WACHEMO UNIVERISTY DURAME CAMPUS

COLLEGE OF AGRICULTURAL SCIENCE DEPARTEMENT OF PLANT SIENCE

MODEL EXAM FOR EXIT EXAM TO 4TH YEAR PLANT SCIENCE STUDENTS

OUT OF **100%**

TIME ALLOWED 1:50 MINUTE, DATE, 27/07/15 E.C

PREPARED BY PLANT SCIENCE STAFF

ITRODUCTION

The Ministry of Education of Ethiopia has announced the implementation of exit exam for all undergraduate program students (public and private), beginning with the 2022/2023 academic year, in order to improve the quality of graduates produced by higher learning institutions. The exit exam aimed at checking whether students have acquired the required knowledge, skills and attitudes or not. To implement this, it requires determining competency areas for a specific program, which is already completed. Based on this understanding, Plant science department of Wachemo University Durame Campus draw a model exit exam for graduate class students assuming to prepare the students for the national exit exam. The aim of this model exit exam is to assess the student`s educational achievement in the area of core competency in Animal Science. Therefore, the first-round model exit exam consists of 100 questions on 14 core courses.

NAME: _____ **ID NO:** _____ **SIGNATURE:** _____

GENERAL INSTRUCTIONS

- *Switch of Your Mobile Phone!*
- *Please Check The Exam Has 10 Pages Including Cover Page.*
- *Read All Instructions Carefully!*
- *The Exam Has Only One Part (Multiple Choose).*
- *All Answers Should Be Written In The Space Provided Only!*
- *Attempt All The Questions!*
- *Any Violation Of Examination Rules Will Leads To Disciplinary Measurements!*

DURAME, ETHIOPIA

APRIL. 2015 EC

Wachemo University Durame Campus Plant Science Department

ተቋማዊ ትምህርታዊ ማስጠበቅና ማረጋገጥ አስተባባሪ
Institutional Quality Enhal Assurance Coordinator

Scanned by CamScanner

DIRECTION: - THIS PAPER CONTAINS MODEL EXAMINATION OF IDENTIFIED COMPETENCY FOCUS AREAS AND SELECTED COURSES FOR PLANT SCIENCE. THE EXAMINATION CONTAINS 100 ITEMS AND THERE IS ONLY ONE BEST ANSWER FOR EACH ITEM. CHOOSE THE BEST ANSWER FROM THE SUGGESTED OPTIONS AND WRITE THE LETTER OF YOUR CHOICE ON THE ANSWER SHEET.

TIME ALLOWED; 1:50 MINUTES

1. Plant Hormone is a naturally-occurring compound which regulates change in physiology, growth or development of the plant. Among the following which one is responsible to control dwarfness of the plant?
A. IAA
B. MH
C. GA
D. IBA

2. Plant cell type which are alive at maturity and have only a primary wall; provide mechanical support during growth?
A. Sclerenchyma cells
B. Parenchyma cells
C. Collenchyma cells
D. All.

3. A solution is a homogeneous mixture of two or more components in which the particle size is smaller than 1 nm. In which type of solutions the cell shrinks when it is placed in this solution?
A. Hypertonic solutions
B. Hypotonic solution
C. Isotonic solutions
D. Saturated solutions

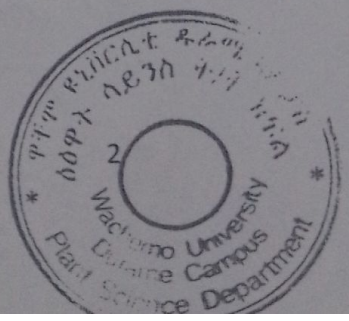
4. The minerals absorbed by the roots are mineral ions dissolved in the soil and water. They support plants to complete their life cycle and are to produce seeds. Which of the following is present in the green pigment of the leaf?
A. Mg
B. P
C. Fe
D. Ca

5. The rate at which water moves through the plants due to transpiration plays an important role in maintaining plant water balance. Which of the following is the instrument for measuring the rate of transpiration in plants?
A. Porometer
B. Hygrometer
C. Potometer
D. Psychrometer

6. Food preservation can be defined as the process of treating and handling food in such a way as to stop or greatly slow down spoilage and prevent foodborne illness while maintaining nutritional value, texture and flavor. Why is low temperature maintained for preservation?
A. For easy digestion
B. For easy cooking
C. Bacterial attacks will be minimized
D. All of these

7. What is an example of positive geotropism in plants?
A. Lateral growth of root
B. Upward growth of stem
C. Downward growth of root
D. Closing of flower.

