

Department of English
Deva Matha College, Kuravilangad
Question Paper For Course Outcome Measurement
BA English Language and Literature
EN1CCT01 Fine Tune Your English
Semester 1

- 1.A. He pulled the string tight. B. She is a nice girl.(Identify the kind of adjectives)
2 Marks (CO 1)
 2. Here comes the C.I and a few policemen (Correct the sentence))
2 Marks (CO 1)
 - 3.How are indefinite articles different from the definite article? 5 marks (CO 2)
 4. Frame five exclamatory questions5 marks (CO 2)
- Fill in the blanks using the appropriate form of the verbs given.
- 5.He -----the room and -----down in the chair(cross, sit) 2 marks (CO 3)
 6. A bus -----him down as he -----the road. (knock, cross) 2 marks (CO 3)
 - 7.Write an essay stating your views on the stray dog menace. 15 marks (CO 4)
 8. Write a letter to a friend describing a recent exciting cricket match in which your side won. 15 marks (CO 4)
 9. Frame a telephone conversation between you and a friend of yours about your career interests. 5 marks (CO 5)
 10. Frame a conversation between you and your class teacher about conducting a study tour. 5 marks (CO 5)



DEPARTMENT OF MALAYALAM, DEVAMATHA COLLEGE KURAVILANGAD

QUESTION PAPER FOR COURSE OUTCOME MEASUREMENT

B.A. MALAYALAM

ML1CCTO1- കമാസാഹിത്യം.

SEMESTER I

Time: 3 Hours

Max.marks:120

- 1.മലയാളത്തിലെ ആദ്യകാലകഥകൾ പരിചയപ്പെടുത്തുക.10 Marks (CO1)
- 2.മലയാളത്തിലെ ആദ്യകാലകഥകളുടെ സവിശേഷതകൾ വിവരിക്കുക.10 Marks (CO1)
- 3.ഇന്ദുലേഖ എന്ന നോവലിനെ പരിചയപ്പെടുത്തുക.10 Marks (CO2)
- 4.കഥ നോവൽ എന്നീ രണ്ട് സാഹിത്യരൂപങ്ങൾ തമ്മിലുള്ള വ്യത്യാസങ്ങൾ വിശദീകരിക്കുക.10 Marks (CO2)
- 5.പ്രധാന പരിസ്ഥിതികഥകൾ പരിചയപ്പെടുത്തുക.15 Marks (CO3)
- 6.സാരാ ജോസഫ്, സിതാര എസ്, ഇന്ദുമേനോൻ എന്നിവരുടെ കഥകളിലെ സാമ്യവ്യത്യാസങ്ങൾ വിവരിക്കുക.15 Marks (CO3)
- 7.ആടുജീവിതം എന്ന നോവലിലെ ആശയം വിശദീകരിക്കുക. 10 Marks (CO4)
- 8.തിരുത്ത് എന്ന കഥയുടെ പ്രത്യേകതകൾ വിവരിക്കുക. 10 Marks (CO4)
- 9.‘വിശപ്പിന്റെ അടയാളപ്പെടുത്തലാണ് ബിരിയാണി’ ഈ അഭിപ്രായത്തോട് നിങ്ങൾ യോജിക്കുന്നുണ്ടോ? സ്വാഭിപ്രായം ക്രോഡീകരിക്കുക. 15 Marks (CO5)
- 10.മോദസ്ഥിരനായത്ത് വസിപ്പൂ മലപ്പോലെ എന്ന കഥയുടെ സാമൂഹികപ്രാധാന്യം വിശദീകരിക്കുക. 15 Marks (CO5)



DEPARTMENT OF ENGLISH, DEVAMATHA COLLEGE, KURAVILANGAD

QUESTION PAPER FOR COURSE OUTCOME MEASUREMENT

B.A. ENGLISH LANGUAGE AND LITERATURE

EN1CCT02 – PEARLS FROM THE DEEP

SEMESTER 1

1. Discuss the animal imagery in 'Jaguar' 5 marks (CO 3)
2. Analyze the way in which the Franco-Prussian war affects Paris? 5 marks (CO 3)
3. Describe what the knight sees in his dreams at the Elfin Grot?5 marks (CO 1)
4. Discuss the speciality of the pier-glass?5 marks (CO 4)
5. Analyze the loneliness felt by Mrs. Wright.5 marks (CO 2)
6. Explain the significance of the bird in the play 'Trifles'?5 marks (CO 1)
7. Describe the appearance of the refugee children in Achebe's poem?5 marks (CO 4)
8. Explain how the old man sees the sea unlike other rich fishermen?5 marks (CO 2)



