 (A) Fe (B) Ca
 (C) Zn (D) Mn
15. White rust of mustard is a..... ()
 (A) Autoecious (B) Pseudo rust
 (C) Heteroecious (D) Monoecious
16. *Sclerotium rolfsii* causes disease in groundnut..... ()
 (A) Collar rot (B) Stem rot
 (C) Root knot (D) Afla rot
17. Downy mildew of mustard is caused by ()
 (A) *Peronospora parasitica* (B) *Pseudoperonospora cubensis*
 (C) *Plasmopara viticola* (D) *Peronospora destructor*
18. Transformation of ear head into leafy structure in bajra is known as ()
 (A) Downy mildew (B) Green ear
 (C) Both A & B (D) Little leaf
19. Grey mildew of cotton is caused by ()
 (A) *Albugo candida* (B) *Botrytis cinerea*
 (C) *Rumularia areola* (D) *Ramularia foeniculi*
20. *Pyricularia grisea* causes disease in Ragi ()
 (A) Blast (B) Bacterial blight
 (C) Stem rot (D) Loose smut
21. *Phakopsora pachyrhizi* fungus is causing rust disease in ()
 (A) Bajra (B) Groundnut
 (C) Wheat (D) Soybean
22. Tylosis formation in vascular system of root is the characteristic of ()
 (A) Root rot of castor (B) Wilt of castor
 (C) Charcoal rot of maize (D) Root rot of cotton
23. The disease responsible for the great Bengal famine in 1942 -43 is ()
 (A) Blast of rice (B) Bacterial blight of rice
 (C) False smut of rice (D) Brown leaf spot of rice
24. Primary inoculum of bajra downy mildew is ()
 (A) Oospore (B) Chlamydospore
 (C) Zoospore (D) Conidia
25. *Sesamum phyllody* is transmitted by ()
 (A) *Aphis craccivora* (B) *Thrips tabaci*
 (C) *Bemisia tabaci* (D) *Orosius albicinctus*
26. Development of numerous minute black pycnidia arranged in concentric rings are ()
 observed on stem and pods in
 (A) Chickpea stunt (B) Chickpea wilt
 (C) Anthracnose of black gram (D) Ascochyta blight of chickpea
27. Favourable condition of powdery mildew disease is ()
 (A) high humidity (B) Warm temperature and low humidity
 (C) Low Temperature (D) High temperature

28. Leaf crinkle disease of black gram is transmitted by.... ()
 (A) White fly (B) Jassid
 (C) Aphid (D) Thrip
29. Leaf blotch of turmeric is caused by.... ()
 (A) *Colletotrichum falcatum* (B) *Glomerella tucumanensis*
 (C) *Taphrina maculans* (D) *Colletotrichum gloeosporioides*
30. The leaf spot of tobacco having a white centre, surrounded by grey and brown ()
 portion and dark brown to black margin may be shot holes is due to....
 (A) Leaf curl (B) Mosaic
 (C) Black shank (D) Frog eye leaf spot
31. Grassy shoot disease of sugarcane is caused by..... ()
 (A) Fungi (B) Bacteria
 (C) Phytoplasma (D) Nematode
32. *Eriophyid* mite transmit _____ disease. ()
 (A) Bud necrosis of groundnut (B) Sterility mosaic of pigeonpea
 (C) Chickpea stunt (D) Leaf curl of tobacco
33. Boat shaped leaf spots of maize is common symptom of ()
 (A) Maydis leaf blight (B) Turicum leaf blight
 (C) Downy mildew (D) Charcoal rot
34. Pycniospore and aeciospore in rust fungi are produced on ()
 (A) Wheat (B) Barly
 (C) Barberry (D) Oat
35. Which pathogen produce sclerotial bodies? ()
 (A) *Sclerotium rolfsii* (B) *Rhizoctonia bataticola*
 (C) *Claviceps fusiformis* (D) All above
36. Chick pea stunt disease is caused due to ()
 (A) Cucumber mosaic virus (B) Bean leaf roll virus
 (C) Soybean mosaic virus (D) Yellow mosaic virus
37. Mungbean yellow mosaic virus is transmitted by ()
 (A) Aphid (B) Leaf hoppers
 (C) Whitefly (D) Thrips
38. Which juvenile stage of root-knot causes infection to host plant? ()
 (A) Second stage (B) Third stage
 (C) Fourth stage (D) Adult female
39. Fruiting body produced by *Colletotrichum falcatum* is ()
 (A) Pycnidium (B) Perithecium
 (C) Acervulus (D) Apothecium
40. Sunflower rust is caused by ()
 (A) *Puccinia helianthi* (B) *Puccinia penisetti*
 (C) *Puccinia recondita* (D) *Puccinia striiformis*
41. Karnal bunt of wheat is caused by ()
 (A) *Tilletia caries* (B) *Tilletia foetida*
 (C) *Tilletia indica* (D) *Ustilago tritici*

(P.T.O.)

42. Difenconazole is traded as ()
 (A) Contaf (B) Score
 (C) Tilt (D) Karathane
43. Rhizome rot of turmeric is caused by ()
 (A) *Pythium aphanidermatum* (B) *Phytophthora citrophthora*
 (C) *Taphrina maculans* (D) *Fusarium oxysporum*
44. Soil solarization is recommended for the management of ()
 (A) Phytoplasma (B) Virus
 (C) Viroid (D) Nematode
45. The pith of the red rot affected canes of sugarcane emits ()
 (A) Sour odor (B) Rotten fish like smell
 (C) Fried egg like smell (D) Sweet odor
46. Hypertrophy and hyperplasia type symptoms on inflorescences of mustard is the characteristics of ()
 (A) White rust (B) Sclerotium stem rot
 (C) Powdery mildew (D) All of these
47. GCH -7 is resistant against ---- disease. ()
 (A) Wilt of castor (B) Leaf spot of Castor
 (C) Root rot of castor (D) Rust of Bajara
48. Copper oxychloride is recommended for the management of ()
 (A) Downy mildew (B) Damping off
 (C) White rust (D) All of these
49. Entire ear head is converted into a smutted single sorus is the characteristic of..... ()
 disease of sorghum.
 (A) Grain smut (B) Head smut
 (C) Long smut (D) Loose smut
50. High temperature with low soil moisture favoured the disease in groundnut is ()
 (A) Collar rot (B) Tikka
 (C) Stem rot (D) Rust
51. Who invented solar heat treatment for treating wheat seeds to control loose smut disease? ()
 (A) J.H.kuhn (B) J.C.Walker
 (C) J.C.Luthra (D) Prevost
52. Rapid death of cell followed by infection by a pathogen is known as ()
 (A) Necrosis (B) Blighting
 (C) Mottle (D) Chlorosis
53. The most serious smut of sorghum in our country is ()
 (A) Loose smut (B) Grain smut
 (C) Long smut (D) Head smut
54. Powdery mildew pathogen is ()
 (A) Facultative parasite (B) Facultative saprophyte
 (C) Obligate parasite (D) Obligate saprophyte
55. Which fungal bioagent is effective against stem rot of groundnut? ()
 (A) *Trichoderma harzianum* (B) *Trichogramma* sp.
 (C) *Paecilomyces* sp. (D) *Pseudomonas* sp.

56. Black arm is a common symptom of ()
 (A) Bacterial blight of rice (B) Tundu disease of wheat
 (C) Angular leaf spot of cotton (D) Grey mildew of cotton
57. *Erysiphe polygoni* produces _____ structure and perpetuate in infected plant debris ()
 (A) Perithecium (B) Sporodochium
 (C) Apothecium (D) Cleistothecium
58. *Anguina tritici* causes disease in wheat ()
 (A) Tundu (B) Ear cockle
 (C) Stem rot (D) Leaf blight
59. *Sphacelia sorghi* causes disease in sorghum ()
 (A) Sugary disease (B) Smuts
 (C) Head mold (D) Anthracnose
60. Seed treatment of Metalaxyl MZ is effective for the control of ()
 (A) Downy mildew (B) Wilt
 (C) Smut (D) Rust
61. Carbofuran 3 G is effective for the management of ()
 (A) Root knot disease (B) Damping off
 (C) Wilt (D) Stem rot
62. Pathogen require more than one host to complete its life cycle is called as ()
 (A) Autocious (B) Heteroecious
 (C) Monocyclic (D) Polycyclic
63. Most effective fungicide against powdery mildew fungi is ()
 (A) Mancozeb (B) Captan
 (C) Dinocap (D) Copper oxychloride
64. An entity that can cause disease is known as ()
 (A) Pathogen (B) Diorder
 (C) Sign (D) Parasite
65. State the name of fruiting body produced by *Ascochyta rabiei* ()
 (A) Pycnidium (B) Perithecium
 (C) Acervulus (D) Pycnium
66. False smut of paddy is caused due to ()
 (A) *Ustilago nuda* (B) *Ustilago scitaminea*
 (C) *Ustilaginoidea virens* (D) *Ustilago avenae*
67. Which fungus is producing aflatoxin in groundnut _____? ()
 (A) *Claviceps fusiformis* (B) *Aspergillus flavus*
 (C) *Fusarium oxysporum* (D) *Aspergillus niger*
68. Which nematode is infecting groundnut crop? ()
 (A) *Anguina tritici* (B) *Rotylenchus reniformis*
 (C) *Meloidogyne arenaria* (D) *Heterodera cajani*
69. Leaf spot of cotton is caused due to ()
 (A) *Alternaria tomato* (B) *Alternaria macrospora*
 (C) *Alternaria ricini* (D) *Alternaria solani*

70. Central shoot is replaced by a whip like structure in smut of ()
 (A) Bajra (B) Rice
 (C) Sugarcane (D) Maize
71. The first recognized virus disease of plants in the world is ()
 (A) Yellow vein mosaic (B) Tobacco mosaic
 (C) Tobacco leaf curl (D) Cucumber mosaic
72. Anthracnose of black gram is caused by ()
 (A) *Colletotrichum falcatum* (B) *Colletotrichum capsici*
 (C) *Colletotrichum graminicola* (D) *Colletotrichum lindemuthianum*
73. Who first time reported 'Karnal bunt disease'? ()
 (A) W.M.Stanley (B) H.H.Floor
 (C) J.H.Kulkarni (D) Mitra
74. Soybean stem rot is caused by ()
 (A) *Fusarium oxysporum* (B) *Sclerotinia sclerotiorum*
 (C) *Claviceps fusiformis* (D) *Rhizoctonia bataticola*
75. Root and stem rot in jatropha is caused by ()
 (A) *Pythium & Phytophthora* spp. (B) *Fusarium solani*
 (C) *Aspergillus niger* (D) *Sclerotium rolfsii*
76. Brown to black spot with concentric rings is the characteristic symptom of ()
 (A) *Alternaria* leaf spot (B) *Cercospora* leaf spot
 (C) Turicum blight (D) Downy mildew
77. Tobacco mosaic virus is transmitted by ()
 (A) Mechanically (B) Aphid
 (C) Whitefly (D) Jassid
78. The process of entering or establishment of a pathogen within a host is termed () as.....
 (A) Infection (B) Initiation
 (C) Invention (D) Irritation
79. 500 ppm = _____ gm per litre of water. ()
 (A) 0.5 g (B) 1.0 g
 (C) 2.0 g (D) 0.250 g
80. Sudden withering of plants is the typical symptom of ()
 (A) Wilt (B) Root rot
 (C) *Phytophthora* blight (D) Stem rot

X=====X=====X=====X

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Fifth Sem. End Theory Examination B.Sc. (Hons.) Agri. (Regular-4th Deans)- Dec 2019

Course No. - LPM 5.2

Course Title: Dairy Cattle and Buffalo Production & Management

Date: 14/12/2019

Time: 10.15 to 12.00 hrs

Day : Saturday

Total Marks: 80.00

PART-II (SUBJECTIVE) (Time: 1hr and 45 minute) Marks: 40.00

Q.II. Define/explain the following terms.

(1x10=10.0)

- | | |
|----------------------------|-------------------|
| 1. Silage | 6. Grading up |
| 2. Concentrate | 7. Muconium |
| 3. Artificial Insemination | 8. Pasteurization |
| 4. Unconventional feed | 9. Stanchion barn |
| 5. Rational grazing | 10. Colostrum |

Q.III. Justify the following statements.

(2.5x4=10.0)

1. Buffaloes are considered as backbone of Indian dairy industry.
2. Breeding bulls need regular exercise and grooming.
3. Lactating cow should be milked at regular interval of 12 hrs.
4. Dairy animals should be provided optimum dry period.

Q.IV. Write short notes on the following (Any four).

(2.5x4=10.0)

1. Anand pattern of dairy co-operatives.
2. Type of silo and Ensiling.
3. Systems of calf raising with advantages.
4. Loose housing system with advantages and dis-advantages.
5. Importance and advantages of Artificial Insemination in farm animals.

Q.V. Describe the following in details (Any two).

(5.0x2=10.0)

1. Feeding and drying management of milking animals.
2. Summer management of buffaloes.
3. Characteristics of good pasture and system of grazing.

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4. S. D. Agricultural University, S. K. Nagar

Fifth Semester B.Sc. (Hons.) Agriculture (Regular) End Examination December - 2019

Course No.: Ag. Extn. 5.3 (Fifth Dean)

Course Title: Communication Skills and
Personality Development

Credit: 1 + 1 = 2

Time: 09.30 hrs. to 11.30 hrs.

Date & Day: 14 / 12 / 2019, Saturday

Total Marks: 50

Question No. 1. Fill in the blanks.

05.00

1. The English equivalent of the word 'Communis' is _____.
2. News story is normally written in _____ style.
3. _____ is the systematic display of models, specimens, chart, posters etc.
4. _____ is the intensive teaching activity undertaken to attract the attention of mass audience.
5. _____ initiate the communication process?
6. _____ is the stage wherein the individual makes full use of the innovation.
7. _____ is a decision not to adopt an innovation.
8. _____ is the stage wherein the individual decides to continue the full use of the innovation.
9. The best method for teaching the skill is _____.
10. _____ gives detail information on particular topic.

Question No. 2. Match the following.

05.00

- | | |
|--------------------|---|
| 1. Physical bridge | A. Traditional method |
| 2. Innovator | B. Representative part of the original object |
| 3. Puppet show | C. Three elements |
| 4. EEI | D. Obstructions / Barriers |
| 5. Radio | E. Social media |
| 6. Specimen | F. Physical appearance |
| 7. Aristotle model | G. Mass contact method |
| 8. Noise | H. Channel |
| 9. Twitter | I. Regional training centre |
| 10. Personality | J. Venturesome |

Question No. 3. Give the full form of the following. (Any ten)

05.00

- | | | |
|-----------|---------|-----------|
| 1. MANAGE | 5. SREP | 9. WWW |
| 2. SAMETI | 6. OFT | 10. NGO |
| 3. NATP | 7. FLD | 11. ATARI |
| 4. ATMA | 8. ICT | 12. FSC |

Question No. 4. Define / Explain the following terms. (Any ten)

05.00

- | | |
|----------------------------|---------------------------|
| 1. Panel Discussion | 7. Innovation |
| 2. Agricultural Journalism | 8. Communication Fidelity |
| 3. Personality | 9. Opinion Leadership |
| 4. Adoption | 10. Lecture |
| 5. Diffusion | 11. Innovativeness |
| 6. Heterophily | 12. Perception |

Question No. 5. Answer the following in detail. (Any two)

10.00

1. Define "Communication" and explain Lagans model of communication in detail.
2. Explain the different stages of adoption in detail.
3. Enlist and explain the adopter categories in detail.

