

KATHMANDU UNIVERSITY
End Semester Examination [C]
November, 2017

Marks Obtained:

Level : B. Tech.
Year : IV

Course : BIOT 407
Semester : II

Exam Roll No. : Time: 30 mins.

F. M. : 20

Registration No.:

Date : NOV 15 2017

SECTION "A"

[10 Q. × 0.5 = 5 marks]

Choose and tick [√] the most appropriate answer.

- Cybrids are
 nuclear hybrids
 hybrid plants derived from cross pollination
 cytoplasmic hybrids
 cytological hybrids
- Which of the following is present on a Ti plasmid, but not on any component of a binary vector system?
 Vir genes GUS genes LB, RB Opine genes
- Which of the following metabolites are implicated in stress tolerance?
 Proline Citrate Sucrose Opine
- Which of the following gene is responsible for resistance against chilling?
 Glycerol 1 phosphate acyl transferas Polygalactouranase
 Sucrose phosphate synthase gene ACC deaminase
- Insecticides generally attack.....system
 respiratory nervous muscular circulatory
- The roots of a plant are converted into drug-producing structures in a process called
 rhizosecretion bioremediation
 mibridization microcosm establishment
- Expression of antisense RNA in transgenic plants is a general method used to
 activation of genes elimination of genes
 block viral protein genes reduce expression of genes
- Leghaemoglobin creates
 anaerobic condition for optimum activity of nitrogenase
 aerobic condition for optimum activity of nitrogenase
 required oxygen concentration for optimum activity of nitrogenase
 Suitable environment for nodule formation
- Which of the following bacteria is capable of oxidizing ammonia (NH₄)?
 Nitrospina *Nitrobacter*
 Nitrosococcus *Nitrosobacter*
- Azolla* as biofertilizer, increases the yield of rice fields by
 50% 10% 60% 40%

SECTION "B"
[5Q. × 1 = 5 marks]

Fill in the blanks:

1. Responses to abiotic stresses require the production of important metabolic proteins involved in synthesis of.....
2. Plastid transformation is advantageous because the transgene copy number is.....by the large number of chloroplasts in the cell.
3.is a fully decomposed organic matter, high biological activity.
4. Guide RNAs guide the insertion or deletion of.....residues into mitochondrial mRNAs.
5. Ribosomal inactivating protein (RIP) is expressed, leading to the.....of all embryos.

SECTION "C"
[5 Q. × 2 = 10 marks]

Define in *one* sentence:

6. Superweed:
7. Gene silencing:
8. Glucocerebrosidase:
9. Nitrogenase complex:
10. Biofertilizer:

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SECTION "D"

(Long answer questions)

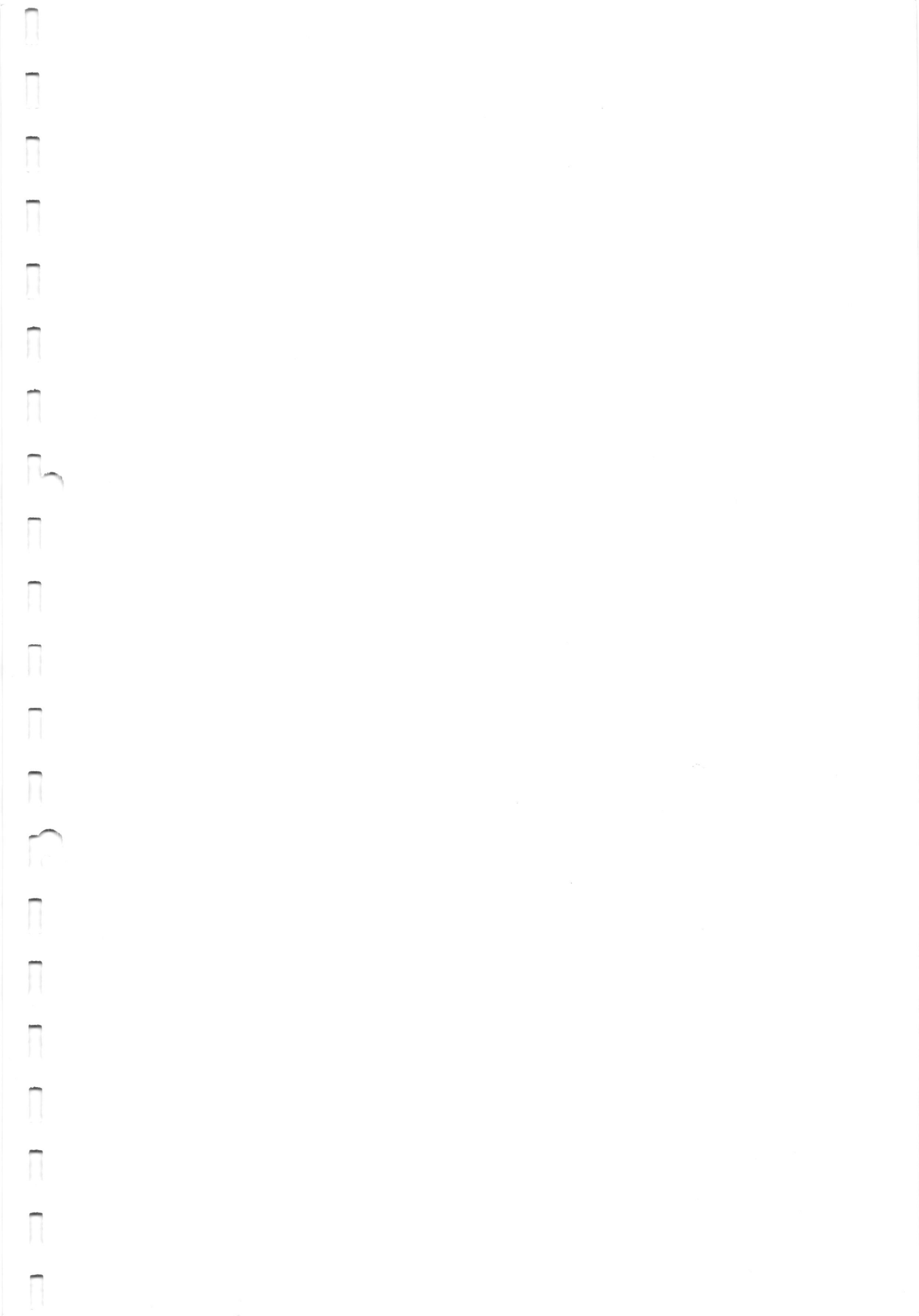
[3Q. × 7=21 marks]

