**ROYAL CIVIL SERVICE COMMISSION**

**BHUTAN CIVIL SERVICE EXAMINATION (BCSE) 2014**

**EXAMINATION CATEGORY: TECHNICAL**

**PAPER III: SUBJECT SPECIALIZATION PAPER for *AGRICULTURE***

**Date** : 12 October 2014

**Total Marks** : 100

**Examination Time** : 150 minutes (2.5 hours)

**Reading Time** : 15 Minutes (prior to examination time)

**GENERAL INSTRUCTIONS:**

1. Write your Roll Number clearly and correctly on the Answer Booklet.
2. The first 15 minutes is being provided to check the number of pages of Question Paper, printing errors, clarify doubts and to read the instructions. You are NOT permitted to write during this time.
3. This paper consists of **TWO SECTIONS**, namely SECTION A and SECTION B:
* **SECTION A** has two parts: Part I - 30 Multiple-Choice Questions

Part II - 4 Short Answer Questions

All questions under SECTION A are COMPULSORY.

* **SECTION B** consists of two Case Studies. Choose only ONE case study and answer the questions under your choice.
1. All answers should be written with correct numbering of Section, Part and Question Number in the Answer Booklet provided to you. Note that any answer written without indicating any or correct Section, Part and Question Number will NOT be evaluated and no marks would be awarded.
2. Begin each Section and Part in a fresh page of the Answer Booklet.
3. You are not permitted to tear off any sheet(s) of the Answer Booklet as well as the Question Paper.
4. Use of any other paper including paper for rough work is not permitted.
5. You are required to hand over the Answer Booklet to the Invigilator before leaving the examination hall.
6. This paper has **07** printed pages in all, including this instruction page.

**GOOD LUCK!**

**SECTION A PART I – Multiple Choice Questions (30 Marks)**

**Choose the correct answer and write down the letter of your chosen answer in the Answer Booklet against the question number e.g. 31. (d). Each question carries ONE mark. Any double writing, smudgy answers or writing more than one choice shall not be evaluated.**

1. The word ‘Agriculture’ is derived from which language?
2. Greek
3. Latin
4. Arabic
5. French
6. From which language is the word ‘Agronomy’ taken from?
7. Latin
8. Greek
9. French
10. German
11. When one plant has both male and female flowers separately, is called?
12. Monophrodits
13. Monoecious
14. Hermaphrodite
15. Apomixis
16. Which one is not biofertilizer?
17. Multiflex
18. PSB
19. Vermicompost
20. NADEP
21. Red Colour of tomatoes is due to the presence of ….
22. Lycopene
23. Carotene
24. Xanthomonas
25. Anthocyanin
26. Red soil is poor in which of the following nutrients?
27. Phosphorous and Sulphur
28. Phosphorous and Nitrogen
29. Nitrogen and Zinc
30. Nitrogen and Potassium
31. Maximum photosynthesis takes place in ….
32. Blue light
33. Red light
34. Violet light
35. Green light
36. Who has first time seen the micro-organism?
37. Robert Koch
38. John Tyndall
39. Antonie van Leeuwenhoek
40. Louis Pasteur
41. Number of essential mineral elements plant is …..
42. 13
43. 20
44. 16
45. 15
46. SRI is a technique used in………………..
47. Maize
48. Groundnut
49. Wheat
50. Rice
51. The year 2014 has been declared as the UN International year of ............
52. Agriculture
53. Small farmers
54. Family Farming
55. Commercial farming
56. Endosulphan is also known as ……
57. Lindane
58. Thiodan
59. Aldrin
60. B.H.C
61. The Cooperative Act of Bhutan 2001 was amended in which year?