Question No. 6. Answer the following in short. (Any four)

10.00

1. Give the major functions of communication.
2. Explain the factors affecting adoption process.
3. Explain the factors influencing the growth and development of personality.
4. Explain the barriers of communication.
5. Write the importance and advantages of agricultural journalism.
6. What is extension teaching methods and give the detail classification of extension teaching methods?

Question No. 7. Do as directed. (Any five)

10.00

1. Write in detail about Krishi Vigyan Kendra.
2. Application of ICT in Transfer of Technology.
3. Differentiate method demonstration and result demonstration.
4. Differentiate adoption process and diffusion process.
5. Differentiate personal contact method and mass contact method.
6. Explain different type of communication skills.
7. Write the characteristics of personality.

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5th Semester End Theory (Regular-4th Deans) B.Sc. (Hons.) Agri. Exam- December 2019

Course No. - LPM 5.2

Course Title: Dairy Cattle and Buffalo Production & Management

Date: 14/12/2019

Time: 09.30 to 12.00 hrs

Day : Saturday

Total Marks: 80.00

PART-I (OBJECTIVE) (Time: 45 minutes) Marks: 40.00

Q.I Select the most appropriate option and write in the space provided in the answer sheet.

1. Average dry matter content of green roughage is
A. 75 per cent C. 25 per cent
B. 100 per cent D. 50 per cent
2. Amul was established in the year
A. 1956 C. 1954
B. 1946 D. 1948
3. The hormone responsible for holding up of milk in mammary gland is
A. Adrenalin C. Epinephrine
B. Estrogens D. None of the above
4. Sub-division of large fat globules into smaller fat globules is called as
A. Homogenization C. Standardization
B. Pasteurization D. None of the above
5. CMT testing done for detection of
A. Brucellosis C. Tuberculosis
B. Mastitis D. All of the above
6. The birth of a dead young one in cattle is called
A. Parturition C. Still birth
B. Calving D. Kidding
7. Ideal method of drying for high yielding dairy cow is
A. Stripping C. Partial milking method
B. Abrupt stoppage of milking D. Knuckling method
8. Extra allowance of nutrients given to dry advanced pregnant animals is known as
A. Steaming up C. Concentrates
B. Flushing D. Calving mixture
9. Ideal period for complete uterine involution takes in dairy cow is about
A. 4 months C. 2 months
B. 3 months D. 1 months
10. Rate of milk secretion is _____ proportional to the intra-mammary pressure.
A. Inversely C. Directly
B. No relation D. None of the above
11. Hormone responsible for let-down of milk is
A. Estrogen C. Oxytocin
B. Prolactin D. FSH
12. Each ml of bull semen contains _____ million sperms.
A. 200 C. 100
B. 1000 D. 5000
13. Colostrum contain higher amount of
A. Lactose C. Fat
B. CHO D. Protein
14. Average gestation period of buffaloes
A. 100 days C. 280 days
B. 310 days D. 330 days
15. A bull calf to be selected as future breeding bull must be the offspring of
A. Crossbred parents C. Purebred parents
B. Inbred parents D. None of the above

16. Average weigh of cow placenta is between
 A. 4.5-5.0 kg
 B. 2.5-3.0 kg
 C. 8.5-9.0 kg
 D. 6.5-7.0 kg
17. Crossbred cow has a calving interval of about
 A. 18 to 20 months
 B. 14 to 16 months
 C. 10 to 12 months
 D. 13 to 14 months
18. Freezing point of milk is
 A. -0.55°C
 B. -0.95°C
 C. 0°C
 D. 55°C
19. The colostrum should be fed to the calf preferably within _____ minutes.
 A. 60
 B. 30
 C. 90
 D. 100
20. Calving mixture provides readily available source of _____ to the cow.
 A. Energy
 B. Minerals
 C. Protein
 D. Vitamins
21. For natural breeding, 1 breeding bull is sufficient for _____ breedable animals.
 A. 50
 B. 10
 C. 30
 D. 70
22. Maximum number of calves that can be kept in a single shed are
 A. 50
 B. 40
 C. 30
 D. 20
23. The low productivity of Indian dairy animals is due to
 A. Poor genetic makeup
 B. Poor health care facilities
 C. Inadequate nutrition
 D. All of the above
24. The contribution of buffalo milk to the total milk production in the country is
 A. 40 %
 B. 55 %
 C. 45 %
 D. 65 %
25. The fodder suitable for silage making is
 A. leguminous
 B. Both A & B
 C. Cereals
 D. None of these
26. Binding agents used for UMMB making is
 A. Urea
 B. Salt
 C. Bentonite
 D. All of these
27. Normal fat content of zebu cattle milk is
 A. 4-5 %
 B. 3-3.5 %
 C. 6.5-7 %
 D. 7-8 %
28. NRC feeding standard was published first time in the year
 A. 1935
 B. 1945
 C. 1966
 D. 1999
29. Amount of water required per kg of milk produced by dairy cow
 A. 2-3 lit
 B. 6-8 lit
 C. 4-5 lit
 D. 8-10 lit
30. Dudh Sagar Dairy is located at
 A. Bharuch
 B. Mehsana
 C. Surat
 D. Navsari
31. Selective grazing is also known as
 A. Rotational grazing
 B. Strip grazing
 C. Deferred grazing
 D. Hohenium grazing
32. Which of the following is an example of vertical silo?
 A. Tower
 B. Bunker
 C. Trench
 D. Thread
33. A fresh strip of pasturage is provided each day for the livestock in _____.
 A. Deferred Grazing
 B. Strip Grazing
 C. Hohenium Grazing
 D. None of the above.

34. Urea molasses liquid feed contains ----- % urea.
A. 2-3
B. 6-8
C. 3-5
D. 8-10
35. *Cenchrus ciliaris* is example of
A. Perennial grass
B. Annual grass
C. Perennial legume
D. Annual legume
36. Carotene is a precursor of
A. Vitamin A
B. Vitamin B
C. Vitamin D
D. Vitamin E
37. Cultivated succulent fodder harvested and fed to the animals is known as
A. Hay
B. Silage
C. Haylage
D. Soilage
38. Head-Quarter of GCMMF is located at
A. Anand
B. Ahmedabad
C. Gandhinagar
D. Mumbai
39. Losses of soluble nutrients in Hay making by
A. Leaching
B. Bleaching
C. Fermentation
D. Sun curing
40. Dairy cattle can consume average dry matter at the rate of _____ their body weight.
A. 2.5%
B. 3.5%
C. 5.5%
D. 4.5%
41. Moisture content of Hay material should be
A. 65 per cent
B. 50 per cent
C. 12 per cent
D. 35 per cent
42. Water requirement of an animal is affected by
A. The level of production
B. Ambient temperature
C. The water content of the feed
D. All of the above
43. 1 Bullock = _____ AU
A. 1.25
B. 1.50
C. 1.00
D. 1.75
44. ICAR feeding standard is based on feeding standard.
A. NRC
B. ARC
C. Armsby
D. Morrison's
45. Floor space requirement for breeding bulls as per BIS is
A. 12 sq.m covered area
B. 30 sq.m covered area
C. 15 sq.m covered area
D. 100 sq.m covered area
46. Ideal pH value of excellent quality of silage is
A. 3.8-4.2
B. 4.8-5.2
C. 5.5-6.0
D. Above 7.0
47. For ensiling, the crop should be harvested at
A. Dent stage
B. Early stage
C. 80% flowering stage
D. All of these
48. The thermo regulatory system of buffaloes is
A. Strong
B. Poor
C. Normal
D. None of the above
49. The best method for milking of dairy animals is
A. Full hand milking
B. Stripping
C. Knuckling
D. None of the above
50. As per 20th livestock census, Cattle population of India is
A. 108 million
B. 192 million
C. 300 million
D. 148 million
51. Calf starter contains -----% crude protein.
A. 22-24
B. 16-20
C. 32-50
D. 18-30

52. Disbudding in calf is done at the of age of-----days.
 A. 22-24 C. 30-50
 B. 16-20 D. 10-14
53. Age at first puberty in zebu cattle is about
 A. 20-24 months C. 10-14 months
 B. 30-40 months D. 16-20 months
54. Optimum dry period for exotic cattle is
 A. 60 days C. 90 days
 B. 150 days D. None of the above
55. Potential capacity of the female to produce functional ova is known as
 A. Fertility C. Infertility
 B. Fecundity D. Sterility
56. Frozen Semen is solidified (frozen) and preserved at -196°C in
 A. Liquid Nitrogen C. Oxygen
 B. Carbon dioxide D. Hydrogen
57. Dry matter content of silage is
 A. 35% C. 50%
 B. 25% D. 90%
58. Ratio of leguminous to non-leguminous roughage feeding should be
 A. 40:60 C. 2:1
 B. 60:40 D. 3:2
59. Examples of trace minerals are
 A. Cu and Fe C. Na and K
 B. Ca and P D. All of these
60. The moisture percentage in haylage is
 A. 15 % C. 35 %
 B. 50 % D. 65 %
61. Artificial method of calf raising is also known as
 A. Leaning C. Foaling
 B. Weaning D. Rearing
62. Molumin is a mixture of
 A. Urea molasses mineral blocks C. Urea molasses protein blocks
 B. Urea molasses vitamin blocks D. Urea molasses cellulose blocks
63. Which fraction of protein of colostrum carries antibodies
 A. Globulin C. Casein
 B. Albumin D. Lactose
64. Calves are vaccinated for FMD at age of
 A. 2 months C. 4 months
 B. 6 months D. 7 months
65. Which one of the following acts as stimulus for milk let-down?
 A. Suckling of a calf C. Sight of a calf
 B. Presence of milker D. All of these
66. Maximum number of cow/buffalos that can be kept in single shed
 A. 50 C. 30
 B. 40 D. 20
67. Constant exposure of buffaloes, to high ambient temperature causes
 A. Rise in rectal temperature C. Decline in feed intake
 B. Decrease in milk production D. All of the above
68. Housing systemis widely practiced in hot tropical countries including India is
 A. Conventional housing system C. Both
 B. Loose housing system D. None of the above
69. Wallowing is natural habit of
 A. Buffalo C. Crossbred cow
 B. Zebu cattle D. Bullock

70. Storage space requirement per quintal of loose hay
 A. 1.60 m³ C. 0.50 m³
 B. 0.60 m³ D. 3.00 m³
71. Adult bulls may be used ordinarily ----- a week for breeding.
 A. Twice C. Thrice
 B. Once D. None of the above
72. The initiation of lactation at parturition is under the control of
 A. Prolactin C. Estrogen
 B. Progesterone D. Oxytocin
73. Recommended range of vacuum for milking machine is
 A. 340-350 mm Hg C. 140-150 mm Hg
 B. 300-310 mm Hg D. None of these
74. Milking should be completed within
 A. 3-5 minutes C. 7-10 minutes
 B. 10-12 minutes D. None of these
75. Ideal chilling temperature of fluid milk is
 A. 4°C C. - 10°C
 B. 14°C D. - 4°C
76. Udders and teats of milking animals should be washed with
 A. Potassium permanganate solution C. Potassium carbonate solution
 B. Potassium hydroxide solution D. None of these
77. Hybrid developed from crossing of Mare & Jack is
 A. Mule C. Hinny
 B. Cattalo D. Jennet
78. The practice of mating unrelated purebred animals within the same breed
 A. Out-crossing C. Inbreeding
 B. Crossbreeding D. None of these
79. Karan fries breed is evolved by
 A. Cross-breeding C. Selection
 B. Inbreeding D. Back-cross
80. Thawing of semen straw is done at
 A. 38°C for 20 sec C. 34°C for 15 sec
 B. 35°C for 20 sec D. None of these

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Fifth Semester (Reg.) (OLD – 4th Deans) of B.Sc. (Hons.) Agri. End Examination, Dec. - 2019-20

Hort. 5.4: Post Harvest Management and Value Addition of Fruits and Vegetables (1 + 1)

Date 13/12/2019

PART-B (Subjective)

Time: 10:15-12.00 hrs.

Day Friday

Marks: 40.00

Q.1 A. Define/Explain the following (Any Six)

6.00

- | | |
|----------------------------|------------------|
| 1. Post Harvest Technology | 5. Preservative |
| 2. Ripening | 6. Waxing |
| 3. Maturity Indices | 7. Packaging |
| 4. Grading | 8. Transpiration |

B. Define canning and describe the steps of canning with the help of flow diagram.

4.00

Q.2 A. Differentiate the following (Any Three)

6.00

- | | | |
|---------------------------|-----|------------------------|
| 1. Jam | v/s | Jelly |
| 2. Climacteric fruits | v/s | Non-climacteric fruits |
| 3. Physiological maturity | v/s | Horticultural maturity |
| 4. Class I preservatives | v/s | Class II preservatives |
| 5. Brining | v/s | Syruping |

B. Briefly describe the different methods of storage of fruits and vegetables.

4.00

Q.3 A. Write short notes on the following (Any Three)

6.00

1. Importance and scope of post harvest technology in India
2. Different methods of peeling of fruits and vegetables
3. Characteristics of an ideal cushioning material
4. Advantages of drying and dehydration
5. Importance of right stage of harvesting of fruits and vegetables
6. Physical and biochemical changes during maturity to ripening in fruits

B. Briefly describe the dehydration technique of fruits and vegetables with the help of flow diagram.

4.00

Q.4 A. Define precooling and describe different methods of precooling of horticultural crops.

5.00

B. What is preservation and explain in detail the different short-term methods of preservation.

5.00

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Fifth Semester End Examination of B.Sc. (Hons.) Agriculture (Regular) December-2019

Title of Course: Protected Cultivation and Secondary Agriculture (1+1)

Course No.: Ag. Engg. 5.4

Date: 13-12-2019

Time: 9:30-11:30

Marks: 50

Q.1(a) Fill up the blanks with most appropriate word (4.0)

- (i) The highest horizontal section in top of the roof is known as _____.
- (ii) Instrument used to measure the wind speed is _____.
- (iii) Convection tube is the component of _____ cooling system.
- (iv) Increase in concentration of greenhouse gases in the atmosphere is termed as _____.
- (v) Brown Duvel distillation method is one of the direct methods of _____.
- (vi) Removal of moisture content from any product /grain to bone dry level is called _____.
- (vii) LSU dryer is continuous flow _____ type of grain dryer.
- (viii) _____ type storage structure is made of mud or combination of mud and spilt bamboos.

