PG/IIIS/BOT/396.1A/24(Pr.)

M.Sc. 3rd Semester Examination, 2024

BOTANY

(*Special Paper : Angiosperms Taxonomy*)

(Practical)

PAPER – BOT-396.1A

Full Marks : 25

Time : 3 hours

Answer **all** questions

The figures in the right hand margin indicate marks

1. Draw, dissect, label and describe the supplied specimen A & B. Identify the specimens up to species level with the help of local flora (s); leave the preparation. 14

[Drawing-3, Dissection-3, Label-1, Description-5, and Identification-2]

2. Identify the specimens C & D up to the species level. 3

3. Make a temporary suitable preparation of the supplied sample E and comment on them. 2

4. Submission of herbarium/documentation, laboratory note book and field report. 3

5. Viva-voce. 3

PG/IIIS/BOT/396.1B/24(Pr.)

M.Sc. 3rd Semester Examination, 2024

BOTANY

(*Mycology*)

(Practical)

PAPER – BOT-396.1B

Full Marks : 25

Time : 3 hours

Answer **all** questions

The figures in the right hand margin indicate marks

1. Make a suitable preparation of the supplied specimen A. Draw, label, describe and identify the genus.

[Slide preparation-3; Drawing-2; Description-2, Identification-1] 8

2. Make a suitable preparation of the supplied specimen B. Draw, label, describe and identify the genus. 8

   [Slide preparation-3; Drawing-2; Description-2, Identification-1]

3. Laboratory notebook. 4

4. Viva-voce. 5

 PG/IIIS/BOT/396.1C/24(Pr.)

M.Sc. 3rd Semester Examination, 2024

BOTANY

(*Cell Biology and Genetics*)

(Practical)

PAPER – BOT-396.1C

Full Marks : 25

Time : 3 hours

Answer **all** questions

The figures in the right hand margin indicate marks

A. Perform the tick marked problem of the following. 10

1. Workout the **Sample A**; displaying cells at any two stages of reductional division and any other two stages of equational division of meiosis. **Draw** and **describe** all the shown stages. $2\frac{1}{2} \times 4$

2. Make a squash preparation of the **Sample B**. Display a mitotic metaphase ideal for karyotyping. Carry out karyotypic analysis commenting on the symmetric/asymmetric nature of it. $2 + 8$

3. Workout the **Sample C** to find out four (**4**) different types of mitotic abnormalities. Draw and describe the divisional stages highlighting the nature of respective abnormalities. $2\frac{1}{2} \times 4$

B. Perform the *tick marked* item of the following :

4. Perform the pollen tube germination test of the **Sample D**, under the treatment of the different concentrations of the supplied solution. Compare the performance under different concentrations with respect to the speed and frequency of germination. 8

5. Conduct the viability test of the pollens of the **Sample E**. 8

6. Laboratory notebook. 2

7. Viva-voce. 5

PG/IIIS/BOT/396.1E/24(Pr.)

M.Sc. 3rd Semester Examination, 2024

BOTANY

(*Special Microbiology*)

(Practical)

PAPER – BOT-396.1E

Full Marks : 25

Time : 6 hours (in 2 days)

Answer **all** questions

The figures in the right hand margin indicate marks

Answer the following questions (principle, requisition, result and conclusion to be written in the answer script) :

1. Find out fermentative ability of supplied bacteria (S) in the supplied sugar samples (A, B and C). 8

Or

Determine starch hydrolyzing ability of the supplied bacterial strain (P). 8

Or

Determine portability of supplied water sample (W) through MPN test. 8

2. Find out number of bacteria present in supplied sample (Q) through spread plate method. 10

Or

Determine sensitivity of the supplied bacteria (M) against supplied antibiotic (X) through agar cup method. 10

3. Laboratory notebook. 2

4. Report of field visit. 1

5. Viva-voce. 4

PG/IIIS/BOT/396.1F/24(Pr.)

M.Sc. 3rd Semester Examination, 2024

BOTANY

(*Palaeobotany*)

Special Paper — Palaeobotany, Palynology & Plant Reproductive Biology

(Practical)

PAPER — BOT-396.1F

Full Marks : 25

Time : 3 hours

Answer **all** questions

The figures in the right hand margin indicate marks

1. Analyze the megafloral assemblage A/B. Draw and describe any three elements present in it. Mention their age of occurrence and mode of preservation. 3 + 6 + 2

2. Comment on C, D and E. 2 + 2 + 2

3. Submission of practical note book. 3

4. Viva-voce. 5

 PG/IIIS/BOT/396.1G/24(Pr.)

M.Sc. 3rd Semester Examination, 2024

BOTANY

(Plant Physiology, Biochemistry and Molecular Biology)

(Practical)

PAPER – BOT-396.1G

Full Marks . 25

Time . 3 hours

Answer **all** questions

The figures in the right hand margin indicate marks

Perform any **two** the experiments (**Q. No.1** to **4**) as indicated by the tick (✓) mark.

1. Evaluate and compare the total dehydrogenase activity of the supplied seed samples A, B, C, D and E Give proper explanation of the result obtained 2 + 4 + 2
(Requisition–2, Procedure–4, Result–2)

2. Perform the experiment for extraction and estimation of carotenoid pigment from plant samples 2 + 4 + 2
(Requisition–2, Procedure–4, Result–2)

3. Perform the experiment for separation and identification of plant pigments by TLC method 2 + 4 + 2
(Requisition–2, Procedure–4, Result–2)

4. Extract and estimate total protein content from the supplied plant samples (normal and stressed) and evaluate the effect of high temperature stress on protein content by spectrophotometric method 2 + 4 + 2
(Requisition–2, Procedure–4, Result–2)

5. Laboratory notebook 4

6. Viva-voce 5

PG/IIIS/BOT/396.2/24(Pr.)

M.Sc. 3rd Semester Examination, 2024

BOTANY

(Practical)

PAPER – BOT-396.2

Full Marks : 25

Time : 3 hours

Answer **all** questions

The figures in the right hand margin indicate marks

1. Submition of your Seminar writeup. 8

2. Presentation in the PPT format. 12

3. Viva-voce on presentation. 5

MV– 100