8. As you will be a plant Agronomist in commercial crop farms and the area is characterized by erratic rainfall you need to plan to get high production within drought situation, what is your plan to achieve the above goal?
A. Selecting early maturing plant cultivars.
B. Maintaining water balance by irrigation supplements
C. Selecting drought tolerant plant cultivars.
D. All of the above.



Institutional Quality Enhal Assurance Coordinator

Scanned by CamScanner

9. Simultaneous fusion of the generative nuclei one with egg cell and other with the endospermic nuclei is termed?
A. Sterility C. Cloning
B. Double fertilization D. Single fertilization
10. The Rudimentary root of the seed or seedling that forms the primary root of the young plant is called as?
A. Rachis C. Plumule
B. Radicle D. Rachis
11. Seed is botanically called as?
A. Ripened ovule C. Ripened ovary
B. Ripened ovule and ovary D. Ripened endosperm
12. The process of Seed drying is very important to maintain its?
A. Viability and vigour C. Oil content
B. Protein content D. Chemical composition
13. A sound seed certification programme requires?
A. Direct participation of breeder C. Seed law
B. Use of sophisticated equipment D. Support of farmer
14. Free from inert matter and defective seeds are termed as?
A. Natural purity C. Physical purity
B. Genetic purity D. None of these
15. Possible reasons for seed dormancy is/are?
A. Presence of pathogens C. Immature embryo
B. Cracking of hulls D. All of the above.
16. As you will be a Seed science expert in commercial fruit farms and you need to prepare seedlings form dormant seeds to your production site, what you will do?
A. Scarification. C. Light treatment
B. Stratifications D. All.
17. Primitive cultivars cultivated by farmers over generation and generation is known as?
A. Modern cultivar C. Land races
B. Obselete cultivar D. Mutants
18. Single, Self-pollinated, homozygous plant is called as?
A. Multiline C. Isogenic line
B. Pure line. D. Inbred
19. Within an agricultural context drought is a prolonged period of deficit precipitation which results in negative impact on crop growth or yield. Among the following which one is the type of chemical which is accumulated when plants are under drought conditions?
A. Proline C. Gibberellin
B. Auxin D. Cytokinin
20. Genetic Variation in clones may arise due to?
A. Segregation and recombination C. Somatic mutation
B. Mechanical mixture D. All of the above
21. Breeding for disease resistance requires
A. a good source of resistance C. Diseases test
B. Planned hybridisation D. All of these

Wachemo University Durame Campus Plant Science Department

Institutional Quality Enhal Assurance Coordinator

Scanned by CamScanner

22. During hybridization how we can remove stamens from the flower bud?
A. By crossing
B. By Selfing
C. By emasculation
D. By caping

23. Which of the following **is not** used for crop improvement?
A. Inbreeding
B. Introduction
C. Hybridization
D. Mutations.

24. If water table is comparatively high, the irrigation canal becomes useless, due to?
A. Large amount of seepage
B. Water logging of the cultivated areas
C. Uncertain water demand
D. All the above

25. The main cause of silting up a channel is?
A. Non-regime section
B. Inadequate slope
C. Defective head regulator
D. All the above

26. Pick up the **correct** statement from the following?
A. Gravity water is harmful to crops
B. Hygroscopic water remains attached to soil molecules by chemical bond
C. Capillary moisture held in the soil pores against gravity by surface tension, is utilized by plants
D. All the above

27. Pick up the **incorrect** statement from the following?
A. In free flooding irrigation, water is admitted at one corner of a field and is allowed to spread over the entire area
B. In check method of irrigation, the field is divided into smaller compartments and water is admitted to each in turn
C. In furrow irrigation water is admitted between the rows of plants in the field
D. None of these.

28. A fall in a canal bed is generally provided, if
A. Ground slope exceeds the designed bed slope.
B. Designed bed slope exceeds the ground slope.
C. Ground slope is practically the same as the designed bed slope.
D. None of these

29. Effective precipitation for a crop may be defined as?
A. Total precipitation minus the loss due to evaporation.
B. Total precipitation minus the loss due to infiltration.
C. Total precipitation during the crop period.
D. Available water stored in soil within root zone of the crop.

30. Which one of the following statements is **correct**?
A. The canal system and the drainage system are complementary.
B. The canal system runs on ridges, gets divided into smaller channels and spreads its water on the land.
C. The drainage system runs aiong the lowest line, collects drainage water from the slopes and joins the main stream.
D. All the above.