(b) Explain various fluid properties of agricultural materials (specific mass, specific weight, specific volume, specific gravity). (4.0)

(c) Paddy with 25% m.c.(d.b.) is dried to obtain 2 tonnes of paddy with 12% m.c.(w.b.). Calculate the weight of bone dry product, water evaporated and initial weight of paddy. (4.0)

Q.2(a) State whether following statements are "TRUE" or "FALSE" (4.0)

- (i) True density of grain is higher than bulk density.
- (ii) North-south is most commonly orientation of the greenhouse in India
- (iii) At oven dry condition, moisture content of soil is 100%.
- (iv) Moisture content of grain on dry basis is less than the moisture content on wet basis.
- (v) Protection of the crops against unfavorable environmental conditions is known as protected cultivation.
- (vi) Surface tension force is responsible for capillary water.
- (vii) In greenhouse foggers are used for irrigation.
- (viii) Unit of light intensity is lux.

(b) Give the detail classification of mechanical dryers and explain Recirculatory batch dryer (RPEC dryer) with neat sketch. (5.0)

(c) A rigid frame or post and rafter freestanding greenhouse; 18 feet wide, 30 feet long, 14 feet high at the ridge with 8 feet side walls; is covered with single-layer glass from the ground to the ridge. What size gas heater would be needed to maintain 65° F on the coldest winter night (0° F)? (heat loss factor, $u = 1.2 \text{ Btu} / \text{h} / \text{ft}^2 / ^\circ\text{F}$) (4.0)

OR

Design a bag storage structure for storing 300 tonnes of paddy. Assume following data: Bag size-100cmx 60cmx 30cm of 75 kg capacity; Stack size-10 bags in length, 10 bags in width and 10 bags in layer; Clear distance between stack and wall- 1 m; Stack to stack distance- 2 m.

Q.3(a) Choose the correct answer from given options**(4.0)**

- (i) Moisture content of paddy on wet basis is 20%, moisture content on dry basis will be...
(a) 15% (b) 20% (c) 25% (d) 30%
- (ii) Which type of green house is constructed against the side of an existing building?
(a) Lean-to type (b) Even span type (c) Uneven span type (d) Ridge and furrow type
- (iii) Post-harvest technology does not include
(a) Drying of the product (b) Growing of crop
(c) Storage of the product (d) Value addition of the product
- (iv) What has to be supplied inside greenhouse to avoid the cold bite to plants due to freezing?
(a) Heat (b) Light (c) Water (d) Humidification
- (v) Which of following is the only method of applying uniform water and fertilizer to the plant
(a) Border (b) Sprinkler (c) Flood (d) Trickle / Drip
- (vi) The values of volumetric water content of soils vary with their
(a) Colour (b) Moisture (c) Structure (d) Texture
- (vii) In which type of green house the trusses are not used?
(a) Truss frame (b) Pipe frame (c) Wooden frame (d) None of above
- (viii) Angle between the base and slope of the cone formed on a free vertical fall of the grain mass to a horizontal plane is known as
(a) Angle of repose (b) Angle of response (c) Angle of collecting pan (d) Angle of hopper

(b) What is greenhouse effect? What are various components of crop micro-climate and describe in brief the plant response to these components. **(4.0)**

(c) A grower collects an undisturbed soil sample from a greenhouse one day after irrigation when soil moisture was near its field capacity. The internal dimensions of the core sampler were 8.5 cm diameter and 20 cm deep. Weight of the core sampler alone and with moist soil was 1.8 kg and 3.25 kg respectively. After oven drying the weight of dry soil and sampler was found to be 2.95 kg. Determine the water holding capacity of soil and the water depth in cm/m depth of soil. **(5.0)**

Q.4(a) Match the following**(4.0)**

- | | |
|-----------------------------|---------------------------------|
| i. Active summer cooling | A. Modern storage structure |
| ii. Solar drying | B. Indirect method |
| iii. Humidity | C. Radiation drying |
| iv. Kothar | D. Convection tube |
| v. Dielectric method | E. Fan and Pad system |
| vi. Silo system | F. Direct method |
| vii. Single stage method | G. Fogger |
| viii. Active winter cooling | H. Indigenous storage structure |

(b) Explain briefly (Any Two) **(4.0)**
(i) Rules of watering in the greenhouse
(ii) Material handling equipments
(iii) Pusa grain bin

(c) The Food Corporation of India (FCI) has fixed the wheat market price as Rs.920/- per quintal at 14 % m.c.(w.b.). A farmer is paid Rs.780/- per quintal for his product at 17% m.c.(w.b.). Determine whether the farmer was in loss or in profit? And how much? **(4.0)**

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Fifth Semester (Reg.) (OLD – 4th Deans) of B.Sc. (Hons.) Agri. End Examination, Dec. - 2019-20

PART-A (Objective)

Hort. 5.4: Post Harvest Management and Value Addition of Fruits and Vegetables (1 + 1)

Date: 13.12.2019

Time: 09:30 – 10:15 hrs.

Day: Friday

Marks: 40.00

Write the appropriate choice in answer sheet of the following statements.

1	Which of the following is considered as the oldest method of preservation of fruits and vegetables?							
	A	Freezing	B	Drying	C	Brining	D	Syruping
2	The ripening hormone is							
	A	Gibberellins	B	Auxin	C	Cytokinin	D	Ethylene
3	During the process of precooling the shelf life of fruits are							
	A	Extended	B	Reduced	C	Remain constant	D	None of these
4	Removal of moisture from fruits and vegetables under controlled condition is called as							
	A	Peeling	B	Dehydration	C	Curing	D	Packaging
5	Citrus fruit peels are used to prepare							
	A	Jam	B	Jelly	C	Marmalade	D	RTS
6	Feni is prepared from							
	A	Cashew leaves	B	Cashew roots	C	Cashew apple	D	Cashew nuts
7	Cushioning materials are used to fix the commodity during							
	A	Precooling	B	Packaging	C	Perboiling	D	Exhausting
8	Which of the following is considered as ideal fruit for making jelly?							
	A	Banana	B	Mango	C	Sapota	D	Guava
9	Precooling of fruits and vegetables is carried out to remove							
	A	Field heat	B	Moisture	C	Juice	D	Pulp
10	During sealing of cans the head space should be left vacant about							
	A	2-3 cm	B	1-2 cm	C	0.1-0.2 cm	D	0.3-0.5 cm
11	The chemical used during lye peeling of fruits and vegetables is							
	A	NaCl	B	NaOH	C	Na-Benzozate	D	KMS
12	Compact curd development is the maturity indices of							
	A	Cabbage	B	Cauliflower	C	Broccoli	D	Knolkhol
13	The chemical used to check the sprouting in onion during storage is							
	A	AMO 1618	B	CCC	C	MH	D	Paclobutrazol
14	Which of the following is a non-climacteric fruit?							
	A	Sapota	B	Strawberry	C	Mango	D	Papaya
15	Which of the following is a cushioning material?							
	A	LDPE	B	CFB	C	Wooden chips	D	Paper shreds
16	RTS refers to							
	A	Ready to set	B	Ready to settle	C	Ready to serve	D	Ready to select
17	Brining is usually done for							
	A	Fruits	B	Vegetables	C	Flowers	D	Aromatic plants

18	Which of the following is/are computational maturity indices of fruits and vegetables?							
	A	DFFB	B	Heat unit	C	Calendar date	D	All of these
19	Blanching is also known as							
	A	Parboiling	B	Pre-cooking	C	Scalding	D	All of these
20	The most common method followed during grading of fruits and vegetables is							
	A	Size	B	Shape	C	Colour	D	Flavour
21	Who is known as Father of canning?							
	A	Nicolas Appert	B	Nicolas Warner	C	Nicolas Cambell	D	David Nicolas
22	Right stage of harvesting of fruits and vegetables is judged by							
	A	Maturity indices	B	Maturity pattern	C	Maturity curve	D	Market demand
23	Ambient condition denotes							
	A	Low temperature	B	Freezing temperature	C	Room temperature	D	High temperature
24	Removal of all suspended materials from fruit juices is called as							
	A	Filtration	B	Clarification	C	Sedimentation	D	Settling
25	The TSS content of jam is							
	A	50 °Brix	B	58 °Brix	C	60 °Brix	D	68 °Brix
26	The instrument used to determine the pectin content is							
	A	Pectinometer	B	Thermometer	C	Jelometer	D	Salinometer
27	Waxing is done to reduce the							
	A	Respiration	B	Transpiration	C	Heat	D	Both A and B
28	Preservation by salt or vinegar or oil is called as							
	A	Pickling	B	Fermentation	C	Freezing	D	Drying
29	The most commonly used precooling method for fruits and vegetable is							
	A	Vacuum	B	Ice	C	Forced air	D	Hydro
30	For long distant transport, tomato should be harvested at							
	A	Green mature	B	Red ripe	C	Over ripe	D	None of these
31	Which stage comes just after maturity?							
	A	Fruit set	B	Ripening	C	Senescence	D	Cell death
32	The most important ingredient for jelly making is							
	A	Acid	B	Water	C	Sugar	D	Pectin
33	Potassium metabisulphite is not suitable for							
	A	Coloured product	B	Non-coloured product	C	Both A and B	D	None of these
34	The complete killing of microorganisms is done by							
	A	Pasteurization	B	Sterilization	C	Fermentation	D	Blanching
35	Cidar is prepared from							
	A	Almond	B	Guava	C	Papaya	D	Apple
36	Principally sugar act as a preservative by the action of							
	A	Diffusion	B	Osmosis	C	Fermentation	D	Sterilization
37	Central Institute of Post Harvest Engineering and Technology (CIPHET) is located at							
	A	Lucknow	B	Lalgard	C	Mumbai	D	Ludhiana
38	The enzyme responsible for browning in cut surfaces of fruits is polyphenol							
	A	Oxidase	B	Deaminase	C	Decarboxilase	D	Dehydrogenase
39	The colour of fruit skin becomes dull potato during maturity of							
	A	Mango	B	Pineapple	C	Sapota	D	Pomegranate
40	Which of the following is Class I preservative							
	A	Honey	B	Salt	C	Oil	D	All of these
41	The chemical use to absorb the ethylene is							
	A	MH	B	KOH	C	KMnO ₄	D	KCl

42	Curing is an important operation for							
	A	Tomato	B	Cauliflower	C	onion	D	Brinjal
43	Angularity is the maturity indices of							
	A	Papaya	B	Banana	C	Strawberry	D	Sapota
44	The climacteric fruits should be harvested during							
	A	Tender stage	B	Mature stage	C	Immature stage	D	Ripening stage
45	Microorganisms play a major in							
	A	Curing	B	Syruping	C	Brining	D	Fermentation
46	The cold sterilization refers to							
	A	Fermentation	B	Curing	C	Pasteurization	D	Irradiation
47	Central Food Technological Research Institute is located at							
	A	Muradabad	B	Mumbai	C	Madurai	D	Mysore
48	In climacteric fruits, ripening is linked with sudden increase in rate of							
	A	Transpiration	B	Respiration	C	Fermentation	D	Maturity
49	Onion and garlies are usually peeled by							
	A	Lye peeling	B	Steam peeling	C	Flame peeling	D	Mechanical
50	Weeping is a serious problem of							
	A	Jelly	B	Jam	C	Cordial	D	Pickle
51	Fortification in food materials enhances the							
	A	Shelf life	B	Nutritive value	C	Visual appearance	D	None of these
52	Which of the following is an excellent example of insect pest resistant packaging material?							
	A	Craft paper	B	CFB boxes	C	Polycarbonate	D	None of these
53	The empirical formula of ethylene is							
	A	CH=CH	B	CH ₂ =CH ₂	C	CH ₄ =CH ₄	D	CHO
54	The pigment that usually degrades during the process of ripening is							
	A	Chlorophyll	B	Xanthopyll	C	Anthocyanin	D	Lycopene
55	The process of removal of air from can is known as							
	A	Filtration	B	Clarification	C	Exhausting	D	Sealing
56	Which of the following method of preservation is depended upon atmospheric humidity?							
	A	Drying	B	Dehydration	C	Syruping	D	Brining
57	Sugar act as a preservative when concentration goes above							
	A	52.0 %	B	56.0 %	C	62.0 %	D	66.0 %
58	Which of the following is a semi solid product?							
	A	Jam	B	RTS	C	Nectar	D	Squash
59	The sparkling sweetened juice is							
	A	RTS	B	Cordial	C	Nectar	D	Wine
60	Blanching helps to							
	A	Reduce microbes	B	Inactivate enzymes	C	Both A and B	D	None of these
61	Canning works on the principle of							
	A	Freezing	B	Dehydration	C	Fermentation	D	Heat
62	The pigment appears in the skin of tomato during the maturity is							
	A	Anthocyanin	B	Lycopene	C	Xanthophyll	D	Pheophytin
63	Hard metallic sound is the maturity indices of							
	A	Sapota	B	Pomegranate	C	Watermelon	D	Tomato
64	The principle lies behind hypobaric storage is							
	A	Low temperature	B	High temperature	C	Low pressure	D	High pressure
65	The salt concentration in a brine solution is determined by							
	A	Salinometer	B	pH meter	C	Spectrophotometer	D	Refractometer

66	Physical injury to fruits during transportation include							
	A	Bruising	B	Respiration	C	Decay	D	Microbes
67	India ranks _____ in fruit and vegetable production.							
	A	First	B	Second	C	Third	D	Fourth
68	Food Product Order (FPO) came into force during							
	A	1954	B	1955	C	1956	D	1957
69	In what terms, we can explain the post harvest losses							
	A	Nutritional	B	Economical	C	Both A and B	D	None of these
70	Ripening is							
	A	Phenotypically programmed stage	B	Genetically programmed stage	C	Physiologically programmed stage	D	None of these
71	Precursor of ethylene is _____							
	A	Tryptophan	B	Zinc	C	Methionine	D	Ascorbic acid
72	Asepsis mean.....							
	A	Absence of infection	B	Absence of transpiration	C	Absence of respiration	D	Absence of mechanical damage
73	Most of the bacteria can not survive inmedia.							
	A	Saline	B	Acidic	C	Alkaline	D	Neutral
74	Oil in pickles, produces _____ condition.							
	A	Aerobic	B	Favourable	C	Anaerobic	D	None of these
75	Aging is an important operation of beverage.							
	A	Fermented	B	Sweetened	C	Unfermented	D	RTS
76	Flower head of clove contains that cause black neck ring in sauce / ketchup.							
	A	Pectin	B	Polyphenols	C	Tannin	D	Citric acid
77	Horticultural crops are entity, even after harvesting.							
	A	living	B	non-living	C	semi-living	D	None of these
78	The TSS content in a fruit juice is expressed by							
	A	° C	B	° F	C	Degree days	D	° Brix
79	Which acid is added in jam recipe?							
	A	Citric	B	Ascorbic	C	Malic	D	Vinegar
80	The concentration of CO ₂ and O ₂ is precisely maintained in							
	A	CA storage	B	MA storage	C	Hypobaric storage	D	Cold storage

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Fifth Semester (Old-Regular) B.Sc. (Hons.) Agri. Semester End Theory Examination-2019-20 PART-B: Subjective

Course No. PBG 5.5 Title of Course: Principles of Seed Technology (2+1)
Date: 12.12.2019 Time: 9.30 to 12.00 hrs.
Day: Thursday Marks 40.0

Q-1 (A) Define/explain the following terms (ANY TEN) (5.0)

1. Seed
2. Seed Technology
3. Seed treatment
4. Male sterility
5. Isolation distance
6. Self incompatibility
7. Roughing
8. Volunteer plants
9. Detasseling
10. Seed certification
11. Seed drying
12. Seed processing

Q-1 (B) Justify the following statements (ANY FIVE) (5.0)

1. Seed is a basic input in agriculture.
2. Castor and bajra required more isolation distance for hybrid seed production.
3. Seed must be stored in cool and dry condition.
4. Rouging is the important operation of any seed production programme.
5. The developmental variation is the important cause for varietal deterioration.
6. Male sterility system in maize is not much popular in India.
7. Variety must be novel, distinct, uniform and stable.