1. Define antisense technology. Describe application of antisense technology in plant disease resistance.
2. What are transgenic plants? Describe the transgenic crops with pathogen derived resistance mentioning suitable examples.
3. Define biological nitrogen fixation. Explain molecular mechanism of symbiotic nitrogen fixation and the challenges to its extension to nonlegume crops.

SECTION "E"

(Short answer questions)

4. Write short notes on: [6 Q. × 4 = 24 marks]
 - a. Food Security
 - b. Molecular farming
 - c. Drought resistant plants
 - d. Crop adaptation mechanisms to high temperature
 - e. Genetically engineered seeds
 - f. Vermicomposting
5. Give *TWO* major differences between: [2 Q. × 2 = 4 marks]
 - a. Compost and Green manure
 - b. Carrier and liquid based biofertilizers
6. Explain why/how for the following: [3 Q. × 2 = 6 marks]
 - a. Nematodes can be destroyed by fungi.
 - b. At high light conditions, the carotenoid violaxanthin is deepoxidized.
 - c. Overexpression of trehalose biosynthetic genes increase drought tolerance in rice.





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OFFICE OF THE CONTROLLER OF EXAMINATIONS

Dhulikhel, P.O. Box 6250, Kathmandu, Nepal

Tel: (011) 661399, Fax: 977-11-663199, e-mail: controllerofexaminations@ku.edu.np

