KATHMANDU UNIVERSITY
End Semester Examination
June/July, 2023

Marks Scored:

Level : B.Sc.
Year : II

Course : AGRS 206
Semester: I

Exam. Roll No. :

Time: 30 mins.

F.M. : 20

Registration No.:

Date : July-20

SECTION "A"

I. Encircle the most appropriate alternative from each set of choices. [10Q. × 1 = 10 marks]

1. What happens when a short day legume like Soybean is grown in an increased day length?
   a. Less nodes and smaller plants
   b. Early flower and less nodes
   c. Delay flower and more nodes
   d. Smaller plants and early flower

2. What anti-nutritional factor makes rapeseed and mustard oil to increase the risk of mycocardial fibrosis and hypocholesterolemia?
   a. Linolenic acid
   b. Erucic acid
   c. Stearic acid
   d. Eicosenoic acids

3. Pigeon pea is sensitive to low radiation at pod development. Therefore, the most appropriate time of sowing Pigeon pea is.....
   a. March
   b. August
   c. January
   d. June

4. According to the cultivated area, which is the most important grain legume crop in Nepal?
   a. Lentil
   b. Cowpea
   c. Blackgram
   d. Kidney bean

5. When does peg development process start in ground nut?
   a. Before fertilization
   b. After flowering
   c. After fertilization
   d. Before pollination

6. Which among the following is a root parasite of Sunflower?
   a. *Cyperus rotundus*
   b. *Melilotus indica*
   c. *Fumaria parviflora*
   d. *Orobanche cumara*

7. Pusa Baisakhi and Pratigya are high yielding varieties of mungbean released in Nepal. NARC is also working on some promising lines in Grass pea namely CLIMA pink, 19 B and Bari 2 developed for .....
   a. Stemphylium blight resistance
   b. Low β-ODAP (<0.04%) content
   c. Bio-fortification with Zinc
   d. Wilt resistance

8. The Nitrogen fixation activity of bacteria is adversely affected in a condition when .....
   a. Soil available nitrogen is < 11 Kg N/ha
   b. N availability from soil and fertilizer is < 40 Kg N/ha
   c. Low N availability from external fertilizer
   d. N availability from soil and fertilizer is above 55 Kg N/ha

9. What type of plant is Soybean if its phenotypic node production on the main stem does not cease at flowering?
   a. Indeterminate growth habit
   b. Short duration crop
   c. Determinate growth habit
   d. Long duration crop

10. Which one of the following types of sesame seeds are extensively used for oil extraction?
   a. White seeds
   b. Red seeds
   c. Brown seeds
   d. Black seeds

II. Fill in the blanks. **[10Q. × 1 = 10 marks]**

11. Cereals lack ....., an essential amino acid which can be supplemented by including legumes in our daily diet.

12. Aflatoxins are poisonous substances produced by certain .....that deteriorates the pod and kernel quality of ground nut.

13. Castor is a monoecious plant in which male and female flowers are located in same plant. In contrast to the female flower, the male flower is located at the.....of the peduncle.

14. One of the advantages of legume is that they decompose plant residues, and stabilize ..... ratio of soil.

15. Among various other constraints, micro-nutrient deficiency in soil such as .....has been declining the yield of oilseed crops in Nepal.

16. Niger cultivated in Nepal, belongs to the family Compositae and its scientific name is.....

17. 2,4-D is one of the .....emergence herbicides that can manage weed efficiently.

18. There are differences between green gram and black gram. The pods are .....in green gram while in black gram the opposite is true.

19. Legumes require phosphorus for root development and .....for methionine, cysteine and cysteine.

20. In Nepal lentil is sown as relay cropping in rice, however, it can also be grown as an intercrop with .....

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SECTION "B"

(Short answer questions)
[5Q. × 5 = 25 marks]

Attempt *ANY FIVE* questions.

1. Explain about the symbiosis between legumes and rhizobium. Describe the process of nodulation and nitrogen fixation in grain legumes.

2. How are oilseed crop nutritionally important? What are the major oilseed crops grown in Nepal? Briefly discuss about the production status and major constraints of oilseed crops in Nepal.

3. Describe the importance of chickpea. Explain how chickpea is included in Nepalese cropping system? What are the major constraints of the crop?

4. Explain about the importance and use of sunflower? Give a brief description about the cultivation practices of sunflower.

5. How are grain legumes important crops in Nepal? Explain with relevant examples.

6. Describe about seed sowing time, method of sowing and rate of seed required with fertilizer management of cowpea. When can cowpea be harvested for green vegetable and grain?

SECTION "C"

(Long answer questions)
[3Q. × 10 = 30 marks]

Attempt *ANY THREE* questions.

7. What do you know about canola oil? Write about the suitable climate and soils required to grow Rapeseed and Mustard? Describe about their cultivation practices with name of major varieties released in Nepal.

8. Introduce soybean as an important legume crop. Give detail description about its taxonomy, botany, morphology and different growth stages of the plant. How can soybean be intercropped or mixed cropped with other cereals?

9. How is Sesame important for oil and other culinary purpose? Describe the cultivation of Sesame including its harvesting, threshing, drying and storage.

10. Describe about the soils and climate requirement of Lentil? Give detail description about cultivation practices, harvesting and storage of the crop with various cropping system that include Lentil in mixed, relay, multi-storey or intercropping with other crops.