SH-I/Botany-103-GE-1/(PR)/19

B.Sc. 1st Semester (Honours) Practical Examination, 2019-20

BOTANY

Course ID : 11324 **Course Code : SHBOT-103-GE-1(PR)**

Course Title: Plant Biodiversity [Microbes, Algae, Fungi, Archegoniate (Bryophyta, Pteridophyta & Gymnosperm)]

Time: 2 Hours **Full Marks: 15**

The figures in the right hand side margin indicate marks.

Candidates are required to give their answers in their own words as far as practicable.

1. Make a suitable microscopic preparation of specimen 'A'. Draw and comment on your observation. Identify the genus. 5

[Slide preparation – 1, Drawing & labelling – 1+1, Identifying character – 1, Name of genus – 1]

2. Make a suitable vegetative/reproductive slide preparation of the sample 'B'. Comment on the observation. Identify the genus. 5

[Slide preparation – 1, Comment – 2, Identification – 1, Drawing – 1, Labelling – 1, Diagnostic character – 1, Identification – 1]

3. Laboratory Notebook. 2

4. viva voce 3

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SH-I/Botany-103-GE-1/(PRI)/19

B.Sc. 1st Semester (Honours) Practical Examination, 2019-20

BOTANY

Course ID : 11324 **Course Code : SHBOT-103-GE-1(PRI)**

Course Title: Plant Biodiversity [Microbes, Algae, Fungi, Archegoniate (Bryophyta, Pteridophyta & Gymnosperm)]

Instruction to the Examiners.

1. Specimen A : Any one material from Algae (Nostoc, Oedogonium), Fungi/Pathology (Gills of *Agaricus*/Rust of *Justicia*), Bryophyta (*Marchantia* thallus or *Funaria* capsule).

2. Specimen B : Any one material from Pteridophyta (Stem of *Selaginella* or sporophyll of *Pteris*), Gymnosperm (Leaflet of *cycas* or needle of *Pinus*).

3. Practical notebook submission.

4. Viva voce should be taken atleast by two examiners.

5. Marks for question no. 3 and no. 4 should be entered strictly in the main answer scripts and only signed by examiners.

6. Key to the materials supplied should be submitted along with the examined answer scripts to the Controller of Exam. Dept. within 7 days after completion of Exam.

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SP-I/Botany-101C-1A/(PR)/19

B.Sc. 1st Semester (Programme) Practical Examination, 2019-20

BOTANY

Course ID : 11328 **Course Code : SPBOT-101C-1A(PR)**

Course Title: Plant Biodiversity [Microbes, Algae, Fungi, Archegoniate]

Time: 2 Hours **Full Marks: 15**

The figures in the right hand side margin indicate marks.

Candidates are required to give their answers in their own words as far as possible.

Scientific names and name of the family must be written in English and underlined as applicable.

দক্ষিণ প্রান্তস্থ সংখ্যাগুলি প্রশ্নের পূর্ণমানের নির্দেশক।
পরীক্ষার্থীদের যথাসম্ভব নিজের ভাষায় উত্তর দিতে হবে।

বিজ্ঞান সম্মত নাম ও গোত্রের নাম ইংরাজীতে লিখতে হবে এবং যেখানে প্রয়োজন নীচে দাগ দিতে হবে।

1. Make a temporary preparation of specimen 'A'. Draw, label and identify the genus with reasons. 5

[Slide preparation – 1, Drawing – 1, Labelling – 1, Identifying characters – 1, Name of the genus – 1]

নমুনা 'A' প্রদত্ত উদ্ভিদ অংশটির একটি অস্থায়ী স্লাইড প্রস্তুত করো। চিহ্নিত চিত্র অঙ্কন করো ও বিশেষ বৈশিষ্ট্যগুলির উল্লেখ করে শনাক্ত করো।

[স্লাইড প্রস্তুতকরণ – 1, চিত্র– 1, চিহ্নিত করণ – 1, শনাক্ত করণ – 1, গণের নাম – 1]

2. Make a temporary preparation of specimen 'B'. Draw, label and identify with diagnostic characters. 5

[Slide preparation – 1, Drawing – 1, Labelling – 1, Diagnostic characters – 1, Identification – 1]