31. Which one of the following is the chemical which is used for killing unwanted weeds?
A. Herbicides
B. Genocides
C. Fungicides
D. Parricides

Machamo University Durame Campus Plant Science Department

Institutional Quality Enhal Assurance Coordinator

Scanned by CamScanner

32. Of the following, which one is **false** about weeds?
A. Weeds are pests and guest plants
B. Plants growing where undesirable
C. Parasitic weeds are independent on the soils to grow
D. All weeds have no beneficial effect for other

33. Biology of weeds which deals about?
A. The lifestyle of the weeds
B. The lifecycle of the weeds
C. The interaction between weeds and their environment
D. The classification of weeds based on their origin

34. Which of the following is the method of classifying weeds morphologically?
A. Based on their lifecycle
B. Based on their reproduction methods
C. Based on umber of cotyledons or embryonic leaves
D. Based on their photosynthetic efficiency

35. Of the following, which one is **not** encourage the establishment and survival of weeds?
A. Climatic factors
B. Edaphic factors
C. Good agronomic practices
D. Poor agronomic practices

36. Inhibition of a plant's growth due to the release of bio-chemicals in the environment is?
A. Allelopathy
B. Competition
C. Bio herbicides
D. Herbicides mode of action

37. The minimum period of time during which the crop must be free of weeds in order to prevent loss in yield is?
A. Critical period of weed-crop competition
B. Ratio of weed-crop competition
C. Critical period of crops placement
D. Economical threshold levels.

38. Which one is **not** true about modern tillage?
A. Minimum tillage
B. Many tillage
C. Zero tillage
D. Conservation tillage.

39. Crops grown and plowed under while still green in order to improve soil fertility is?
A. Green manure
B. Catch crops.
C. Relay crops
D. Hay crops.

40. Ability of seeds to germinate under optimal conditions is?
A. Vigor
B. Seed Quality
C. Viability
D. Varietal Purity.

41. All of the following crops are two seasonal, **except one?**
A. Cotton
B. Ginger
C. Wheat
D. Tumeric.

42. Of the following statements, which one is **not** true about pulse crops?
A. They do have dicotyledonous
B. Their seeds are rich in protein
C. They can fix atmospheric nitrogen
D. They are hypogeal during germination

43. An irreversible increase in size, volume or mass of a cell or organ or whole organisms?
A. Reproduction
B. Development
C. Growth
D. Production

44. Of the following, which one is **not** major cereal crop of Ethiopia?
A. Wheat
B. Barley
C. Maize
D. Soybean

45. Which experimental design involves main plots and sub-plots in its layout?
A. Split plot design
B. Lattice experimental design
C. Incomplete balanced design
D. Factorial experimental design

5
Wachemo University
Plant Science Department
Institutional Quality Enhal/
Assurance Coordinator

Scanned by CamScanner

46. One of the following is **not** source of variation of RCBD?
   A. Block C. Treatment
   B. Column D. Experimental Error
47. Which of the following experimental design is most widely used in field?
   A. Latin square design C. Completely randomized design
   B. Incomplete block design D. Randomized complete block design

Answer the following questions based on given ANOVA table below.

Source of variation	SS	DF	MS	F-test at 5%	
				Calculated	Critical value
Block	15	B	F		
Treatment	10	C	G	I	3.86
Error	A	D	H		
Total	30.45	E			

If a study conducted in 4 treatments with 4 replications in the RCBD experimental design.

48. What is the value of an "A"?
   A. 3.45 C. 4.45
   B. 5.45 D.6.45
49. Calculated value of 'D' is?
   A. 3 C. 6
   B. 7 D. 9
50. Which one is the calculated value of F?
   A. 5.83 C. 5.55
   B. 3.33 D.11.11
51. What the least significant difference (LSD) of the study?
   A. 1.24 C. 3.86
   B. 2.40 D. 0.60
52. Of the following which one is true?

A. High temperature increase the rate of water loss in vegetable crops

B. Vegetable products must be stored at high RH (> 90%) except: root and tuber crops (RH= 50 – 60%)

C. The temperature at which maximum storage is attained varies from product to product

D. all E. none.

53. A science dealing with cultivation, harvesting, post-harvest handling, processing and marketing of vegetable crops?
   A. Olericulture C. Floriculture
   B. Pomology D. A and B
54. Which vegetables are growing under the ground?
   A. cabbage, lettuce, spinach B. Potatoes, carrots, beets
   C. Green beans, peas, and Okra D. all
55. Of the following which one is the importance of vegetables storage?
   A. To ensure regular supply of seasonal produce all year round
   B. Provision for large scale processing
   C. Preservation of nutritional quality and weapon for national stability D. all.

