

COLLEGE OF AGRICULTURE, FISHERIES & FORESTRY
SCHOOL OF AGRICULTURAL SCIENCES
DEPARTMENT OF CROP PRODUCTION

Certificate III in Commercial Agriculture – Year I

AGM-301 Climate & Agricultural Meteorology

Trimester III Final Examination - 2016

Total Marks: 100

Time Allowed: Three Hours

[An extra ten minutes is allowed for reading this paper]

Instructions

- This paper consists of 6 pages.
- Answer **ALL** questions in the answer booklet.
- Number your answers correctly.
- Please check to see that your paper is complete
- Write your students number on all the pages that you use including any additional sheet of papers.
- Printed or written material is not allowed into the examination hall.
- Mark values appear at the end of each question or part thereof.
- Non – programmable calculators are permitted

“MOBILE PHONES ARE STRICTLY NOT ALLOWED”

Section	Guidelines	Total Marks	Suggested Time
A	Part 1: Multiple Choice Questions	10	30 minutes
	Part 2: Fill in the blanks	10	
Part 3: True and False	10		
Part 4: Matching	10		
		40 Marks	
B	Short answers Answer all the questions. Each question is worth 1 mark. There are ten questions.	10 Marks	60 minutes
C	Long answers There ten questions (5) questions in this section. Answer all the questions	50 Marks	90 minutes

SECTION-A

(40 Marks)

Note: Attempt all the questions.

Q.No.1 Tick the correct answer from the following multiple choice.

(10 Marks)

(i) What is meteorology?

- a. Meteorology is a study of lower atmosphere.
- b. Science of atmosphere and its phenomena
- c. Deals with the physics, chemistry and dynamics of atmosphere
- d. All the above

(ii) Which of the following is not included in the scope of agricultural meteorology?

- a. Safe aviation
- b. To prepare crop weather diagrams
- c. To prepare crop weather calender
- d. To develop crop/animal growth simulation models

(iii) Out of the total solar radiation about 47% is absorbed at the earth surface.

- a. Short wave
- b. Long wave
- c. Green house effect
- d. Solar constant

(iv) The troposphere is _____.

- a. 50 km away from earth
- b. 40 km away from earth
- c. 30 km away from earth
- d. None of the above

(v) Which one of the following is not a factor of solar radiation?

- a. Distance from the sun.
- b. Duration of daily sunlight period
- c. Solar elevation or inclinations of the solar rays to the horizon.
- d. None of the above

(vi) _____ represents the average temperature condition of the atmosphere during 24 hours of day.

- a. Maximum temperature
- b. Minimum temperature
- c. Average temperature
- d. Medium temperature

(vii) Which is the best way to control soil temperature?

- a. Mulching
- b. Hydroponics
- c. Nematode
- d. None of these

(viii) It is based on synoptic situation prevailing at the time of forecasting and is valid up to 3 days on 72 hours and is issued twice a day.

- a. Tele casting
- b. Short range forecasting
- c. Long range forecasting
- d. Now casting

(ix) Short range weather forecasting ranges from

- a. 24 hours to 3 days
- b. 3 days to ten days
- c. More than 10 days
- d. None of the above

(x) Weather forecasting is important to agriculture because it indicates

- a. when to irrigate
- b. when to sow
- c. when to harvest
- d. all of the above

Q.No.2 Complete the following with appropriate answer.

(10 Marks)

(i) is the science which studies average condition of weather or the state behavior of the atmosphere over a place or region for a long period of time.

(ii) Agricultural meteorology is used to modify micro climate for increasing agricultural

(iii) Radiation with wave length range μ is known as short wave radiation.

(iv) The third layer of the atmosphere is known as

(v) The term is usually defined as the fraction or percent of the reflected solar radiation from the surface

(vi) Today's weather equals tomorrow's weather is..... type of forecasting.

(vii) the forecast that is valid for more than 10 days.

(viii) is known to be the highest cloud.

(ix) is the examining of today's weather and comparing to a day with similar weather condition.

(x) is the study of organisms and their environment.

Q.No.3. Mark true /false against each of the following statement. (10 Marks)

- (i) Ecology is the science which studies average condition of weather or the state behavior of the atmosphere over a place or region for a long period of time. (True/False)
- (ii) Meteorology has therefore, greatest scope on every human enterprise in the modern Life. (True/False)
- (iii) Planks Law is not included in the Laws of radiation. (True/False)
- (iv) The stratosphere absorbs the radiation from the sun. (True/False)
- (v) Solar radiation provides the energy for the physical processes taking place in plants, soil and atmosphere. (True/False)
- (vi) Heat will not flow under isothermal condition. (True/False)
- (vii) Evaporation is also a major factor of soil temperature. (True/False)
- (viii) Drought is not a serious problem in agriculture. (True/False)
- (ix) Clouds are made up of tinny water droplets and not ice particles. (True/False)
- (x) Server drought is when rainfall is 50% less then normal. (True/False)

Q.No.4. Match the following. (10 Marks)

- | | |
|--------------------------|---------------------------------|
| 1. Safe navigation | A. Energy received from the sun |
| 2. Impact of meteorology | B. Atmosphere |
| 3. Long wave | C. Scope of meteorology |
| 4. Mesosphere | D. $0.76 - 100\mu$ |
| 5. Solar insulation | E. All living things |
| 6. Culumus | F. Layered clouds |
| 7. Stratus | G. Fluffy clouds |
| 8. Cirrus | H. Feathery clouds |
| 9. Medium forecast | I. 72 hours |
| 10. Now casting | J. 3-10 days |

SECTION - B

Short Answer Type Questions

10 marks

- Q.No.1 List two significance of radiation in agriculture. (1 Marks)
- Q.No.2 Give 2 importance of agricultural meteorology. (1 Marks)
- Q.No.3 Why is solar radiation useful? (1 marks)
- Q.No.4 Explain seasonal drought. (1 Marks)
- Q.No.5 How does weather forecasting help farmers? (1 Marks)
- Q.No.6 Explain how an anemometer works. (1 Marks)
- Q.No.7 How does climate change affect the pests and diseases? (1 Marks)
- Q.No.8 How does a Stevenson screen work? (1 Marks)
- Q.No.9 List down 2 factors that affect solar radiation. (1 Marks)
- Q.No.10 Differentiate between cumulus clouds and stratus clouds. (1 Marks)

SECTION - C

Long Answer Type Questions.

50 marks

- Q.No.1. List down and explain any 2 disadvantages of meteorology (5)
- Q.No.2. Define the following terms. (5)
- Albedo
 - Short wave radiation
 - Long wave radiation
 - Greenhouse effect
- Q.No.3. Explain why/how solar radiation is useful in (5)
- Seed germination
 - Flowering and fruiting
 - Controlling of pests and diseases
 - Leaf expansion
 - Growth of stems and shoots
- Q.No.4. Explain the various temperature variations. (5)
- Q.No.5 List down and explain 5 factors that affect atmospheric temperature. (5)
- Q.No.6. Define/Discuss the following. (5)
- (a) Precipitation
 - (b) Transpiration
 - (c) Condensation
 - (d) Evaporation
 - (e) Evapotranspiration
- Q.No.7. List down and explain the different temperature variations. (5)
- Q.No.8. Identify 5 meteorological equipment's with their uses. (5)
- Q.No.9. Briefly describe the stages of the atmosphere. (5)
- Q.No.10. Define drought and explain hydrological, meteorological and agricultural drought. (5)

THE END