Q-2 Write short note on the followings (ANY FIVE) (10.0)

1. Characteristics of good quality seed.
2. Write roles and goals of seed technology.
3. Role of seed inspector in seed quality control.
4. Classes of seeds in India.
5. Phases of seed certification.
6. Historical developments of seed industry in India.
7. Factors affecting varietal deterioration.

Q-3 (A) Differentiate the following (ANY FIVE) (5.0)

1. Seed and Grain
2. Seed standard and Field standard
3. Foundation seed and Certified seed
4. Seed disinfestations and Seed disinfection
5. Sanction legislation and Control legislation
6. Orthodox seed and Recalcitrant seed

Q-3 (B) Write the full form.

1. NSRTC
2. CSTL
3. GSSCA
4. NBPGR
5. IISS
6. SSTL
7. OECD
8. GSSC
9. NRCSS
10. ISTA

Q-4. Describe the detail procedure for commercial seed production of COTTON or PEARLMILLET or CASTOR (10.0)

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Fifth Semester End Examination of B.Sc. (Hons.) Agri. (New Regular) December-2019

Course No. : Agron 5.6	Title of Course : Farming System and Sustainable Agriculture (1 + 0)
Date : 12/12/2019	Time : 9.30 to 11.30 hrs
Day : Thursday	Marks : 50.00

Q.1 (A) Define / Explain the following terms (Any FIVE) [4.00]

- | | |
|--------------------|--------------------------------|
| 1. Alley cropping | 2. Cropping pattern |
| 3. Organic farming | 4. Sustainable agriculture |
| 5. Bio-diversity | 6. Good agricultural practices |

(B) Select the correct answer from the following options [5.00]

1. The author of book "Cropping system and Farming system" is _____
(a) S. R. Reddy (b) T. Y. Reddy (c) S. C. Panda (d) D. D. Gupta
2. _____ is the most popular breed for commercial goat farming in India
(a) Surti (b) Jamnapari (c) Marwari (d) Kutchi
3. _____ is the most prevalent cropping system in India
(a) Rice-wheat (b) Rice-rice (c) Rice-maize (d) Rice-gram
4. _____ refers to complementary interaction which occurs both in space and time.
(a) Allelopathy (b) Annidation (c) Endozoochory (d) Competition index
5. Kg crop yield increase per kg nutrient applied is _____
(a) Agronomic efficiency (b) Physiological efficiency (c) Partial factor productivity (d) Crop removal efficiency
6. LER of more than 1 indicates _____
(a) Equal yield (b) Yield advantage (c) Yield loss (d) None of these
7. _____ is a fundamental feature of farming system around the world
(a) Agro-bio-diversity (b) Bio-diversity (c) Bio-dynamic agriculture (d) Biological farming
8. Agricultural and forestry practices remove CO₂ from the atmosphere is called _____
(a) Carbon footprint (b) Ecological footprint (c) Carbon sequestration (d) Permaculture
9. No tillage, no fertilizer, no pesticide and no weeding are the principles of _____ farming.
(a) Precision (b) Natural (c) Organic (d) Intensive
10. When second crop is sown before the harvest of previous crop in the same field is called _____ cropping
(a) Ratoon (b) Alley (c) Relay (d) Sequence

(C) Write the principles and advantages of crop rotation [3.00]

OR

Discuss the objectives of farming system

Q.2 (A) Differentiate the followings (Any THREE) [6.00]

1. Intercropping Vs Mixed cropping
2. Crop water use efficiency Vs Field water use efficiency
3. Additive series Vs Replacement series of intercropping
4. Multiple cropping index Vs Crop intensity index

(B) Fill in the blanks with the most appropriate word/s. [3.00]

1. Only a single crop grown alone in pure stand is called _____
2. Zabo cultivation is generally practiced in _____
3. Growing of four crops in sequence in a year is _____ cropping
4. Rice-Fish-Azolla is _____ type of integrated farming system.
5. In conservation tillage at least _____ per cent of soil surface covered by plant residues.
6. Cultivation of mulberry plants is known as _____

(PTO)

(C) Discuss types of cropping systems in brief. [3.00]

Q.3 (A) Write short note on the followings (Any THREE) [9.00]

1. Conservation agriculture
2. Dry land ecosystem
3. Goals of sustainable agriculture
4. Impact of green revolution on the environment

(B) State whether following statements are True or False [4.00]

1. Cropping pattern is the most important component of a farming system
2. Apiculture is a subsidiary occupation and additional source of income for farm families
3. Weed problem is more in intercropping system than in sole crop system
4. RYT is mostly used for additive series in intercropping system.
5. Occurrence of insects and pests are more when mono-cropping is followed
6. Return Per Rupee Invested is also called benefit-cost-ratio or input- output ratio
7. The fallow period in shifting cultivation was 10-20 years but in recent times it is reduced to 2-5 years in many areas
8. Integrated farming system is a boon to wet land farmers

Q.4 (A) Do as directed (Any FIVE) [10.00]

1. Write the importance of farming system
2. Give the advantages and disadvantages of multiple cropping
3. Give criteria for selection of enterprise in IFS
4. Write concepts of sustainable agriculture
5. State the characteristics of LEISA
6. Enlist the components of integrated farming system
7. Write the mandates of IFS

(B) Match the group "A" with group "B" [3.00]

Group - A

1. Permaculture
2. Ecological foot print
3. Conventional agriculture
4. Conservation agriculture
5. Complementary enterprises
6. Synergistic cropping

Group - B

- A. Green manuring
- B. Poultry-Fishery-Rice cropping
- C. Bill Mollison
- D. William Rees
- E. Sugarcane + Potato
- F. Brown manuring

* * * * *

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Fifth Semester (Old-Regular) B.Sc. (Hons.) Agri. Semester End Theory Examination-2019-20
PART-A: Objective

Course No. PBG 5.5	Title of Course: Principles of Seed Technology (2+1)
Date: 12.12.2019	Time: 9.30 to 12.00 hrs.
Day: Thursday	Marks 40.0

Q-1 Write the most appropriate answer from the option given below in the provided answer sheet.

- 1 Which of the following is a basic input for agriculture
A Seed B Fertilizer
C Credit D Insecticide
- 2 Who is the father of seed testing
A George Lakon B F. Nobbe
C Paul Neergaard D B. R. Barwale
- 3 Seed act was passed in the Indian parliament on
A 1955 B 1966
C 1976 D 1986
- 4 National seed corporation is located at
A Hyderabad B Ahmedabad
C New Delhi D Bengaluru
- 5 Which of the following is known as referral laboratory
A CSTL B SSTL
C DSSTL D Private Company Lab
- 6 Tag colour of breeder seed is _____
A Golden yellow B Azure blue
C Opal green D White
- 7 PPVFR act was passed in the year
A 1999 B 2001
C 2003 D 2006
- 8 Isolation distance depend on
A Mode of Pollination B Breeding system
C Pollinating vectors D All the above
- 9 Border rows in hybrid seed production plot are
A Restorer lines B Male lines
C Female crops D Other crop
- 10 Isolation distance for foundation seed production of onion is
A 1600 m B 1000 m
C 500 m D 800 m
- 11 Which of the following seed has highest genetic purity:
A Nucleus seed B Breeder seed
C Foundation seed D Certified seed
- 12 Who is the chairman for Central Variety Release Committee for field crops
A DDG (Crop Science) B DDG (Horticulture)
C Director of Agriculture D Secretary, MoA, GOI
- 13 Power to notify the kind/varieties of seeds in Seed Act fall under:
A Section-4 B Section-5
C Section-6 D Section-7

(P.T.O)

- 14 Seed plot technique is followed for seed production of

A Tomato	B Chilli
C Potato	D Brinjal
- 15 First seed testing laboratory was started at:

A Germany	B India
C USA	D UK
- 16 Seed (Control) Order was came into force from:

A 1980	B 1983
C 1985	D 2004
- 17 Book "Seed Technology" was written by:

A R. L. Agarwal	B Dadalani & Agarwal
C Copeland & Mc. Donald	D B. D. Singh & A. K. Joshi
- 18 Seed grading is done through

A Thresher	B Seed sheller
C Huller	D Specific gravity separator
- 19 Grow out test is conducted to test:

A Physical purity	B Genetic purity
C Seed moisture	D Seed health
- 20 Head quarter of GSSCA is located at:

A Gandhinagar	B Ahmedabad
C Rajkot	D Navsari
- 21 Seed technology deals with seed :

A Structure	B Production
C Testing	D All of above
- 22 Staggered plating is carried out to :

A Maintain plant population	B Break down male sterility
C Maintain genetic purity	D Synchronization of flowering
- 23 Foundation class seed tag colour

A White	B Blue
C Yellow	D Black
- 24 Which of the following method is used for tomato seed extraction

A Alkali method	B Acid method
C Mechanical method	D All of these
- 25 Which of the following method is commonly used for onion seed production

A Seed to seed method	B Seed to bulb method
C bulb to seed method	D bulb to bulb method
- 26 Initial validity period for certified seed is

A 6 months	B 9 months
C 12 months	D 15 months
- 27 What is the isolation distance for rice seed production

A 3 m	B 6 m
C 100 m	D 200 m
- 28 Which one of the fallowing method is used for hybrid seed production of maize

A Emasculation & pollination	B GMS
C De-tasseling & wind pollination	D CGMS
- 29 Which is the first rice hybrid in India

A APHR-1	B KRH 1
C CNRH 1	D Pant Sankar dhan-1
- 30 Which among the following is a self sown plant

A Off-types	B Diseased plant
C Volunteer plant	D Other varieties plant
- 31 Which one of the fallowing is responsible for sex reversion in castor

A Day length	B Temperature
C Humidity	D All the above

- 32 Seed certification in India is.....
- | | |
|--------------------|---------------------------|
| A Compulsory | B Voluntary |
| C Depends on state | D Depends on crop variety |
- 33 Revalidity period for certification tag is
- | | |
|-------------|-------------|
| A 6 months | B 10 months |
| C 12 months | D 15 months |
- 34 Gujarat State Seed Corporation located at.....
- | | |
|-------------|---------------|
| A Ahmedabad | B Gandhinagar |
| C Junagadh | D Navsari |
- 35 NSRTC is located at.....
- | | |
|-------------|------------|
| A Varanasi | B Delhi |
| C Hyderabad | D Kolkatta |
- 36 Seed processing is done for improving.....
- | | |
|-----------------------|-------------------------|
| A Genetic purity | B Physical purity |
| C Seed health quality | D Physiological quality |
- 37 Bottle gourd is a.....plant
- | | |
|--------------|-----------------|
| A Monoecious | B Dioecious |
| C Bisexual | D None of above |
- 38 TZ test was used to know?
- | | |
|------------------|-----------------------|
| A Seed viability | B Seed health |
| C Seed vigour | D Seed genetic purity |
- 39 Full form of ISTA
- | | |
|-------------------------------------|--|
| A Indian Seed Testing Association | B International Seed Testing Association |
| C International Seed Testing Agency | D Indian Seed Testing Agency |
- 40 The seed replacement rate of hybrids
- | | |
|---------|--------|
| A 50 % | B 50 % |
| C 100 % | D 70 % |
- 41 Indian Society of Seed Technology was established during_____.
- | | |
|--------|--------|
| A 1960 | B 1965 |
| C 1971 | D 1978 |
- 42 Who developed the concept of seed plot technique?
- | | |
|-------------|---------------|
| A Ramanujam | B Pushkarnath |
| C G. Kalloo | D P L Goutam |
- 43 How many numbers of notified seed testing laboratories are in Gujarat?
- | | |
|-----|-----|
| A 3 | B 4 |
| C 5 | D 6 |
- 44 Which type of flowers are produced fruits in brinjal.
- | | |
|--------------------|--------------|
| A True short style | B Long style |
| C Short style | D None |
- 45 Certified seed is progeny of _____.
- | | |
|----------------|-------------------|
| A Breeder seed | B Foundation seed |
| C Nucleus seed | D Register seed |
- 46 National Research Centre on Seed Spice is located at _____.
- | | |
|-----------|----------|
| A Dharwad | B Rajkot |
| C Delhi | D Ajmer |
- 47 How many numbers of sections are there in Seed act 1966?
- | | |
|------|------|
| A 20 | B 22 |
| C 25 | D 27 |
- 48 Central Seed Testing Laboratory for Bt cotton is located at
- | | |
|-------------|------------|
| A New Delhi | B Varanasi |
| C Hyderabad | D Nagpur |

- 49 Pure seed per cent for okra seed is

A 97	B 98
C 99	D 100
- 50 Which one of the following is a field standard

A Seed moisture	B Seed health
C Isolation distance	D Seed vigour
- 51 Which of the following is moisture proof container?

A Jute bag	B High density polythene bag
C Cloth bag	D Paper bag
- 52 Which of the following is not an authentic seed?