Wachemo University Durame Campus Plant Science Department

Institutional Quality Enhancement Assurance Coordinator

Scanned by CamScanner

56. As you will be a plant science production expert in commercial vegetable farms and you need to prepare seedlings for your production site, what is your consideration for vegetable nursery site selection?

A. Land gradient
B. Proximity to planting site
C. Proximity to services
D. Nursery soil and water supply

57. Which of the following is correctly matched?

A. Sweet potato ⟶ *Convolvulaceae*
B. Tomato ⟶ *Lycopersicon esculentum*
C. Onion ⟶ *Allium cepa*
D. Cabbage ⟶ *Brassica oleracea*
E. all

58. Which of the following is the opportunities for vegetables production in Ethiopia?

A. The presence of favorable agro-ecological conditions for successful growing of various fruit crops.
B. Proximity of the country to fertile markets of Europe and Middle East Asia
C. Potential water resources
D. all.

59. Which method of classification is very helpful for botanist and breeder who are interested to study morphology, cross ability and taxonomic character?

A. Botanical classification
B. Classification based on climatic requirement
C. Classification based on flowering habit
D. Classification based on nature and structure of ovary wall
E. All

60. Banana is commercially propagated by?

A. Sword sucker
B. Water sucker
C. Rhizome
D. Peepers

61. Among the following which one is a post-harvest practice accomplished by flooding spraying or immersing the produce by water?

A. hydro cooling
B. Sorting
C. grading
D. all.

62. Which is not applicable to vegetatively propagated fruits?

A. To get true to type plants
B. To protect an elite quality
C. To conserve a plant
D. To get a new type of plant

63. Of the following which one is pre-condition required for establishment of orchards?

A. Site selection
B. Land preparation
C. Laying out the planting field
D. Digging holes for planting
E. all

64. Which of the following is correctly matched?

A. Tropical fruits ⟶ Banana, Pineapple, Guava, Cashew, Papaya
B. Temperate fruits ⟶ Plum, Apple, Grape
C. Sub-tropical fruits ⟶ Avocado, Citrus, Passion fruit and peach
D. all. E. A and B

65. As you will be a plant science production manager in large scale fruit farm and you need to expand the area of production site, what is your consideration for that purpose?

A. Temperature
B. Soil
C. Topography
D. Climate and water availability
E. all

Wachemo University Durame Campus Plant Science Department

Institutional Quality Enhancement Assurance Coordinator

Scanned by CamScanner

66. Which one is an approach for searching new facts through organized scientific investigation?
A. Hypothesis B. Research
C. Plant Science D. Plant pathology

67. Which one the following is a purpose of a research?
A. to provide solution for complex problems. D. To attain the Goal
B. To test a hypothesis. E. to share the cost
C. all F. none

68. Which one of the following terms well define qualitative data?
A. numerical/ measurable data
B. none measurable data
C. anthropological and sociological research data
D. All except A E. none

69. Choose the correct steps for scientific research?
A. problem identification- analysis- data collection- reviewing information
B. drawing conclusion – analysis – data collection – problem identification
C. problem identification –reviewing information – data collection – analysis – drawing conclusion
D. A and C E. none

70. The written document for the requesting both authorization and funds to undertake a specific project in a laboratory, library or field is called?
A. agreement format C. proposal
B. memorandum of Agreement D. official letter E. none

71. One of the following is not an outline of research proposal?
A. title C. literature review
B. introduction D. result and discussion E. All

72. Which of the following is an assumption or guesses about the relationship between two research variable?
A. literature review C. work plan
B. hypothesis D. objectives E. all

73. Which one of the following is an abiotic factor for the development of a plant disease?
A. parasitic microorganism C. disease and pests
B. nematodes D. damage from weather

74. Which of the following is a symptom of diseased plant?
A. nder development C. necrosis/ death
B. over development D. Wilting
E. alteration of normal appearance F. All ~~E. none~~

75. One of the following is the scanting pattern of disease assessment in the field?
A. transect C. diamond
B. zig Zag D. all
E. none

76. Among the following which one is an organism that man regards as a harmful to his personal properties or environment?
A. animal B. universe
C. pest D. human beings

Wachemo University Durame Campus Plant Science Department

Institutional Quality Enhal/ Assurance Coordinator

Scanned by CamScanner

77. Of the following one is defined as the physical harm or distraction to a valued commodity caused by the presence of activity of a pest?