নমুনা 'B' প্রদত্ত উদ্ভিদ অংশটির একটি অস্থায়ী স্লাইড প্রস্তুত করো। চিহ্নিত চিত্র অঙ্কন করো এবং কারণসহ শনাক্ত করো।

[স্লাইড প্রস্তুতকরণ – 1, চিত্র– 1, চিহ্নিত করণ – 1, বৈশিষ্ট্য – 1, শনাক্ত করণ – 1]

3. Submit Practical record books and prepared slides. 2

ব্যবহারিক খাতা ও স্লাইড প্রদান করো।

4. Viva voce 3

মৌখিক প্রশ্নাবলী।

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SP-I/Botany-101C-1A/(PRI)/19

B.Sc. 1st Semester (Programme) Practical Examination, 2019-20

BOTANY

Course ID : 11328 **Course Code : SPBOT-101C-1A(PRI)**

Course Title: Plant Biodiversity [Microbes, Algae, Fungi, Archegoniate]

Instruction to the Examiners.

1. Specimen 'A' : Any one material from Algae *Oscillatoria*, *Oedogonium*, Fungi : Gills of *Agaricus*, Pathology : Rust of *Justicia*, Bryophyte : *Marchantia* thallus, *Funaria* Capsule. 5

[Break up : Slide preparation – 1, Drawing – 1, Labelling – 1, Identifying characters – 1, Name of Genus – 1]

2. Specimen 'B' : Any one material from pteridophyta : Stem of *Selaginella*, Sporophyll of *Pteris*, Gymnosperms Leaflet of *Cycas*, Needle of *Pinus*. 5

[Break up : Slide preparation – 1, Drawing – 1, Labelling – 1, Diagnostic characters – 1, Identification – 1]

3. Submission : Practical notebooks & prepared slides. 2

4. Viva voce. 3

5. Not more than 20(twenty) examinees should be taken in a batch per paper per day.

6. Specimen of Q. No. 1 and 2 should be given alternately to the examinees.

7. Marks of Q. No. 3 and 4 should be entered strictly in the main answer scripts.

8. Viva voce should be taken at least by two examiners.

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SH-I/Botany-101C-1/(PR)/19

B.Sc. 1st Semester (Honours) Practical Examination, 2019-20

BOTANY

Course ID : 11321 **Course Code : SHBOT-101C-1(PR)**

Course Title: Phycology and Microbiology

Time: 2 Hours **Full Marks: 15**

The figures in the right hand side margin indicate marks.

Candidates are required to give their answers in their own words as far as practicable.

1. Make a preparation of given sample (A) as directed. Draw the diagram as found in the microscopic field and make a comment on the observation.

[Preparation = 1, Diagram and labelling = 1+1, Comment = 2.] 5

2. Make a microscopic preparation of given sample (B) as directed. Make a comment on the reproductive structure with labelled diagram of the prepared specimen.

[Preparation = 1, Diagram and labelling = 1+1, Comment = 2.] 5

3. Laboratory records 2

4. Viva voce 3

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SH-I/Botany-101C-1/(PRI)/19

B.Sc. 1st Semester (Honours) Practical Examination, 2019-20

BOTANY

Course ID : 11321 **Course Code : SHBOT-101C-1(PRI)**

Course Title: Phycology and Microbiology

Instruction to the Examiners.

(Question wise)

1. Sample 'A' will be a pure bacterial culture or curd sample. The student will properly stain the bacteria with simple stain and comment on the morphology of the observed bacteria.

[Preparation = 1, Diagram and labelling = 1+1, Comment = 2.] 5

2. Sample 'B' will be any specimen of algae as prescribed in the syllabus. Where proper reproductive structures are prominently observed.

[Preparation = 1, Diagram and labelling = 1+1, Comment = 2.] 5

3. Credit will be given to proper scientific drawing in the Laboratory notebooks with signature of teachers.

4. Each candidate shall be asked at least 4 questions in viva voce.

5. Evaluated answer scripts along with key to the materials would be submitted within seven days after completion of exam to the controller of exam, BKU.

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SH-I/Botany-102C-2/(PR)/19

B.Sc. 1st Semester (Honours) Practical Examination, 2019-20

BOTANY

Course ID : 11322 **Course Code : SHBOT-102C-2(PR)**

Course Title: Biomolecules and Cell Biology

Time: 2 Hours **Full Marks: 15**

The figures in the right hand side margin indicate marks.