A Labeled seed	B Foundation seed
C Certified seed	D Breeder seed
- 53 In hybrid seed production, hybrid seed is harvested from:

A A- line	B B- line
C R- line	D All the above
- 54 Which of the following is the cheapest method of seed drying

A Sun drying	B Forced air drying
C Heated air drying	D Simple air drying
- 55 Seed meant for general distribution to farmers for commercial crop production refers to :

A Foundation seed	B Breeder seed
C Certified Seed	D Registered seed
- 56 The example of carrier of new technology is

A Bt cotton	B Golden rice
C Both A & B	D Hybrid okra
- 57 Which among the following gel is used for DNA finger printing in electrophoresis

A Agarose	B PAGE
C SDS-PAGE	D Native-PAGE
- 58 Basic seed cleaning is done through

A Thresher	B Seed sheller
C Air screen cleaner	D Specific gravity separator
- 59 ISST publish news letter entitled

A Seed Science	B Seed Science and Technology
C Seed Tech News	D Seed Technology
- 60 Carry over seed is stored for a period of _____ months:

A 6	B 12
C 18	D 24
- 61 Period of protection for field crops as per PPV&FR Act is

A 7 years	B 15 years
C 18 years	D 20 years
- 62 Tarai Development Corporation is established with the financial assistance of:

A Ford foundation	B World bank
C Bill Gate foundation	D ICAR
- 63 Which one of the following is a pre-conditioning machinery

A Velvet separator	B Debearder
C Magnetic separator	D Specific gravity separator
- 64 Gynoecious lines are used in hybrid seed production of :

A Tomato	B Potato
C Bitter gourd	D Chilli
- 65 ISTA head quarter is located at

A India	B Australia
C Switzerland	D Bangladesh
- 66 Indian Institute of Seed Science is located at

A Varanasi	B Mau
C New Delhi	D Anand

- 67 Seed (Control) Order deals with :
A Licensing B Production
C Testing D Export
- 68 Kullu valley of Himachal Pradesh is well known for the seed production of
A Tomato B Chilli
C Cabbage D Brinjal
- 69 Tarai Development Corporation is located at:
A Mumbai B Pantnagar
C Kolkatta D Chennai
- 70 Which among following was the first seed company started its business in India
A Sutton and Son's B Mahyco Pvt Ltd
C Mansanto D Indo American Pvt Ltd
- 71 _____ is an internally seed borne disease
A Loose smut B Anthracnose
C Downy mildew D Leaf spot
- 72 Sudan grass/Johnson grass is an objectionable weed in
A Groundnut B Mustard
C Paddy D Sorghum
- 73 *Argemona maxicana* is an objectionable weed seed of
A Safflower B Mustard
C Green gram D Black gram
- 74 The seed standard should includes :
A Physical purity B Genetic purity
C Seed germination D All the above
- 75 New seed bill was introduced in Indian parliament in the year
A 2000 B 2002
C 2004 D 2006
- 76 Father of seed industry in India is
A N.E. Borlaug B B. R. Barwale
C M. S. Swaminathan D C.T. Patel
- 77 First sorghum hybrid released under AICRP scheme in India was
A CSH 1 B CSH 2
C CSH 12R D HB 1
- 78 Which of the following factor is responsible for varietal deterioration in cross pollinated crops
A Mechanical mixture B Natural crossing
C Developmental variation D Minor genetic variation
- 79 Which of the following IPR is useful for plant variety protection
A Patent B Copyright
C PPVFRA D Geographical indicators
- 80 Breeder seed is a progeny of
A Certified seed B Foundation seed
C Label seed D Nucleus seed

AGRICULTURAL UNIVERSITIES OF GUJARAT

- | | |
|---|---|
| 1. Anand Agricultural University, Anand | 2. Navsari Agricultural University, Navsari |
| 3. Junagadh Agricultural University, Junagadh | 4. S.D. Agricultural University, S.K. Nagar |

Fifth Semester End Examination, B.Sc. (Hons.) Agri. (New regular) December -2019

Course No.: Hort.5.5: Landscaping (2+1)

Date: 11/12/2019

Time: 09.30 to 11.30 hrs.

Day: - Wednesday

Marks: 50

Q.1 (A) Define/Explain the following terms (Any Four) (4.0)

- 1 Landscaping
- 2 *Baradari*
- 3 Bio-aesthetic planning
- 4 Annuals
- 5 Herbaceous perennial
- 6 CAD

(B) : Differentiated between the following (Any Four) (8.0)

- 1 Formal Vs Informal garden
- 2 Arch Vs Pergola
- 3 Creeper Vs Climber
- 4 Edge Vs Hedge
- 5 Shrub Vs Tree

Q.2 (A) Write short notes (Any Four) (8.0)

- 1 Rock garden
- 2 Terrace garden
- 3 Italian garden
- 4 Roof garden
- 5 Wild type garden
- 6 Conservatory

(B) Match the following (5.0)

A		Ans.	B	
1	Rock garden	()	A	Croton
2	Annual creeper	()	B	Borsali
3	Japanese garden	()	C	Star ipomeas
4	Scented flowering shrub	()	D	Chandigarh
5	Fishtail palm	()	E	Lanterns/pagoda
6	Evergreen tree	()	F	Mogra (<i>Jasminum sambac</i>)
7	Brindavan garden	()	G	Feathered leaved
8	Rhaphis palm	()	H	Mysore
9	Hook like structure	()	I	Fan Leaved
10	Foliage shrub	()	J	Bignonia

PTO.....

Q.3 (A) Do as directed (Any Seven) (7.0)

- 1 Enlist the garden adornments.
- 2 Enlist the features of Mughal garden.
- 3 Enlist winter season annuals.
- 4 Enlist different types of grasses used for lawn making.
- 5 Give the benefits of CAD.
- 6 Enlist the principles of landscape gardening.
- 7 Write the uses of trees in landscape gardening.
- 8 Enlist the different types and styles of bonsai.

(B) State whether the following statement is/are TRUE or FALSE (5.0)

- 1 Cactus plants are suitable for rock garden.
- 2 Shallow pan/container is mandatory for making of bonsai.
- 3 Coconut palm has fan shaped leaves.
- 4 Kalanchoe is an example of succulent plant
- 5 In India, bio-aesthetic planning was brought by Dr. S. M. Swaminathan.
- 6 Japanese garden is a formal style of garden.
- 7 The flower color of *Cassia fistula* is red.
- 8 In India, road side plantation was started by emperor Ashoka.
- 9 *Petunia* is suitable for hanging basket
- 10 *Melia azadirachta* is an-economic species for roadside planting.

Q.4 (A) Answer the following in detail (Any four) (8.0)

- 1 Define the lawn. Explain different planting methods of lawn.
- 2 Write down the scope and importance of landscaping.
- 3 Describe about vertical gardening.
- 4 Write down care and maintenance of pot/house plants.
- 5 Landscaping for urban and rural areas.

(B) Fill in the blanks with appropriate word. (5.0)

- 1 Lotus is suitable for _____ garden.
- 2 Cacti are the members of _____ family.
- 3 _____ is known as heart of garden.
- 4 Gaillardia is commonly known as _____ flower.
- 5 Balsam is propagated through _____.
- 6 Synonym of "Flam of Forest" is _____.
- 7 Informal garden has _____ design.
- 8 A _____ without a lawn is not considered as complete.
- 9 _____ is a symbol for source of life in Mughal garden.
- 10 The full form of CAD is _____.

University seat No: _____

Centre: _____

Registration No. _____

Sign. of Supervisor. _____



AGRICULTURAL UNIVERSITIES OF GUJARAT

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Fifth Semester End Examination of B. Sc. (Hons.) Agri. (Regular) 2019 (IV Deans')

Course No: Ag. Econ. 5.4 **Title:** Fundamentals of Agril. Business Management (1+1)

Date: 11/ 12/ 2019

Time: 09.30 to 10.15 hrs

Day: Wednesday

Marks: 40

Marks obtained:

PART-A: (Objective)

Q. No.	Write the most appropriate option in CAPITALS (A / B / C / D) in the separate answer sheet (OMR sheet) given to you.			
1	Solvency of a business can be determined by evaluating the.			
	a.	Cash flow statement	c.	Price to earnings ratio
	b.	Debt to equity ratio	d.	Net income
2	Which among the following is not a financial statement?			
	a.	Balance sheet	c.	Budget statement
	b.	Cash flow statement	d.	Income statement
3	A concept of Agri-business, given by-----.			
	a.	David and Goldberg	c.	Amaranth
	b.	A.H. John	d.	None of these
4	The top level management includes ----- and----- having collective responsibility.			
	a.	CEO & Directors	c.	Both a & b
	b.	Supervisors & foremen	d.	None of these
5	Agribusiness involves Input, Output and ----- sectors.			
	a.	Farm sectors	c.	Product sectors
	b.	Business sectors	d.	Both a & c
6	Agribusiness can be defined as transition from ----- agriculture.			
	a.	Subsistence to commercial	c.	Improved to ancient
	b.	Commercial to subsistence	d.	Forest to Farm
7	Management is a _____ process through which objectives of a business firm are determined.			
	a.	Forward thinking	c.	Decision making
	b.	Participatory	d.	All of these
8	Planning is ----- about the future course of action.			
	a.	Backward thinking	c.	Forward thinking
	b.	Decision making	d.	All of these
9	----- brings co-operation, harmony and integrity among the people.			
	a.	Planning	c.	Staffing
	b.	Controlling	d.	Organization
10	Capital is a -----factor of production.			
	a.	Man-made	b.	Natural
	c.	Unlimited	d.	Original
11	----- is defined as the property of assets of being easily turned in to money.			
	a.	Liquidity	b.	Solvency
	c.	Profitability	d.	None

12	----- are those items which are owned by the farmer.			
	a.	Liabilities	c.	Assets
	b.	Net worth	d.	None of these
13	Balance sheet is a statement of financial position of a firm at a -----.			
	a.	Period of time	c.	Particular point of time
	b.	Specific period of time	d.	None of these
14	Income statement is also called as-----.			
	a.	Net worth statement	c.	Cash flow statement
	b.	Profit-loss statement	d.	All of these
15	Agro-based industries are the example of -----.			
	a.	Resource based	c.	Skill based
	b.	Demand based	d.	Ancillary
16	----- is the lifeline of business.			
	a.	Budget	c.	Profit
	b.	Expenditure staff	d.	None of these
17	Full form of IIM is -----.			
	a.	Indian Indus Management	c.	Industrial Institute of Management
	b.	Indian Institute of Management	d.	Indian Institute of Mobility
18	4Ps of marketing is known as -----.			
	a.	Niche Marketing	c.	Both a & b
	b.	Marketing Mix	d.	None of these
19	The area of financial management would include the -----.			
	a.	Acquiring finance	c.	Distributing income
	b.	Utilizing finance	d.	All of these
20	Establishment of agro-based industries is based on the availability of -----.			
	a.	Labour	c.	Marketing
	b.	Raw material	d.	Transportation
21	If one firm assumes other functions related to <i>consumption function</i> is called -----			
	a.	Forward integration	c.	Both a & b
	b.	Backward integration	d.	None of these
22	From the following choose the correct example of Conglomerate integration.			
	a.	Hindustan Lever Ltd	c.	Co-operative farming societies
	b.	Co-operative marketing societies	d.	Poultry farming
23	The formula used for calculating the breakeven point is-----.			
	a.	Fixed costs/Revenue per unit - Variable costs	c.	Revenue per unit/ Fixed costs - Variable costs
	b.	Variable costs/Revenue per unit - Fixed costs	d.	Fixed costs/Variable costs - Revenue per unit
24	Land is considered to be a _____ asset			
	a.	Short-term	b.	Long-term
	c.	Intermediate asset	d.	All of the above
25	The levels of management are categorized into _____ levels.			
	a.	Three	b.	Four
	c.	Five	d.	Seven
26	Which is not a component of marketing mix?			
	a.	Place	b.	Price
	c.	Promotion	d.	Profit
27	----- is a systematic search of new knowledge.			
	a.	Research	b.	Planning
	c.	Finance	d.	All
28	Net worth represents----- equity in the business.			
	a.	Debt	b.	Owner's
	c.	Marginal	d.	All
29	In survey method of market research the method which is having highest response rate is _____			
	a.	Telephone	b.	Mail
	c.	Online	d.	Face-to-face
30	----- is one of the main functions of management.			
	a.	Planning	b.	Budgeting
	c.	Controlling	d.	Organizing
31	At present processing is done at ----- level.			
	a.	Secondary	b.	Primary
	c.	Tertiary	d.	All

32	NDDB was established in the year 1965 at _____.			
	a. Junagadh	b. Anand	c. Navsari	d. Dantewada
33	Agro – based industries are _____ intensive.			
	a. Labour	b. Capital	c. Both (a) and (b)	d. Machinery
34	Green revolution in agriculture was focused mainly on _____.			
	a. Crop yield	b. Capital	c. Profit	d. Price
35	Cash-flow statement helps us in understanding _____.			
	a. Liquidity	b. Solvency	c. Profitability	d. All
36	Long range planning is also called _____ planning.			
	a. Complex	b. Tactic	c. Strategic	d. Simple
37	Planning is an expensive exercise, in terms of _____.			
	a. Time	b. Money	c. Both a and b	d. None
38	Bullock cart is an _____ assets.			
	a. Current	b. Fixed	c. Intermediate	d. None
39	Agri. Business mainly emphasis on _____.			
	a. Farming	b. Processing	c. Marketing	d. Assembling
40	Assets and liabilities are taken up in a _____ statement.			
	a. Income	b. Cash-flow	c. Networth	d. None
41	Food and beverages unit is an example of _____ based industries.			
	a. Demand	b. Market	c. Supply	d. None
42	Products are more identified by their _____ name.			
	a. Brand	b. Market	c. Chemical	d. Consumer
43	To increase the country's foreign exchange, agro-commodities need to be traded in _____ markets.			
	a. National	b. Local	c. International	d. Regional
44	Seasonality in production affects _____ if storage is not carried out.			
	a. Market Price	b. Efficiency	c. Market research	d. Market volatility
45	The current ratio is the most commonly recognized indicator of a firm's _____.			
	a. Liquidity	b. Liability	c. Both a & b	d. None
46	_____ is a refinancing firm for agriculture.			
	a. SBI	b. RBI	c. ICICI	d. NABARD
47	_____ viewed, management and entrepreneur as the "Engine of growth".			
	a. Schumpeter	b. J.B.Say	c. George Terry	d. Marshall
48	Short range planning is also called _____ planning.			
	a. Complex	b. Strategic	c. Tactic	d. Complex
49	In pricing policy, the cost of _____ is considered basis for price determination.			
	a. Advertisement	b. Labour	c. Cultivation	d. Production
50	To protect the interest of producer, the govt. of India fixes the price under_____.			
	a. MSP	b. FHP	c. MRP	d. All
51	Planning describes what one _____ to happen.			
	a. Demands	b. Wants	c. Expects	d. Needs
52	Which was formed to promote horticultural development in India?			
	a. NHB	b. APEDA	c. NABARD	d. MPEDA
53	Planning describes what one _____ to happen.			
	a. Demands	b. Wants	c. Expectation	d. Needs
54	_____ farming can lead to the realization of premium price.			
	a. Organic	b. Inorganic	c. Contract	d. Capitalistic
55	Capital is supply _____ as it can be altered according to the needs of the organization.			
	a. Elastic	b. Inelastic	c. Both (a) and (b)	d. None
56	IRR is the discount rate at which NPW is equal to _____.			
	a. Positive	b. Negative	c. Both (a) and (b)	d. Zero
57	The project cycle can be divided into _____ phases			
	a. Six	b. Seven	c. Five	d. Four