A. Threshold C. Tolerance
B. Injury D. Damage

78. Which of the following are the major pillars of disease triangle?

A. Resistant Host- a virulent pathogen – none conducing environment
B. Susceptible Host – virulent pathogen – conducive environment
C. Disease – bacteria- fungi
D. Biotic factor- Abiotic factors- Environment

79. The use of living organism that are predators to control pest is called?

A. cultural pest control C. mechanical pest control
B. Biological pest control D. Chemical pest control

80. Which one is not an example of a relative method to assess economic threshold levels for an insect pest is?

A. Number of insects per leaf C. Number of insects per twig
B. Number of insects per plant D. All of the above

81. The honey bee waggle dance conveys information about the location of nectar sources to other worker bees in the hive. Which of the following senses do worker bees use to interpret the dance?

A. Sight. C. Taste.
B. Smell. D. Touch.

82. An example of a biological control against insects is?

A. Herbicides C. Pesticides
B. Wildlife refuges D. Sex hormones

83. Which insect orders contain species that are important pests of domestic animals?

A. Siphonaptera and Coleoptera C. Diptera and Phthiraptera
B. Orthoptera and Hemiptera D. All of these

84. Which control strategy is likely to have the greatest impact on non-target organisms?

A. Chemical control C. Biological control
B. Cultural control D. Physical/mechanical control

85. Which orders are most important in the transmission of human disease?

A. Phasmatodea and Odonata C. Diptera and Phthiraptera
B. Hymenoptera and Siphonaptera D. Hemiptera and Thysanoptera

86. Chitin is most abundant in which part of the exoskeleton?

A. Epicuticle C. Procuticle
B. Cuticulin layer D. Epidermis

87. Plant biotechnology involves?

A. Production of valuable products in plants C. Production of virus free plants
B. rapid clonal multiplication of desired genotypes D. All of the above

88. The most common solidifying agent used in micro propagation is?

A. agar C. mannan
B. dextran D. all of these

89. The culturing of cells in liquid agitated medium is called?

A. liquid culture C. Agar culture
B. micro propagation D. Suspension culture

Wachemo University Durame Campus Plant Science Department

Institutional Quality Enhancement Assurance Coordinator

Scanned by CamScanner

90. Which of the following is best suited method for production of virus free plants?
A. embryo culture
B. Meristem culture
C. ovule culture
D. anther culture

91. Gene silencing is generally termed as?
A. switching off.
B. switching on.
C. absence.
D. presence.

92. The production of adventitious roots and shoots from cells of tissue culture is termed?
A. organogenesis
B. micro propagation
C. callus culture
D. Suspension culture

93. Protoplast fusion and somatic hybridization in plant are based on which the following?
A. Protoplast isolation.
B. Cell wall regeneration.
C. Fusion of nuclei.
D. All the above.

94. Which one is **not true about** the specific objectives of the Soil Fertility and Plant Nutrition?
A. To describe how plants take up or absorb nutrients
B. Identify and describe plant nutrients deficiency symptoms
C. Describe how soil organic matter, C.E.C, PH, affect nutrient availability
D. Evaluate nutrient and soil amendment, E. all F. none

95. Which one of the following is not **Macronutrients**?
A. N & K
B. Ca & Mg
C. P & S
D. Mn & Zn E. All F. None.

96. Among the following one is the capacity to produce a certain yield of crops or other plants with optimum management?
A. Soil fertility
B. soil productivity
C. soil system
D. soil colloids E. all F. None

97. Which one is **not true** about theory of Liebig (1803-1873)?
A. for the first time he gave a theory about soil fertility and plant nutrition.
B. Carbon for plants from CO_2 of atmosphere.
C. Hydrogen and oxygen for plant comes from water.
D. Phosphorus is necessary for seed formation.
E. Crops require both P and K. F. None.

98. Which one is the **most concentrated form of phosphate**, which is required by plants?
A. P2O5
B. ((NH4)2HPO4)
C. (Ca(H2PO4)2)
D. P2O3 E. all F. none

99. The term Actinomycetes refers?
A. conversion of organic Phosphorus compounds to inorganic.
B. conversion of inorganic Phosphorus to organic Phosphorus
C. break down of P into soil over a long period of time
D. group of bacteria with a superficial resemblance to fungi
E. dissolve of Solid P minerals in the soil in to the soil solution
F. none.

100. Which of the following is the dissolved forms of plant-available P in the soil solution?
A. Orthophosphates
B. Phosphorus
C. Solution
D. Weathering
E. Dissolution
F. none

10

Wolaita Sodo University Campus Plant Science Department

The end!

Institutional Quality Enhal Assurance Coordinator

Scanned by CamScanner