DEVA MATHA COLLEGE, KURAVILANGAD
DEPARTMENT OF BOTANY
QUESTION PAPER FOR COURSE OUTCOME MEASUREMENT
COMPLEMENTARY COURSE FOR B. Sc. ZOOLOGY – MODEL –I

**SEMESTER 1 (COMPLEMENTARY COURSE 1) - CRYPTOGRAMS, GYMNOSPERMS AND
PLANT PATHOLOGY (BO1CMT01)**

Total Marks - 30

1. Enumerate the general characters of cryptogams. – CO1
2. Tabulate the different classes of Algae proposed by F. E. Fritsch. – CO1
3. Summarise the differences in reproductive characters of cryptogams and Gymnosperms. – CO2
4. Identify the characters of bryophytes to consider them as “amphibians of plant kingdom”. – CO2
5. Prepare the list of common plant diseases based on its symptoms. – CO3
6. Write down the role of fungi as decomposer of organic matter. – CO3 (6 x 3 = 18 Marks)
7. Explain the use of lichens as bio-indicators. – CO4
8. Compare the economic value of fungi and other cryptogams in food industry . – CO4 (2 x 6 = 12 Marks)



DEVA MATHA COLLEGE, KURAVILANGAD
DEPARTMENT OF BOTANY
QUESTION PAPER FOR COURSE OUTCOME MEASUREMENT
B. Sc. BOTANY – MODEL –I

SEMESTER 1 (CORE) - **Methodology of Science and an Introduction to Botany** (BO1CRT01)

Total Marks - 30

1. Define science and scientific method. – CO1
2. Recognise the different steps of scientific method. – CO1
3. Classify algae on the basis of pigmentation and thallus organization. – CO2
4. Identify Algae, Fungi, Lichens, Bryophytes, Pteridophytes and Gymnosperms on the basis of vegetative and sexual characters. – CO2
5. Trace the different events in the different era of geological time scale. – CO3
6. Choose the most acceptable theory of evolution of life on earth and illustrate the major evidences. – CO3 (6 x 3 = 18 Marks)
7. Distinguish the botanic skills to study the internal organization of plant body. – CO4
8. Separate TS, TLS and RLS based on the application. – CO4 (2 x 6 = 12 Marks)



Department of English (SF)
Deva Matha College, Kuravilangad
Question Paper For Course Outcome Measurement
BA Triple Main
EN2CCT03 Issues That Matter
Semester 2

1. Which three important areas of the value of biodiversity has Leakey identified?
2 Marks (CO 1)
2. What did the mysterious bird reveal to Hagar? 2 Marks (CO 1)
3. What distinction does the narrator draw between 'war' and 'hostility'?
5 marks (CO 2)
4. How has the tree grown to its present status? 5 marks (CO 2)
5. Narrate the experience of Zitkala-sa on her trip to her home in the reservation.
10 marks (CO 3)
6. Elaborate on 'the old prison' as a metaphor for human suffering
10 marks (CO 3)
7. Describe how Sentila become a pot maker against the expectations of her mother.
10 marks (CO 3)
8. Bring out the satire in the story 'The Censors' by drawing examples from the situations in the story.
10 marks (CO 3)
9. Evaluate the irony in the line 'haven't I always reported the truth?...Burn me'
5 marks (CO 4)
10. Evaluate the grandfather's attitude when Bapu Patil humiliated him.
5 marks (CO 4)