(a) 2010

(b) 2005

(c) 2007

(d) 2009

1. Element(s) of communication is/are…..
2. Message
3. Feedback
4. Channel
5. All of these
6. Cell Organelle found only in plants are …..
7. Mitochondria
8. Golgi complex
9. Ribosomes
10. Plastids
11. Who among the following is the current Minister in charge of the Ministry of Agriculture and Forests?
12. Lyonpo Yeshey Gyamtsho
13. Lyonpo Pema Gyamtsho
14. Lyonpo Yeshey Dorji
15. Lyonpo Pemba Gyamtsho
16. Proteins are synthesized in……
17. Centrosomes
18. Ribosomes
19. Mitochondria
20. Golgi bodies
21. The headquarter of Food and Agriculture Organisation (FAO) of UN is located in which following cities.
22. New York
23. Tokyo
24. Rome
25. Washington DC
26. Muriate of Potash is….
27. K2SO4
28. KCL
29. K2HPO4
30. KNO3
31. Whip tail disease of cauliflower is caused by deficiency of ….
32. Nitrogen
33. Boron
34. Molybdenum
35. Zince
36. A.D.P to A.T.P change is called……………
37. Oxidation
38. Phosphorylation
39. Photosynthesis
40. Transpiration
41. Which of the following factor does not affect the Nitrification?
42. Air
43. Seed
44. Temperature
45. Moisture
46. With the start of Masters in…………………, CNR becomes fourth institute to provide a master’s program under RUB. Choose the correct answer
47. Renewable Natural Resources
48. Rural Development
49. Development Practice
50. Agriculture Science
51. Cauliflower belongs to the family of…….
52. Cruciferae
53. Poacae
54. Malvaceae
55. Leguminaceae
56. Aims of plant breeding are to produce…….
(a) disease-free varieties
(b) high-yielding varieties
(c) early-maturing varieties
(d) all of the above
57. Growing of two or more crops simultaneously on the same piece of land is called……
(a) mixed cropping
(b) mixed farming
(c) intercropping
(d) fanning
58. The Mexican dwarf wheat variety was developed by…….
(a) Swaminathan
(b) Borlaug
(c) Watson
(d) Khush
59. The desired varieties of economically useful crops are raised by
(a) vemalisation
(b) mutation
(c) natural selection
(d) hybridisation
60. A plant breeder who wants to develop a disease resistant variety. What should s/he do first?
(a) Hybridisation
(b) Mutation
(c) Selection
(d) Production of crop
61. Selection of homozygous plant is……………
(a) pure line selection
(b) mass selection
(c) mixed selection
(d) introduction

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**PART II: Short Answer Question (20 Marks).**

**Write your answers in the answer book provided. Each question carries 5 marks.**

1. What are the steps in adoption process?

**2. Why should Bhutan go organic in agriculture?**

3. Why is tomato green when raw and red when ripened ?

**4. Why is wild life depredation to crops still a major problem in Bhutanese agriculture?**

**SECTION B**

**Case Study**

**Choose either Case 1 or Case 2 from this Section. Each Case carries 50 marks. Mark for each sub-question is indicated in the brackets. Use answer books provided to write your answers.**

### Case study 1

### We know that the Royal Government has been according high priority to agriculture development since the start of the Five Years Plan in 1960s. And Ministry of Agriculture has been pursuing the policy objectives of food self sufficiency and food security. Over the years, though the GDP contribution of Agriculture has decreased from 40 % in 1990 to about 14 % as of today, it is still the highest contributor from a single sector.

### However, it is also true that as of today, Bhutan is still not self sufficient in most food items including rice, edible oils and vegetables.

### So, what in your opinion is the obstacle and how could this be addressed.

**OR**

 **Case study 2**

# In the last few years, due to various global, regional and national economic and social reasons, Bhutanese consumers have been hit very strongly with price hike in all goods and services. Most visible and most expressed was the price rise in local agricultural products like vegetables, fruits, eggs etc. Time and again, public views were expressed with the hope for Government’s intervention to control prices.

In your view, firstly what are the reasons for these price rises of agricultural products like vegetables, fruits and eggs?

Secondly, give your opinions on whether Government should control prices of agricultural products and why?

**\*\*\*TASHI DELEK\*\*\***