Candidates are required to give their answers in their own words as far as practicable.

1. Conduct suitable biochemical test on supplied sample 'A' as per card drawn. Write down the procedures and identify the biochemical sample. 1+2+2=5

2. Make a temporary slide of root tip preparation by aceto-orcein squash technique from supplied sample 'B'. Draw one characteristic divisional stage, label properly and comment on it. 1+(1+1)+2=5

3. Practical Notebook 2

4. Viva voce 3

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SH-I/Botany-102C-2/(PRI)/19

B.Sc. 1st Semester (Honours) Practical Examination, 2019-20

BOTANY

Course ID : 11322 **Course Code : SHBOT-102C-2(PRI)**

Course Title: Biomolecules and Cell Biology

Instruction to the Examiners.

1. Not more than 20 examinees should be taken in a batch.

2. Materials set/set no. should be changed for each batch.

3. Proportionate marks should be deducted from the examinees who do not have regular signatures of the teachers in their laboratory notebook.

4. 'Key' to the materials supplied should be submitted along with the examined answer-scripts to the controller of examinations, BKU within 7 days after the completion of examination.

5. Candidates are required to pick up question number 1 drawing cards. Sets of question no. 1 are given below:

[Distribution of marks: Performance of bio-chemical test – 1; Procedure – 2; Reason and identification – 2. Total – 5]

Set – 1 : Determine whether the supplied sample solution contains Carbohydrate/Protein.

Set – 2 : Determine whether the supplied sample solution contain Reducing sugar/Non-Reducing sugar.

Set – 3 : Determine whether the supplied sample solution contain Protein/Reducing sugar.

Set – 4 : Determine whether the supplied sample solution contain Non-reducing sugar/Protein.

6. For sample 'B' (question no. 2) prefixed root tip of *Alium cepa* should be supplied.

7. Full name, specimen signature and address (with mobile no.) of examiner should be given along with the 'Key' to the materials.

8. Evaluated answer scripts along with key should be deposited in controller of dept. BKU within 7 days after completion of exam.

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SH-I/Botany-102C-2/19

B.Sc. 1st Semester (Honours) Examination, 2019-20

BOTANY

Course ID : 11312 **Course Code : SHBOT-102C-2**

Course Title: Biomolecules & Cell Biology

Time: 1 Hour 15 Minutes **Full Marks: 25**

The figures in the right hand side margin indicate marks.

Candidates are required to give their answers in their own words as far as practicable.

1. Answer *any five* of the following: 1×5=5

(a) Give an example of sugar epimer.

(b) Draw the structure of glucopyranose.

(c) Give example of a polar covalent compound.

(d) What is GERL system?

(e) How does DNA differ from RNA with respect to nitrogen base?

(f) How is active transport different from passive transport?

(g) Cite an example of a coenzyme.

(h) Which structure of cell is responsible for ribosome biogenesis?

2. Answer *any two* of the following: 5×2=10

(a) Name one storage lipid and one structural lipid. Draw the structure of triacyl glycerol. Why PUFA are beneficial than saturated fatty acid? 2+2+1=5

(b) Enumerate different types of bonds responsible for primary, secondary and tertiary structures of protein. What do you mean by protein denaturation? 3+2=5

(c) How prosthetic group differs from coenzyme? What is the active site of enzyme? Briefly explain different types of enzyme inhibitions. 2+1+2=5

(d) What are core histone proteins? Mention the specific function of H-1 histone protein. What do you mean by chromatin scaffold? 2+1+2=5

3. Answer *any one* of the following: 10×1=10

(a) What do you mean by protein targeting and protein folding? How protein is targeted to its destination organelle? 2+2+6=10

(b) Describe the ultrastructure of mitochondria in brief with suitable sketch. Why mitochondria is called semiautonomous organelle? Point out the role of check points for regulation of cell cycle. (3+2)+2+3=10

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SH/Botany-103-GE-1/19

B.Sc. 1st Semester (Honours) Examination, 2019-20

BOTANY

Course ID : 11314 **Course Code : SHBOT-103-GE-1**

Course Title : Plant Biodiversity [Microbes, Algae, Fungi, Archegoniate (Bryo, Pteridophyta and Gymnosperm)]

Time: 1 Hour 15 Minutes **Full Marks: 25**

The figures in the right hand side margin indicate marks.