58	The appropriate tests of working capital policy is _____.							
	a.	Circulation	b.	Liquidity	c.	Structural Health	d.	All
59	The term 'Codex Alimentarius' is used for which of the following?							
	a.	Food	b.	Clothes	c.	Fodder	d.	All
60	The prevention of Food Adulteration Act was constituted under the chairmanship of -----							
	a.	S.G.Patil	b.	V.V.Giri	c.	E.S.Venkataramaiah	d.	Vergheese Kurien
61	----- is the Father of Principles of Management.							
	a.	Peter Druker	b.	Adam Smith	c.	Lawrence Appley	d.	Henry Fayol
62	----- are high value crops to be produced under greenhouse condition.							
	a.	Foodgrains	b.	Flowers	c.	Cotton	d.	Pulses
63	The basic objective of agricultural planning is to improve-----.							
	a.	Production	b.	Productivity	c.	Both a & b	d.	None of these
64	Agricultural policy reforms can broadly be divided into type of categories.							
	a.	Technological	b.	Marketing	c.	Institutional	d.	All of these
65	In which stage of product life cycle the high profit is earned.							
	a.	Introduction	b.	Growth	c.	Maturity	d.	Decline
66	The cost of the items that become part of the end-product are known as-----.							
	a.	Direct	b.	Indirect	c.	Fixed	d.	Variable
67	----- function measures the deviation from the desired course of action.							
	a.	Planning	b.	Financing	c.	Controlling	d.	Organizing
68	The element/s of good management is/are -----.							
	a.	Human	b.	Technical	c.	Both a & b	d.	None of these
69	----- is the first step towards success of management.							
	a.	Controlling	b.	Ordering	c.	Budgeting	d.	Planning
70	Services are ----- in nature.							
	a.	Intangible	b.	Tangible	c.	Both a & b	d.	None of these
71	Farming is comparatively a ----- scale business in India.							
	a.	Large	b.	Small	c.	Medium	d.	All
72	Working capital is also called as-----.							
	a.	Fixed	b.	Circulating	c.	Gross	d.	All
73	The first Advanced Agribusiness Management seminar was held in _____.							
	a.	Manila	b.	Canada	c.	Germany	d.	Baroda
74	A group of potential buyers for which a business positions its products and services is _____							
	a.	Target Market	b.	Niche market	c.	Segmentation	d.	All of these
75	Patron owned is a form of -----.							
	a.	Corporation	b.	Commerce	c.	Cooperative	d.	All of these
76	Most of the agribusiness firm's structure is generally -----in nature and management.							
	a.	Horizontal	b.	Vertical	c.	Conglomeration	d.	All of these
77	The mantra of a successful retail business is -----.							
	a.	Management	b.	Location	c.	Planning	d.	Budgeting
78	Assembling, processing and packing are components of -----integration.							
	a.	Horizontal	b.	Vertical	c.	Conglomeration	d.	All of these
79	Produced means of further production is -----.							
	a.	Income	b.	Capital	c.	Wealth	d.	All of these
80	Investment / Annual net cash revenue is the formula for _____.							
	a.	Pay-back period	b.	IRR	c.	NPW	d.	BCR

AGRICULTURAL UNIVERSITIES OF GUJARAT

ANAND / JUNAGADH / NAVSARI / SARDAR KRUSHINAGAR

Fifth Semester (New-Regular) End Examination of B.Sc. (Hons.) Agri.-Dec. 2019

Course No.: Agron.5.7: Geo-informatics and Precision Farming (1+1)

Date: 10/12/2019 (Tuesday)

Time: 09:30 to 11:30 hrs

Marks: 50.00

Q.1 (A) Select the most appropriate option from the followings [4.00]

- 1)GIS component provides the functions and tools needed to store, analyze and display geographic information.
(a) Hardware (b) Software (c) Data (d) All of these
- 2) Remote sensing of emitted radiation is known as.....
(a) Optical (b) Microwave (c) Passive (d) Thermal
- 3) Receiving signals from more than.....different satellites, the position of the GPS receiver can more accurately be determined.
(a) Two (b) Three (c) Four (d) Six
- 4) The variability which varies with time from year to year is known as.....
(a) Spatial (b) Predictive (c) Temporal (d) All of these
- 5) More than 58% of operational land holding in the country has size.....
(a) > 1.0 ha (b) < 1.0 ha (c) 2.0 ha (d) 4.0 ha
- 6) At NRSA, the maps of salt affected soils for entire country have been prepared at.....scale using satellite data.
(a) 1:250000 (b) 1:500000 (c) 1:10000 (d) 1:100000
- 7)is framework of crop simulation model.
(a) CropSyst (b) IRRIGATE (c) DSSAT (d) EPIC
- 8) Soil Test Crop Response (STCR) correlation methodology was designed by.....
(a) Ramamoorthy (b) Swaminathan (c) Liebig (d) Wilcox

(B) Define precision farming. Describe its steps along with advantages [5.00]

(C) Answer in brief [4.00]

- 1) Modeling in agricultural systems
- 2) Steps to be taken for implementing precision farming in India

Q.2 (A) Fill in the blanks with appropriate word [4.00]

- 1) Use of GIS began duringyear.
- 2)is used for precise location of activities.
- 3) The x-axis of histogram is range of available digital numbers is.....
- 4) Remote sensing systems, which use their own energy is known as.....
- 5)map is plotted using the entire set of soil samples.
- 6)simulation representing a system evolving over time.
- 7)principles involve map, map design and map visualization and production in analogue or digital computer environment.
- 8)is the process of defining image characteristics which effectively provides meaningful information for image interpretation or classification.

(P.T.O.)

(B) Define / Explain the following terms (Any EIGHT) [4.00]

- | | | |
|-------------------------|------------------------------|---------------|
| 1) Remote sensing | 2) Simulation | 3) GPS |
| 4) Image processing | 5) Agronomic efficiency | 6) Longitude |
| 7) Agro-geo-informatics | 8) Variable rate application | 9) Resolution |

(C) Differentiate the followings (Any FOUR) [4.00]

- | | | |
|--------------------------|-----------|-----------------------------------|
| 1) Vector models | <i>Vs</i> | Raster models |
| 2) Precision agriculture | <i>Vs</i> | Conventional agriculture |
| 3) Discrete model | <i>Vs</i> | Continuous model systems |
| 4) Geostationary | <i>Vs</i> | Sun-synchronous satellites |
| 5) Supervised | <i>Vs</i> | Unsupervised image classification |

Q.3 (A) Write short note on followings (Any THREE) [6.00]

- 1) Soil Test Crop Response (STCR) approach
- 2) Remote sensing application in agriculture
- 3) GPS components
- 4) Phases of computer simulation development and analysis

(B) Practical problems for application of precision agriculture in India [4.00]

(C) Write the full form for the followings (Any SIX) [3.00]

- | | | |
|---------|---------|---------|
| 1. LCC | 2. GUI | 3. GLCM |
| 4. SPAD | 5. NDVI | 6. GNSS |
| 7. ISRO | 8. MSS | 9. SDLC |

Q.4 (A) Do as directed (Any SIX) [6.00]

- 1) List out elements of remote sensing
- 2) Draw a diagram of precision farming: a comprehensive approach
- 3) Enlist tools and techniques of precision farming
- 4) Enlist importance of GIS
- 5) Narrate GPS applications
- 6) Enlist the principles of successful simulation
- 7) List out steps of modeling process

(B) Write role of automation, drones and robotics in agriculture [2.00]

(C) Match the followings [4.00]

“Group-A”

1. Deterministic system
2. COTTAM model
3. Stochastic system
4. Precision
5. CropSyst model
6. 2D/2 dimensional position
7. Accuracy
8. 3D/3 dimensional position

“Group-B”

- A. Cotton crop
- B. Not a random variable
- C. Wheat and other crops
- D. Random variable
- E. Three satellite signals
- F. True value
- G. Average value
- H. More than three satellite signals

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Fifth Semester End Examination of B. Sc. (Hons.) Agri. (Regular) 2019 (IV Deans')

Course No: Ag. Econ. 5.4 **Title:** Fundamentals of Agril. Business Management (1+1)

Date: 11/ 12/ 2019

Time: 10.15 to 12.00 hrs

Day: Wednesday

Marks: 40

PART-B (Subjective)

- Q-1** (a) Discuss in detail the steps of project cycle. (4)
(b) (i) Explain the importance and scope for agribusiness in Indian economy. (6)
(ii) Write briefly on the methods of market research.
- Q-2** (a) Discuss in detail about the types of market segments. (4)
(b) **Write short note on following: (ANY TWO)** (6)
(i) Agricultural policies of India
(ii) Constraints in establishing agro based industries
(iii) Distinctive features of Agribusiness Management
- Q-3** (a) **Define the following: (ANY FOUR)** (4)
(i) Agribusiness
(ii) Marketing management
(iii) Target marketing
(iv) Planning
(v) Staffing
(vi) Marketing mix
(b) **Differentiate the following: (ANY TWO)** (6)
(i) Horizontal Integration V/s Vertical Integration
(ii) Undiscounted V/s Discounted measures
(iii) Fixed capital V/s Working capital
- Q-4** **Do as directed: (ANY FIVE)** (10)
(i) Give five examples of agro-based industries.
(ii) What are the major functions of management?
(iii) Write a short note on agri-clinics.
(iv) Write the consequence of the over assessment of working capital.
(v) Draw the diagram of the structure of agri -business.
(vi) Give the criteria for selection of agricultural projects.
(vii) Enlist the steps of Planning.



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FIFTH Semester End Examination of B. Sc. (Hons.) Agriculture (Old- Regular) Dec.- 2019

Course No.: Agron 5.7 **Title of Course:** Water Management Including Micro Irrigation (2+1)

Date: 10-12-2019 (Tuesday)

Time: 09.30 to 12.00 hrs.

Total Marks	Marks Obtained	Examiner's Signature
40.00		

PART-A: OBJECTIVE

1. Direct method of measuring moisture content of soil is _____.
(a) Tensiometer (b) Neutron moisture meter (c) Electrical resistance (d) Gravimetric
2. _____ period is most critical for moisture requirement in pearl millet.
(a) Soft dough stage (b) Tillering (c) Flowering (d) Vegetative
3. Most moisture sensitive growth stage of sugarcane is _____.
(a) Formative stage (b) Grand growth stage (c) Arrowing stage (d) Maturity stage
4. _____ crop has maximum consumptive use of water.
(a) Paddy (b) Summer pearl millet (c) Potato (d) Wheat
5. One cusec = _____ litres of water.
(a) 1000 (b) 100 (c) 28.32 (d) 16.99
6. _____ region contributes maximum surface water potential in Gujarat.
(a) North Gujarat (b) South & Central Gujarat (c) Saurashtra (d) Kutchh
7. The USWB class A pan is most commonly used for measuring _____.
(a) Evaporation (b) Transpiration (c) Precipitation (d) ET
8. Higher IW/CPE ratio indicates irrigation at _____ interval.
(a) Longer (b) Shorter (c) Equal (d) None
9. _____ approach of irrigation scheduling is more acceptable to the farmers.
(a) Climatological (b) Depth interval yield (c) Soil moisture deficit (d) Critical growth stages
10. High salinity water has EC between _____ dS/m.
(a) 0.25 to 0.75 (b) 0.75 to 2.25 (c) Less than 0.25 (d) More than 2.25
11. $IR =$ _____.
(a) $WR - ER + S$ (b) $WR + ER + S$ (c) $WR + ER - S$ (d) $WR - (ER + S)$
12. The unit of residual sodium carbonate (RSC) is _____.
(a) m.eq/100g soil (b) Per cent (c) Unit less (d) m.eq / lit
13. The water in soil at maximum water holding capacity is held at _____ atm tension.
(a) - 15 (b) - 0.33 (c) - 0.1 (d) 0
14. Clay and humus colloids absorb water and get swollen is called _____ water.
(a) Non Capillary (b) Gravitational (c) Imbibitional (d) Capillary

15. The highest area is irrigated by _____ source of water in India.
(a) Canal (b) Well & tube well (c) Tanks (d) Tube well
16. The author of book "Principles and Practices of Water Management" is _____.
(a) Panda, S.C. (b) A. M. Michael (c) Lenka, D. (d) S. R. Reddy
17. The average annual rainfall of India is _____.
(a) 1090 mm (b) 1290 mm (c) 1390 mm (d) 1190 mm
18. Net irrigated area of Gujarat state before the inception of SSP is _____.
(a) 38.4 lakh ha (b) 28.4 lakh ha (c) 30.8 lakh ha (d) 54.5 lakh ha
19. Amount of water received from rainfall annually in India accounts for _____ million ha-m.
(a) 300 (b) 392 (c) 400 (d) 328
20. _____ water is used by the plants for their normal growth.
(a) Gravitational (b) Hygroscopic (c) Capillary (d) Non capillary
21. One atmosphere = _____ cm of water column.
(a) 1023 (b) 1032 (c) 1013 (d) 1042
22. In sandy soils generally the value of FC is _____.
(a) > ME (b) < ME (c) = ME (d) No relation
23. Water retained in the soil capillaries is due to _____.
(a) Adhesion (b) Surface tension (c) Cohesion (d) All of these
24. The ratio of weight of oven dry soil solids to bulk volume of soil is referred as _____.
(a) Bulk density (b) Partical density (c) Porosity (d) Specific gravity
25. Net depth of irrigation is 6.0 cm and field application efficiency is 75 %, then gross irrigation depth is _____.
(a) 7.14 cm (b) 7.14 mm (c) 8.0 mm (d) 8.0 cm
26. A green plant regulates their body temperature by _____ mechanism.
(a) Respiration (b) Transpiration (c) Photosynthesis (d) All of these
27. _____ method of irrigation has higher duty of water.
(a) Drip (b) Sprinkler (c) Furrow (d) Check basin
28. One cumec flow of water discharges _____ cubic metre water in an hour.
(a) 1000 (b) 35.91 (c) 60 (d) 3600
29. _____ stage is most critical for moisture requirement in maize crop.
(a) Knee high (b) Seedling (c) Silking (d) Dough stage
30. _____ crop has higher water use efficiency.
(a) Maize (b) Wheat (c) Groundnut (d) Potato
31. Infrared thermometer is used to measure _____.
(a) Water temperature (b) Crop canopy temperature (c) Air temperature (d) Soil temperature
32. Low land rice is irrigated by _____ method of irrigation.
(a) Furrow (b) Check basin (c) Flooding (d) Border strip
33. _____ devices are used to measure the flowing water.
(a) V- notch weir (b) Parshall flume (c) Orifice (d) All of these
34. Saline water can be safely used by _____ method of irrigation.
(a) Drip (b) Check basin (c) Basin (d) Furrow
35. Sprinkler irrigation is not suitable for _____ soil to irrigate crop.
(a) Clay loam (b) Loamy sand (c) Sandy loam (d) Heavy black
36. The flowing water is measured in _____.
(a) Hectare- cm (b) Litre (c) Cusec (d) Cubic meter
37. Total depth of water required by a crop during its entire life period is called _____.
(a) Duty (b) Delta (c) Irrigation depth (d) Consumptive use
38. The unit of WUE is _____.
(a) Kg/cm (b) Kg/ha-cm² (c) Kg/ha (d) Kg/ha-cm
39. One ha-cm water is equal to _____ litre water.
(a) 40000 (b) 400000 (c) 100000 (d) 10000