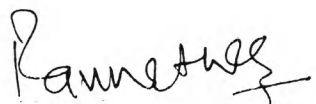
December 26, 2017

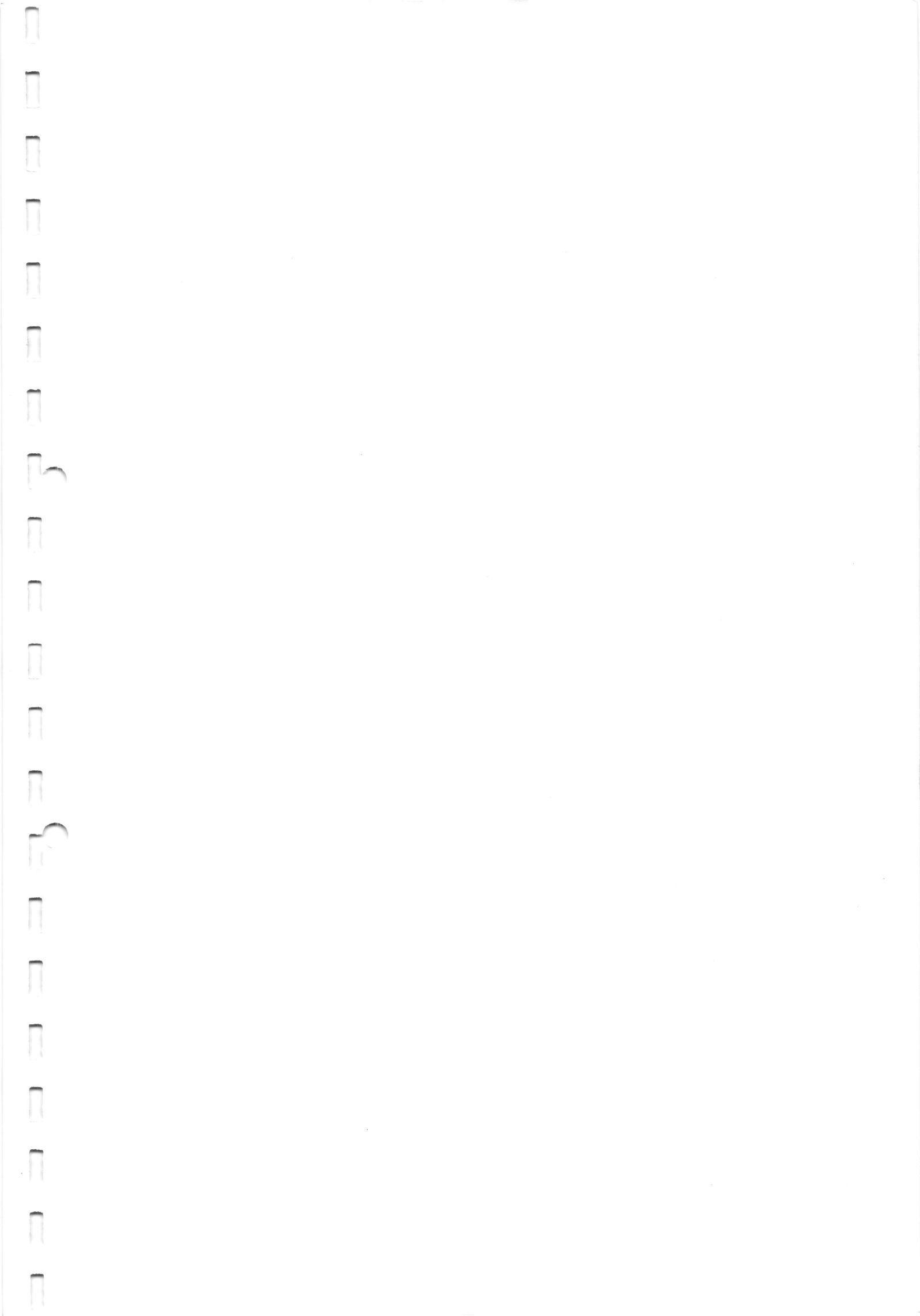
NOTICE

End-Semester Compartmental Examinations of B.E./B.Sc./B.Pharm./B.Tech. students will be held according to the following schedule.

Date	Day	Courses
January 5, 2018	Friday	MATH 104, MATH 102, MEEG 202, EEEG 309, CIEG 308, BIOT 307, ENVS 303, GEOM 313, MEEG 309, PHAR 315
January 7, 2018	Sunday	BIOL 206, BIOT 207, CHEG 208, GEOM 204, INAN 211, ETEG 303, CHEG 312, MEEG 306, ENGG 112, CHEM 102, MATH 208, PHYS 311, BIOT 308, ENVS 331, PHAR 311, CIEG 317, GEOM 315
January 8, 2018	Monday	BIOT 209, CHEG 212, CHEG 209, MEEG 206, COMP 232, COMP 201, COMP 204, CHEM 203, COMP 302, COMP 315, CIEG 313
January 9, 2018	Tuesday	COMP 116, COMP 102, MGTS 301, COEG 304, EPEG 318, ETEG 305, CHEG 309, PHYS 312, BIOT 309
January 10, 2018	Wednesday	MEEG 207, BIOT 210, COMP 231, COMP 304, COMP 323, MEEG 316, CHEG 314, ENVS 306, GEOM 319
January 11, 2018	Thursday	PHYS 102, EEEG 202, COEG 301, PHYS 313, BIOT 306, COMP 314, CHEG 310, MATH 322, COMP 409, MEPP 433
January 12, 2018	Friday	BIOT 206, ENVE 205, MATH 207, PHYS 212, PHAR 212, ENVS 318, ENVS 328, MGTS 302, COMP 341, MEEG 318
January 14, 2018	Sunday	ENVE 101, PHAR 111, BIOT 101, MATH 103, MCSC 202, PHYS 314, BIOT 305, COMP 317, COMP 342, MEEG 317, PHAR 316
January 16, 2018	Tuesday	ENGT 102, ENVS 101, STAT 101, COMP 202, EEEG 215, CHEM 212, MCSC 201, BIOT 208, PHYS 213, MEEG 301, COMP 306, COMP 316
January 17, 2018	Wednesday	MEEG 308, MEPP-403

Examination Time : 11.00 A.M. to 2.00 P.M.
Examination Center : Kathmandu University, Dhulikhel.