Candidates are required to give their answers in their own words as far as practicable.

দক্ষিণ প্রান্তস্থ সংখ্যাগুলি প্রশ্নের পূর্ণমানের নির্দেশক।

পরীক্ষার্থীদের যথাসম্ভব নিজের ভাষায় উত্তর দিতে হবে।

1. Answer *any five* of the following: 1×5=5

যে কোনো পাঁচটি প্রশ্নের উত্তর দাও ঃ

(a) Name two economic importance of Bacteria.
ব্যাকটেরিয়ার দুটি অর্থনৈতিক গুরুত্ব লেখো।

(b) What is heterocyst? Where is it found?
হেটারোসিস্ট কী? এটি কোথায় দেখা যায়?

(c) Name a basidiomycetes fungi causing plant disease.
ব্যাসিডিওমাইসেটিস-এর অন্তর্ভুক্ত উদ্ভিদের রোগ সৃষ্টিকারী একটি ছত্রাকের নাম লেখো।

(d) What is gemma cup? Where is it found?
'গেমা কাপ' কী? এটি কোথায় দেখতে পাওয়া যায়?

(e) What is VAM?
VAM কী?

(f) Name one homosporous and a heterosporous pteridophyte?
একটি সমরেণুপ্রসূ ও একটি অসমরেণুপ্রসূ টেরিডোফাইটার নাম লেখো।

(g) What is sulphur shower?
সালফার বৃষ্টি কী?

(h) What is gemma cup?
গেমা কাপ কাকে বলে?

2. Answer *any two* questions from the following: 5×2=10

যে কোনো দুটি প্রশ্নের উত্তর দাও ঃ

(a) What is Zygospore? How zygospore is formed in Rhizopus sp.? 2+3=5
জাইগোস্পোর কী? রাইজোপাসের কীভাবে জাইগোস্পোর তৈরি হয়?

(b) Describe the morphological and anatomical features of *Marchantia* gametophyte. 2+3=5
Marchantia-র লিঙ্গধর উদ্ভিদের বাহ্যিক ও অভ্যন্তরীণ অঙ্গসংস্থান বর্ণনা করো।

(c) With suitable labelled diagram describe the structure of TMV. 2+3=5
চিহ্নিত চিত্রসহযোগে TMV-এর গঠন বর্ণনা করো।

(d) Briefly describe the internal structure of *Pinus* needle. 5
Pinus-এর সূচ্যাকার পত্রের অন্তর্গঠনের সংক্ষিপ্ত বর্ণনা দাও।

3. Answer *any one* question from the following: 10×1=10
যে কোনো একটি প্রশ্নের উত্তর দাও ঃ

(a) Draw and describe the sexual reproduction of macrandrous type *Oedogonium*. What do you mean by nannandrous type of *Oedogonium*? 8+2=10
চিত্রসহ *Oedogonium*-এর ম্যাকরানড্রাস প্রকৃতির যৌন জননের বর্ণনা দাও। ন্যানানড্রাস প্রকৃতির *Oedogonium* বলতে কী বোঝো?

(b) Draw and describe the internal structure of *Selaginella* stem. Comment on seed habit of *Selaginella*. 3+3+4=10
Selaginella-র কান্ডের অন্তর্গঠনের সচিত্র বর্ণনা দাও। *Selaginella*-র বীজ বৈশিষ্ট্য সম্পর্কে তোমার মতামত দাও।

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SP-I/Botany-101C-1A/19

B.Sc. 1st Semester (Programme) Examination, 2019-20

BOTANY

Course ID : 11318 **Course Code : SPBOT-101C-1A**

Course Title : Plant Biodiversity Microbes, Algae, Fungi, Archegoniate

Time: 1 Hour 15 Minutes **Full Marks: 25**

The figures in the right hand side margin indicate marks.

Candidates are required to give their answers in their own words as far as practicable.

দক্ষিণ প্রান্তস্থ সংখ্যাগুলি প্রশ্নের পূর্ণমানের নির্দেশক।

পরীক্ষার্থীদের যথাসম্ভব নিজের ভাষায় উত্তর দিতে হবে।

1. Answer *any five* questions of the following: 1×5=5

নিম্নলিখিত *যে কোনো পাঁচটি* প্রশ্নের উত্তর দাও ঃ

(a) Example one ssRNA & dsRNA virus respectively.
ssRNA ও dsRNA ভাইরাসের একটি করে উদাহরণ দাও।

(b) What is 'diatomite'?
'ডায়াটমাইট' কাকে বলে?