40. Under unsaturated soil condition horizontal movement of water in the soil is governed by _____.
- (a) Ψ_m and Ψ_g oppose one another (b) Ψ_m and Ψ_g potential altogether (c) Ψ_g potential (d) Ψ_m potential
41. The free energy of soil water is affected by _____.
- (a) Osmotic potential (b) Gravitational potential (c) Matric potential (d) All of these
42. Hygroscopic water is held by soil particles at a tension of _____ atm.
- (a) -31 to -10000 (b) -0.3 to -15 (c) -15 to -31 (d) -31 to -60
43. Moisture retained in soil under certain standard conditions is referred as _____.
- (a) Moisture equivalent (b) Soil moisture tension (c) Soil moisture (d) Soil moisture constant
44. Water retains in the soil between FC and PWP is known as _____ water.
- (a) Unavailable (b) Available (c) Free (d) Capillary
45. Nearly constant rate develop after some time has elapsed from the start of irrigation is referred as _____.
- (a) Infiltration velocity (b) Infiltration rate (c) Infiltration (d) Basic infiltration rate
46. _____ potential is due to presence of salts in the soil solution.
- (a) Osmotic (b) Gravitational (c) Matric (d) Pressure
47. Sandy loam soil retains _____ % moisture at field capacity.
- (a) 5-15 (b) 15-30 (c) 12-20 (d) 25-40
48. The soil having permeability between 5 to 7 cm/hour is rated as _____.
- (a) Slow (b) Rapid (c) Moderate (d) Very poor
49. In general, _____ soil has a wider range of available water between FC and PWP.
- (a) Clay loam (b) Loamy (c) Sandy loam (d) Clayey
50. The force pulling inward at the surface of liquid, tending to make the surface area as small as possible is called _____.
- (a) Matric potential (b) Osmotic potential (c) Surface tension (d) Gravitational potential
51. _____ is used to open clogging of drippers due to algae and bacterial slime.
- (a) Chlorine (b) H_2SO_4 (c) HCl (d) NaCl
52. Total water requirement of potato crop is _____.
- (a) 250- 350 mm (b) 350- 450 mm (c) 700- 800 mm (d) 450- 600 mm
53. _____ refers to disposal of drainage water through well into porous layers of earth.
- (a) Mole drainage (b) Tile drainage (c) Vertical drainage (d) Horizontal drainage
54. _____ is use to drain water from low lying area having water due to embankment.
- (a) Lift drainage (b) Gravity drainage (c) Field surface drainage (d) Ditch drainage
55. _____ is a type of surface drainage.
- (a) Mole drainage (b) Tile drainage (c) Ditch drainage (d) Vertical drainage
56. _____ monsoon contribute about 70% of total rainfall in India.
- (a) South-West (b) North-West (c) South-East (d) North-East
57. The value of _____ potential is always positive.
- (a) Osmotic (b) Matric (c) Gravitational (d) Solute
58. The readiness with which a porous medium transmit water is termed as _____.
- (a) Seepage (b) Percolation (c) Permeability (d) Infiltration
59. Soil moisture tension is measured using _____.
- (a) Height of water column (b) Atmosphere (c) pF (d) All of these
60. Water retains in the soil between field capacity and permanent wilting point is _____.
- (a) Capillary water (b) Available water (c) Unavailable water (d) Free water
61. Field capacity is _____ limit of available water to plants.
- (a) Upper (b) Lower (c) Middle (d) None

62. Capillary water is not be available to the plants if the tension is _____.
 (a) > 15 atm (b) 0.1 atm (c) 0.3 atm (d) < 15 atm
63. _____ is not a component of the total soil water potential.
 (a) Osmotic potential (b) Gravitational potential (c) Matric potential (d) Turgor potential
64. _____ method of irrigation have maximum duty of water.
 (a) Furrow (b) Check basin (c) Drip (d) Sprinkler
65. _____ is used as indicator plant for determination of PWP.
 (a) Paddy (b) Wheat (c) Groundnut (d) Sunflower
66. Irrigation interval is _____, when total 10 irrigations are applied to crop having growing period of 120 days.
 (a) 10 days (b) 12 days (c) 8 days (d) 14 days
67. An application of irrigation water through shallow furrows is called _____.
 (a) Alternate furrow (b) All furrow (c) Skip furrow (d) Corrugation
68. The term 'trickle irrigation' is used for _____.
 (a) Sprinkler irrigation (b) Drip irrigation (c) Surge irrigation (d) Cablegation
69. An intermittent application of water to field surface under gravity flow is practiced in _____ method of irrigation.
 (a) Border strip (b) Surge (c) Check basin (d) Cablegation
70. Water application efficiency is comparatively higher in _____ soil.
 (a) Sandy (b) Clayey (c) Medium black (d) Loamy
71. Water having RSC _____ m.eq./lit is not suitable for irrigation.
 (a) Less than 1.25 (b) 1.25 to 2.50 (c) More than 2.50 (d) None
72. _____ crop is tolerant to high boron content.
 (a) Wheat (b) Barley (c) Date palm (d) Apple
73. The unit of sodium adsorption ratio (SAR) is _____.
 (a) Unitless (b) m.eq./lit (c) meq/100 g soil (d) percent
74. _____ method of sowing is practiced for more germination of seed when irrigation water is saline.
 (a) Drilling (b) Ridge & furrow (c) Dibbling (d) Broadcasting
75. Water logging problem becomes serious when hydraulic conductivity of soil is _____.
 (a) < 2.5 cm/hr (b) 2.5 to 5.0 cm/hr (c) > 5.0 cm/hr (d) None
76. Artificial removal of excess water from soil is called _____.
 (a) Seepage (b) Drainage (c) Infiltration (d) Percolation
77. Higher concentration of Mg in irrigation water induces deficiency of _____.
 (a) Ca (b) Na (c) K (d) Cl
78. Irrigation water is classified into _____ categories based on electrical conductivity.
 (a) 5 (b) 4 (c) 3 (d) 2
79. The efficiency with which water is conveyed from source of supply to the field is called _____ efficiency.
 (a) Water conveyance (b) Water distribution (c) Water application (d) Water storage
80. WUE of high yielding cultivar is _____ as compared to local cultivars under similar management.
 (a) Lower (b) Similar (c) No impact (d) Higher

* * * * *

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Fifth Semester B. Sc. (Agri.) (Hons.) (Regular) End Examination, December- 2019 (4 th Deans)	
Ag. Ento 5.3: Pests of field crops and stored grain and their management (2+1)	
Date : 09-12-2019	Time : 09.30 to 12.00 hrs
Day : Monday	Total Marks : 80.00

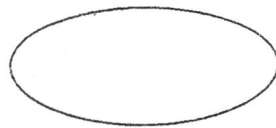
PART – B : SUBJECTIVE

Time : 10.15 to 12.00 hrs

Marks : 40.00

- Q.1 Give the nature of damage of the following insect pests (Any Five) (10.00)**
- | | |
|-------------------------|----------------------|
| i. Castor capsule borer | ii. Rice BPH |
| iii. Wheat termite | iv. Groundnut thrips |
| v. Cotton pink bollworm | vi. Sorghum shootfly |
| vii. Pulse beetle | |
- Q.2 Give the IPM strategy for the following insect pests (Any Four) (10.00)**
- | | |
|------------------------------------|------------------------|
| i. Phytophagous mite | ii. Maize stem borer |
| iii. Locust | iv. Sugarcane pyrrilla |
| v. Tobacco leaf eating caterpillar | vi. Gram cut worm |
- Q.3 (A) Describe the life cycle of the following insect pests (Any Five) (5.00)**
- | | |
|-------------------------|------------------------|
| i. Groundnut white grub | ii. Sorghum stem borer |
| iii. Cotton Mealy bug | iv. Yellow stem borer |
| v. Gram pod borer | vi. Jassid |
- (B) Give scientific reasons for the following (Any Five) (5.00)**
- 1) Til sphinx moth is known as pest of honey bee.
 - 2) Timely sowing of castor is advocated.
 - 3) Marigold is intercropped with cotton
 - 4) Castor is grown around tobacco nursery
 - 5) Seed treatment with quinalphos is recommended in groundnut.
 - 6) Flooding is advisable for management of gram cutworm
- Q.4 (A) Enlist the pests of oilseed crops and describe the nature of damage and IPM strategy for castor semilooper (5.00)**
- OR**
- Enlist the pests of cereal crops and describe the nature of damage and IPM strategy for fall armyworm in maize
- (B) Do as directed. (5.00)**
- 1) Write the characteristic of rodents.
 - 2) Enlist the insect pests of stored grains.
 - 3) How we can differentiate live and dead rodent burrow ?
 - 4) Detrashing of lower leaves in sugarcane is advisable.
 - 5) Enlist five newer insecticides.

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Fifth Semester B. Sc. (Agri.) (Hons.) (Regular) End Examination, December- 2019 (4 th Deans)	
Ag. Ento 5.3: Pests of field crops and stored grain and their management (2+1)	
Date : 09-12-2019	Time : 09.30 to 12.00 hrs
Day : Monday	Total Marks : 80.00

PART – A : OBJECTIVE

Time : 09.30 to 10.15 hrs

Marks : 40.00

Note: Write the correct option A/B/C/D in CAPITAL LETTERS ONLY in provided answer sheet

1.	“Hopper burn” symptoms in cotton are due to the attack of _____.			
	A Whitefly	B Thrips	C Aphid	D Leaf hopper
2.	_____ is also known as cotton stainer.			
	A White fly	B Red cotton bug	C Mite	D Thrips
3.	Entry hole on cotton boll plugged with excreta indicates the incidence of _____.			
	A <i>Spodoptera litura</i>	B American boll worm	C Pink boll worm	D Spotted boll worm
4.	The double seeds in cotton is due to damage of _____.			
	A <i>Spodoptera litura</i>	B Spotted boll worm	C Pink boll worm	D American boll worm
5.	Moth of _____ has wedge shaped green band in middle of the fore wings.			
	A <i>Earias insulana</i>	B American bollworm	C <i>Earias vittella</i>	D <i>Anomis flava</i>
6.	Adult is wedge shaped, pale green to yellowish green in colour and walks diagonally.			
	A Aphid	B Jassid	C Whitefly	D Mite
7.	‘White ear’ in rice is due to the attack of _____.			
	A Leaf folder	B Case worm	C Stem borer	D Leaf folder
8.	_____ is responsible for gall formation in rice.			
	A Orseolin	B Cecidogen	C Cecimogen	D Ceciden
9.	Alternate wetting and drying is essential management technique for the management of _____.			
	A BPH	B GLH	C WBPH	D BLH
10.	“Rice tungro virus” is transmitted by _____.			
	A <i>Nephotettix nigropictus</i>	B <i>Dicladispa armigera</i>	C <i>Nilaparvata lugens</i>	D <i>Scirpophaga incertulus</i>
11.	Incidence of _____ produce bunchy top in sugarcane.			
	A Shoot borer	B Top borer	C Internode borer	D Stalk borer
12.	<i>Epiricania melanoleuca</i> is a ecto-parasitoid of _____.			
	A Pyrrilla	B Whitefly	C Mite	D Aphid
13.	Stored grains should have _____ moisture.			
	A Above 12%	B Above 16%	C Below 10%	D Below 16%
14.	Damage symptom of pulse beetle is _____.			
	A Holes on the grain	B Webbing of the grain	C Feed the foliage	D None of these
15.	_____ gas is liberated when aluminium phosphide reacts with moisture.			
	A Nitrogen	B Phosphine	C Hydrogen	D Phosphide

16.	_____ is used to prepare poison bait for management of field rats.							
	A	Barium carbonate	B	Aluminium phosphide	C	Zinc phosphide	D	Strychnine sulphate
17.	_____ infest mungbean in field and storage.							
	A	Plume moth	B	Pulse beetle	C	Pod fly	D	Pod borer
18.	_____ crop is used to attract female moth of <i>Helicoverpa armigera</i> for oviposition.							
	A	Mustard	B	Marigold	C	Tobacco	D	Okra
19.	_____ insect has medium sized adult having fringed wings.							
	A	<i>Spodoptera litura</i>	B	<i>Helicoverpa armigera</i>	C	Tur plume moth	D	Whitefly
20.	Adults of white grub feed on _____.							
	A	Neem leaves	B	Drumstick leaves	C	Ber leaves	D	All of the above
21.	“Bud necrosis” in groundnut is transmitted by _____.							
	A	Whitefly	B	Thrips	C	Aphids	D	Jassids
22.	Seeds of groundnut should be treated with chlorpyrifos 20 EC @ _____ for white grub management.							
	A	50 ml/kg seeds	B	20 ml/kg seeds	C	25 ml/kg seeds	D	35 ml/kg seeds
23.	Prominent death's head mark found on the thorax of _____.							
	A	Til hawk moth	B	Leaf webber	C	Sesame Gallfly	D	Pentatomid bug
24.	ETL of mustard aphid is _____ aphid Index.							
	A	1.5	B	1.0	C	2.0	D	3.0
25.	On slightest disturbance the larva of _____ falls on ground & shows “Feign death”.							
	A	Sawfly	B	Diamond back moth	C	Hairy caterpillar	D	Painted bug
26.	Scientific name of sunflower capitulum borer is _____.							
	A	<i>Spodoptera litura</i>	B	<i>Helicoverpa armigera</i>	C	<i>Spilosoma oblique</i>	D	<i>Dolycoris indicus</i>
27.	High seed rate of sorghum is recommended for management of _____.							
	A	Shoot bug	B	Grain midge	C	Shoot fly	D	Earhead bug
28.	Scientific name of maize stem borer is _____.							
	A	<i>Chilo infuscatellus</i>	B	<i>Ostrinia nubilalis</i>	C	<i>Chilo partellus</i>	D	None
29.	Sowing of castor on 15 th August reduces the incidence of _____.							
	A	Whitefly	B	Semilooper	C	<i>Spodoptera</i>	D	Capsule borer
30.	Dose of seed treatment of fipronil in wheat is _____ ml/100 kg seeds.							
	A	600	B	1000	C	400	D	200
31.	Pheromone traps are used for monitoring of _____.							
	A	Pod borer	B	Aphid	C	Thrips	D	Mites
32.	Leaf whorl application of granular insecticide is recommended against _____ in maize.							
	A	Cob borer	B	Shoot fly	C	Grass hopper	D	Stem borer
33.	Sucking insects can be effectively controlled by _____ insecticides.							
	A	Systemic	B	Contact	C	Stomach	D	Muscles
34.	Gall formation in tobacco is caused by _____.							
	A	Whitefly	B	Leaf eating caterpillar	C	Stem borer	D	Aphid
35.	Lady bird beetle is a predator of _____.							
	A	Borers	B	Grubs	C	Bugs	D	Aphid
36.	Gram cutworm pupates in _____.							
	A	Flower	B	Stem	C	Soil	D	Pod
37.	<i>Encarsia</i> sp. is an effective parasitoid of _____.							
	A	Whitefly	B	Aphid	C	Jassid	D	Thrips