Prof. Panna Thapa, Ph. D.
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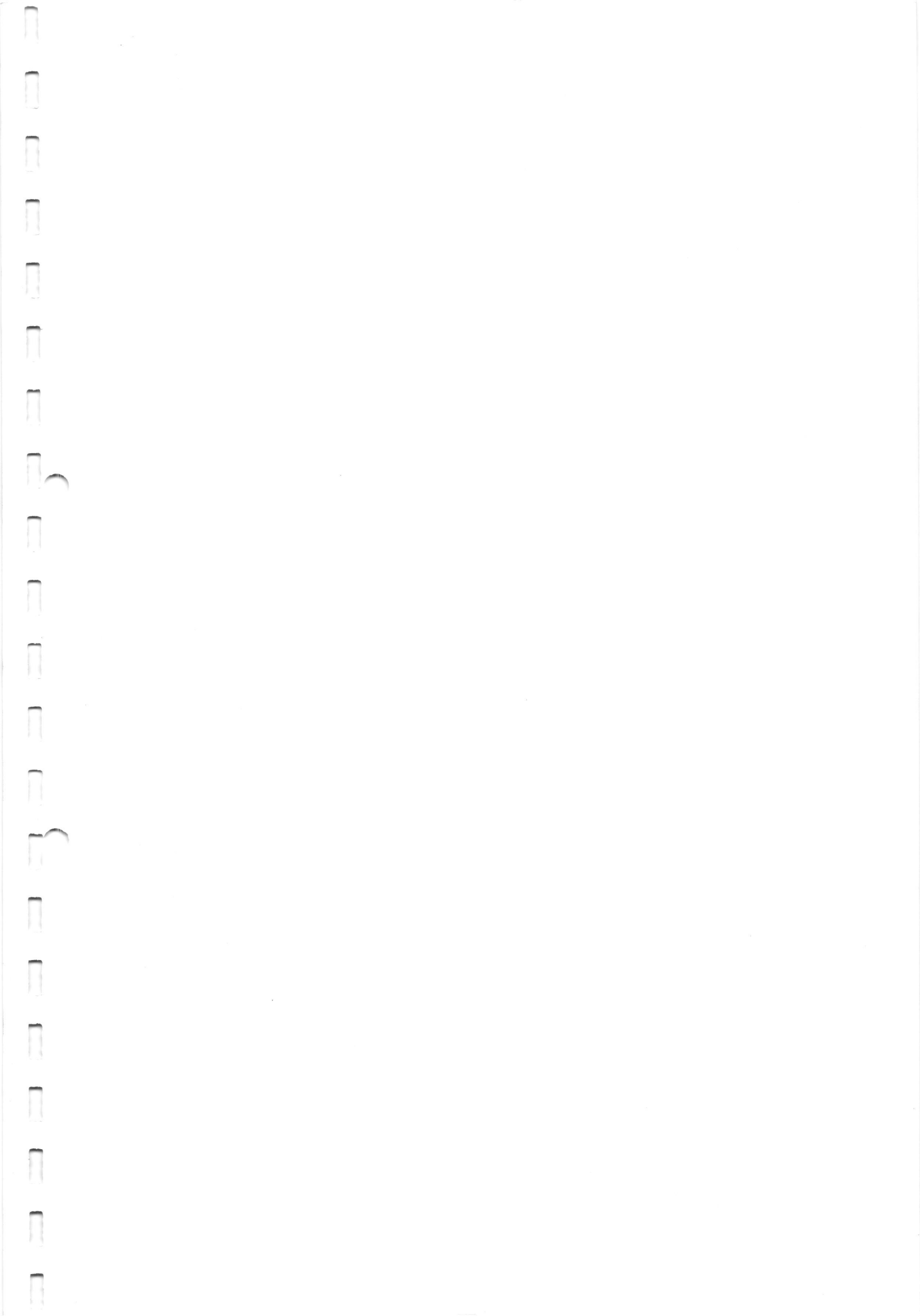
Final Year End-Semester Compartmental/ GPA make-up Examinations of B.E./B.Sc./B.Pharm. /B.Tech. students will be held according to the following schedule.

Date	Day	Courses
November 15, 2017	Wednesday	COEG 402, ETEG 417, BIOT 407, MEEG 301
November 17, 2017	Friday	MEEG 315, MGTS 301, COEG 304, MEPP 412, EEG 207, EEG 313, COMP 421
November 19, 2017	Sunday	MGTS 403, EEG 314, MATH 101, PHAR 303

Examination Time : 11.00 A.M. to 2.00 P.M.
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Special compartment for Convocation





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