(c) Name one algae with 'triphasic' lifecycle.
ট্রাইফেসিক জীবনচক্র দেখা যায় এমন একটি শৈবালের নাম লেখো।

(d) Name the cell wall materials of fungus.
ছত্রাকের কোষপ্রাচীরের উপাদানগুলির নাম লেখো।

(e) State the full form of VAM.
VAM-এর পুরো কথাটি লেখো।

(f) What is 'peat moss'?
'পিট মস' কাকে বলে?

(g) Where do you find 'carinal canal'?
ক্যারিনাল ক্যানাল কোথায় দেখা যায়?

(h) Where do you find coralloid root?
কোরালয়েড মূল কোথায় দেখা যায়?

2. Answer *any two* questions from the following: 5×2=10

নিম্নলিখিত *যে কোনো দুটি* প্রশ্নের উত্তর দাও ঃ

(a) Describe lysogenic cycle with proper diagram.
উপযুক্ত চিত্রসহ লাইসোজেনিক চক্র বর্ণনা করো।

(b) Describe the formation of ascus & ascospores with diagram in *Penicillium*.
চিত্রসহ *Penicillium*-এর অ্যাসকাস ও অ্যাসকোরেণু উৎপাদন বর্ণনা করো।

(c) Describe the internal structures of sporophyte of *Funaria* with proper sketches.
উপযুক্ত চিত্রসহ *Funaria*-র রেণুধর উদ্ভিদের অন্তর্গঠন বর্ণনা করো।

(d) Describe the economic importance of Gymnosperms.
জিম্নোস্পার্মের অর্থকরী গুরুত্ব আলোচনা করো।

3. Answer *any one* question from the following: 10×1=10
নিম্নলিখিত *যে কোনো একটি* প্রশ্নের উত্তর দাও ঃ

(a) What do you mean by nannandrous filament? Describe the life cycle of nannandrous species of *Oedogonium* with proper diagram. 2+8=10
খর্বপুংসূত্র বলতে কী বোঝো? উপযুক্ত চিত্রসহ *Oedogonium*-এর খর্বপুংসূত্র প্রজাতীর জীবনচক্র বর্ণনা করো।

(b) Describe with diagram the stem anatomy of *Equisetum*. What do you mean by incipient heterospory? 8+2=10
চিত্রসহ Equisetum-এর কান্ডের অন্তর্গঠন বর্ণনা করো। ইনসিপিয়েন্ট হেটেরোস্পোরী বলতে কী বোঝো?

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SH-I/Botany-101C-1/19

B.Sc. 1st Semester (Honours) Examination, 2019-20

BOTANY

Course ID : 11311 **Course Code : SHBOT-101C-1**

Course Title: Phycology and Microbiology

Time: 2 Hours **Full Marks: 25**

The figures in the right hand side margin indicate marks.

Candidates are required to give their answers in their own words as far as practicable.

1. Answer *any five* of the following: 1×5=5

(a) What is coenobium?

(b) Name one antibiotic producing bacteria.

(c) Define vaccine.

(d) Define Akinete.

(e) What are viroids?

(f) What do you mean by Synzoospore?

(g) What do you mean by Spheroplasts?

(h) What is auxospore?

2. Answer *any two* of the following: 5×2=10

(a) Classify virus according to Bultimore. 5

(b) Briefly discuss regarding the economic importance of Bacteria in Agriculture and fermentation. 2½+2½=5

(c) What are the main pigments of Phaeophyta? Draw the life cycle of *Ectocarpus*. What is physiological anisogamy? 1+3+1=5

(d) What is Chrysolaminarin? Describe the sexual cycle of *Vaucheria*. 1+4=5

3. Answer *any one* of the following: 10×1=10

(a) Distinguish Macrandrous species of *Oedogonium* from Nannandrous species. Describe the sexual cycle of *Chlamydomonas*. 2+8=10

(b) What is Prophage? Describe the steps of Lytic cycle of a mature Virion with suitable diagram. 2+6+2=10

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