38.	Larva of blister beetle is _____.			
	A Harmful	B Beneficial	C Both A & B	D None of these
39.	Pigeon pea sterility mosaic virus is transmitted by _____.			
	A Eriophyid mite	B Whitefly	C Spider mite	D Jassid
40.	Reflective ribbon is adopted for the management of _____.			
	A Mites	B Rodents	C Insect-pests	D Birds pests
41.	Cantharidine is emitted by adult of _____.			
	A Blister beetle	B Pulse beetle	C Flea beetle	D Hadda beetle
42.	Scientific name of serpentine leaf miner is _____.			
	A <i>Aproaerema modicella</i>	B <i>Liriomyza trifolii</i>	C <i>Bagrada cruciferarum</i>	D <i>Pempherulus affinis</i>
43.	Passing of rope over the crop helps to manage _____.			
	A Rice leaf folder	B Rice skipper	C Rice case worm	D Rice horn caterpillar
44.	<i>Trichogramma</i> is a _____ parasite.			
	A Larva	B Adult	C Pupae	D Egg
45.	"Leaf curl disease" of tobacco is transmitted by _____.			
	A Aphid	B Jassid	C White fly	D Thrips
46.	Termites are very active during _____.			
	A Day	B Night	C A & B	D None of these
47.	A female mealy bug is _____.			
	A Winged	B Wingless	C A & B	D None of these
48.	Which group of insect secretes honey dew?			
	A Lepidopteran	B Coleopteran	C Homopteran	D Plecopteran
49.	SPNV is effective against _____.			
	A <i>Spodoptera litura</i>	B <i>Helicoverpa armigera</i>	C <i>Sesamia inferens</i>	D <i>Scirpophaga novella</i>
50.	Tetranychid mites possess _____ pairs of legs.			
	A Four	B Two	C One	D Three
51.	Larva of _____ cuts the young plants at ground level in gram.			
	A Pod fly	B Spotted pod borer	C Cut worm	D Blue butterfly
52.	<i>Chilo partellus</i> is a pest of _____ crop.			
	A Pulses	B Groundnut	C Castor	D Sorghum
53.	Cotton thrips belong to order _____.			
	A Hemiptera	B Thysanoptera	C Diptera	D Lepidoptera
54.	Sphinx moth is a pest of _____ crop.			
	A Sesame	B Mustard	C Groundnut	D Castor
55.	Scientific name of rice moth is _____.			
	A <i>Sitotroga cerealella</i>	B <i>Plodia interpunctella</i>	C <i>Coreyra cephalonica</i>	D <i>Ephestia cautella</i>
56.	Birds belong to class _____.			
	A Aves	B Insecta	C Crustacean	D Acarina
57.	_____ possess protozoans in their digestive system.			
	A Aphids	B Termites	C White grubs	D Root borers
58.	Site of oviposition of fennel seed midge is _____.			
	A On leaves	B In grain	C In embryo	D In leaf tissue
59.	A pair of cornicle is present in _____.			
	A Aphid	B Whitefly	C Jassids	D Mealy bug

60.	_____ is an univoltine pest.							
	A	<i>H. armigera</i>	B	<i>Spodoptera litura</i>	C	GHCP	D	Aphid
61.	Application of _____ reduces the termite damage in field.							
	A	Irrigation	B	Nitrogenous fertilizer	C	Micronutrients	D	A & B
62.	_____ is larvicide.							
	A	Imidacloprid	B	Quinalphos	C	Acetamiprid	D	Thiamethoxam
63.	Growing of marigold around chickpea crop is effective to trap _____.							
	A	Leaf miner	B	<i>Helicoverpa armigera</i>	C	<i>Spodoptera litura</i>	D	White grub
64.	_____ is monophagous pest.							
	A	Pink bollworm	B	Pod borer	C	Aphids	D	None of these
65.	Cut leaf bit floating on water is characteristic symptom of _____ in paddy.							
	A	Case worm	B	Leaf folder	C	Stem borer	D	Gall midge
66.	_____ is most notorious pest of maize.							
	A	Stem borer	B	<i>Helicoverpa armigera</i>	C	Fall armyworm	D	Aphids
67.	Red cotton bug lays eggs in/on _____.							
	A	Bolls	B	Leaf	C	Soil	D	Flower
68.	What is scientific name of whitefly?							
	A	<i>Bemisia tabaci</i>	B	<i>Thrips tabaci</i>	C	<i>Aphis gossypii</i>	D	<i>Aphis craccivora</i>
69.	Higher seed rate of sorghum is recommended to compensate the damage of _____.							
	A	Seed midge	B	Stem borer	C	Shoot fly	D	None of them
70.	Crop rotation of paddy after wheat increases incidence of _____.							
	A	Termite	B	Aphid	C	Stem borer	D	None of the above
71.	Damaging stage of Lesser grain borer is _____.							
	A	Adults	B	Larvae	C	Pupa	D	Both A and B
72.	The grasshopper lays eggs in/on _____.							
	A	On leaves	B	Stems	C	In soil	D	None of these
73.	Grazing of sheep after harvesting of cotton is advisable for the management of _____.							
	A	Spotted bollworm	B	American bollworm	C	Pink bollworm	D	<i>Spodoptera litura</i>
74.	Late sowing of castor is recommended for reducing the infestation of _____.							
	A	<i>Achaea janata</i>	B	<i>D. punctiferalis</i>	C	<i>Trialeurodes rara</i>	D	<i>Spodoptera litura</i>
75.	Cowpea mosaic virus is transmitted by _____.							
	A	<i>Aphis craccivora</i>	B	<i>Aphis gossypii</i>	C	<i>Myzus persicae</i>	D	<i>Bemisia tabaci</i>
76.	Sex pheromone attracts _____.							
	A	Male	B	Female	C	A & B	D	None of these
77.	_____ is not microbial insecticides?							
	A	<i>B. bassiana</i>	B	<i>M. anisopliae</i>	C	Azadirachtin	D	<i>L. lecanii</i>
78.	Which one of the following pair is correct?							
	A	Indoxacarb-Aphid	B	Propargite- Mite	C	Acephate- Rats	D	Bifenthrin- <i>S. litura</i>
79.	Which one of the following insecticide is called as fumigant?							
	A	Dimethoate	B	Aluminium phosphide	C	Monocrotophos	D	Quinalphos
80.	The maximum pesticide used crop is _____.							
	A	Rice	B	Sorghum	C	Wheat	D	Groundnut

AGRICULTURAL UNIVERSITIES OF GUJARAT

1.	Anand Agricultural University, Anand	2.	Junagadh Agricultural University, Junagadh
3.	Navsari Agricultural University, Navsari	4.	S. D. Agricultural University, Sardarkrushinagar

Fifth Semester (Regular) Theory B. Sc. (Hons.) Agri. End Examinations December-2019

Ag. Ento. 5.4 : Pests of Crops and Stored Grains and their Management (3+1)

Date: 09/12/2019

Time: 09.30 to 11.30 hrs.

Day: Monday

Total Marks: 50.00

Q.1 A. Write IPM strategies for following pests(Any seven) (7.00)

- | | |
|-------------------------------|-----------------------------------|
| 1. Groundnut white grub | 2. Paddy stem borer |
| 3. Sugarcane borers | 4. <i>Phthorimaea operculella</i> |
| 5. Tomato fruit borer | 6. Cotton pink boll worm |
| 7. <i>Bactrocera dorsalis</i> | 8. Rodents |
| 9. Custard apple mealy bug | |

B. Match the following (5.00)

- | <u>Group-A</u> | <u>Group-B</u> |
|------------------------------------|-------------------------------------|
| 1. Metaldehyde | a. Whiteflies |
| 2. <i>Goniozus nephantidis</i> | b. Snail and Slug |
| 3. Termite | c. Apple |
| 4. Pin worm | d. Brinjal shoot and fruit borer |
| 5. Bunchy top of banana | e. Green leaf hopper |
| 6. Pigeon pea sterility mosaic | f. Cellulose |
| 7. Tungro virus disease | g. <i>Pentalonia nigronervosa</i> |
| 8. YVMV | h. Coconut black headed caterpillar |
| 9. <i>Trathala flavo orbitalis</i> | i. Tomato |
| 10. Woolly aphid | j. Eriophyid mite |

Q.2 A. Describe the nature of damage of following pests (Any seven) (7.00)

- | | |
|------------------------------------|----------------------------------|
| 1. Tobacco leaf eating caterpillar | 2. Pulse beetle |
| 3. Cabbage aphid | 4. Cucumber leaf miner |
| 5. Onion thrips | 6. Sweet potato weevil |
| 7. Chiku moth | 8. Guava bark eating caterpillar |
| 9. Citrus fruit sucking moth | 10. Banana rhizome weevil |

B. State whether the following statements are "True" or "False" (5.00)

- Phenacoccus solenopsis* is a pest of papaya.
- Capitulum borer is a pest of gerbera.
- Sesamum gall fly lays eggs in ovary.
- Methyl anthranilate is used to control crab.
- Caryedon serratus* attacks crop in field as well as store condition.
- Bromadiolone is a chronic poison.
- Termite infestation is high in the wheat crop grown in heavy black soil.
- Larva of blister beetle is beneficial.
- Scientific name of Indian meal moth is *Plodia interpunctella*.
- Carpomyia vesuviana* is a pest of guava.

(P.T.O.)

Q.3 A. Describe the life cycle of following pests (Any six) (6.00)

1. Gram pod borer
2. Fall army worm
3. *Spodoptera litura* in castor
4. Anar butterfly
5. Cotton whitefly
6. Gujarat hairy caterpillar
7. Coconut rhinoceros beetle

B. Fill in the blanks (5.00)

1. *Amaranthus* weevil lays eggs in _____.
2. _____ is a lepidopteran ecto-parasitoid of sugarcane pyrilla.
3. Trade name of chlorantraniliprole 18.5 SC is _____.
4. Funnel seed midge belongs to order _____.
5. Abdomen of the adult of _____ remains upward at the time of resting.
6. Pair of cornicle is found in _____.
7. Adult is red colour having four pair of legs and found in webs _____.
8. Moth of _____ has wedge shaped green belt in the middle of the forewing.
9. Adult of _____ has fringed wings and rasping sucking type of mouth parts.
10. Adult of _____ is wedge shaped, black spot on each forewing and moves diagonally.

C. Write non-chemical management measures for the following pests (2.00)

1. Stored grain pests
2. *Achaea janata*
3. Fruit sucking moth
4. *Leucinodes orbonalis*

Q.4 Do as directed (Any thirteen) (13.00)

1. Differentiate between locust and grass hopper.
2. Give the peculiar habit of mustard sawfly.
3. Differentiate the damage caused by mites and thrips in chilli.
4. Differentiate the primary and secondary pest of stored grains.
5. Give two latest examples of acaricide.
6. Give two examples of microbial insecticide.
7. Give the name of monophagous pest of mango and brinjal.
8. Enlist newer hosts of fruit sucking moth.
9. Describe the method of preparation of black tulsii trap.
10. De-trashing of lower leaves in sugarcane is advisable.
11. Enlist the indigenous / conventional storage structures.
12. What do you mean by neophobia and neophilia ?
13. Name of widely used fumigant with dose for stored grains pest management.
14. Enlist the insect pests of aonla and drum stick.
15. Give the name of one text book along with author(s) related to this course.

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AGRICULTURAL UNIVERSITIES OF GUJARAT

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2. Junagadh Agricultural University, Junagadh 4. S. D. Agricultural University, Sardarkrushinagar

Fifth Semester End Examination of B. Sc. (Hons.) Agriculture (Old-Regular) Dec. - 2019

Course No.: Agron. 5.7 **Title of Course:** Water Management including Micro irrigation (2 + 1)

Date : 10-12-2019

Time : 9.30 to 12.00 hrs.

Day : Tuesday

Marks : 40.00

PART – B : SUBJECTIVE

Q. 1 (A) Define / Explain the following terms (Any Five) (5.0)

- | | |
|---------------------|--------------------------|
| 1. Drainage | 2. Percolation |
| 3. Water management | 4. Saturated flow |
| 5. Field capacity | 6. Soil moisture tension |

(B) Describe different forces responsible for retention of water in the soil. (5.0)

Q. 2 (A) Write short note on the followings (Any Two) (4.0)

1. Subsurface drainage
2. Biological classification of soil water
3. IW: CPE ratio

(B) Answer as directed (Any Six) (6.0)

1. Write major factors affecting the infiltration rate of water into the soil.
2. Enlist factors affecting evapotranspiration.
3. Enlist the advantages of irrigation.
4. State the ecological importance of water.
5. Discuss the salinity hazard.
6. State various units of expressing the energy of soil water.
7. Enlist causes of water logging.

Q. 3 (A) Differentiate the followings (Any Three) (6.0)

- | | |
|---------------------------------|--------------------------------|
| 1. Gravitational water | Vs Capillary water |
| 2. Water application efficiency | Vs Water conveyance efficiency |
| 3. Matric potential | Vs Osmotic potential |
| 4. Duty | Vs Delta |

(P. T. O.)

(B) Write the answer of the followings

1. Give critical growth stages of groundnut and wheat to water requirement. (4.0)
2. Write formula of a. Consumptive use of water and b. Water distribution efficiency.
3. Calculate the value of CPE for scheduling of irrigation at 0.6 and 0.8 IW/CPE ratio with 75 mm depth of irrigation water.
4. Work out crop water use efficiency (CWUE) and field water use efficiency (FWUE) of rice using the following data

Grain yield (kg/ha)	Evapotranspiration (mm)	Water requirement (mm)
6200	500	1200

Q. 4 (A) Justify the followings by giving scientific reason/s (Any Five) (5.0)

1. Rainfall less than 2.5 mm is not considered as effective rainfall.
2. Entire range of capillary water is available to plants.
3. Gravitational potential is always positive.
4. Clayey soils have wide range of available water.
5. Drip method of irrigation is successfully used for application of saline water in irrigation.
6. Sandy soil have rapid infiltration rate.

(B) Describe various points to be considered for the management of poor quality water in crop production. (5.0)

* * * * *