DEPARTMENT OF MALAYALAM, DEVAMATHA COLLEGE KURAVILANGAD

QUESTION PAPER FOR COURSE OUTCOME MEASUREMENT

B.A. MALAYALAM

ML2CCT02- കവിത

SEMESTER II

Time: 3 Hours

Max.marks:120

- 1.മലയാളകവിതയുടെ വികാസപരിണാമങ്ങൾ വിവരിക്കുക.10 Marks (CO1)
- 2.കുരുക്ഷേത്രം എന്ന കവിതയ്ക്ക് മലയാളകവിതയിലുള്ള പ്രാധാന്യം വിവരിക്കുക.10 Marks (CO1)
- 3.ആധുനിക കവിതകളുടെ സവിശേഷതകൾ വിശദീകരിക്കുക.15 Marks (CO2)
- 4.മലയാളത്തിലെ ഉത്തരാധുനിക പ്രസ്ഥാനത്തെ സ്വാധീനിച്ച സാഹചര്യങ്ങൾ വ്യക്തമാക്കുക.15 Marks (CO2)
- 5.മലയാള കവിതയിലെ ലിംഗസമത്വംഎന്ന വിഷയത്തിൽ ഉപന്യസിക്കുക. 10 Marks (CO3)
- 6.ഉത്തരാധുനിക കവിതകൾ പെണ്ണനുഭവങ്ങളെ എപ്രകാരം അടയാളപ്പെടുത്തുന്നുവെന്ന് വിവരിക്കുക.10 Marks (CO3)
- 7.കാലഘട്ടത്തിന്റെ പൊതുപ്രവണതകൾ കവിതകളിൽ പ്രകടമാകുന്നതെപ്രകാരമെന്ന് വിവരിക്കുക. 10 Marks (CO4)
- 8.സമകാലിക സാഹചര്യങ്ങൾ കവിതകൾക്ക് വിഷയമാകാറുണ്ടോ?വിമർശനാത്മകമായി വിലയിരുത്തുക.10 Marks (CO4)
- 9.വൈലോപ്പിള്ളിയുടെ മാമ്പഴം എന്ന കവിതയുടെ സവിശേഷതകൾ വിവരിക്കുക.15 Marks (CO5)
- 10.കവിതയും സമൂഹവും എന്ന വിഷയം വിലയിരുത്തുക.15 Marks (CO5)





DEVA MATHA COLLEGE, KURAVILANGAD
DEPARTMENT OF BOTANY
QUESTION PAPER FOR COURSE OUTCOME MEASUREMENT
COMPLEMENTARY COURSE FOR B. Sc. ZOOLOGY – MODEL –I

SEMESTER 2 (COMPLEMENTARY COURSE 2) -PLANT PHYSIOLOGY (BO2CMT02)

Total Marks - 30

1. Define DP, DPD and OP. – CO1
2. Quote any five significances of transpiration in plants. – CO1
3. Distinguish the different roles of macro elements NPK in plants. – CO2
4. Construct a chart showing the deficiency symptoms of microelements in plants. – CO2
5. Show the different roles cytokinins, gibberellins and auxins in plant growth. – CO3
6. Make a sketch of the C3 cycle. – CO3 (6 x 3 = 18 Marks)

7. Distinguish apoplast and symplast movement of elements in plants. – CO4
8. Select and explain a mechanism in plants which uses water more efficiently. – CO4 (2 x 6 = 12 Marks)



DEVA MATHA COLLEGE, KURAVILANGAD
DEPARTMENT OF BOTANY
QUESTION PAPER FOR COURSE OUTCOME MEASUREMENT
B. Sc. BOTANY – MODEL –I

SEMESTER 2 (CORE) - **Microbiology, Mycology and Plant Pathology** (BO2CRT02)

Total Marks - 30

1. Tabulate the economic importance of Bacteria. – CO1
2. Describe the lytic and lysogenic cycle of virus multiplication. – CO1
3. Explain the common characters of Bryophytes. – CO2
4. Identify TMV and Lambda-phage on the basis of general characters. – CO2
5. Show any one of the cultivation practice of Bacteria for commercial production. – CO3
6. Construct a chart on different identification techniques of bacteria. – CO3 (6 x 3 = 18 Marks)

7. Categorise the different uses of bacteria in daily life. – CO4
8. Evaluate the importance of bio-pesticides over synthetic pesticides. – CO4 (2 x 6 = 12 Marks)



DEVA MATHA COLLEGE, KURAVILANGAD
DEPARTMENT OF BOTANY
QUESTION PAPER FOR COURSE OUTCOME MEASUREMENT
COMPLEMENTARY COURSE FOR B. Sc. ZOOLOGY – MODEL –I

SEMESTER II: COMPLEMENTARY PRACTICAL - SEMESTER I AND II (COMBINED)

CRYPTOGAMS, GYMNOSPERMS AND PLANT PATHOLOGY
& PLANT PHYSIOLOGY (BO2CMP01)

Total Marks - 30

1. Prepare stained micropreparations of *Riccia* thallus and Leaflet of *Cycas* mount in glycerine and prepare a comparison chart. – CO3
2. Choose and experiment to demonstrate the evolution of O₂ during photosynthesis. – CO3
3. Compare the thallus of *Chladophora* and *Polysiphonia* and analyse differences. – CO4
4. Categorize the specimens provided into different plant groups based on morphological and anatomical features (one each from algae, fungi and bryophyte). – CO4
5. Compare the rate of transpiration in the presence and absence of light with the plant materials given. – CO5
6. Predict the causative organism and disease seen in the plant specimens given, comparing the symptoms. – CO5

(6 x 5 = 30 Marks)



DEPARTMENT OF ENGLISH, DEVAMATHA COLLEGE, KURAVILANGAD

QUESTION PAPER FOR COURSE OUTCOME MEASUREMENT

B.A. ENGLISH LANGUAGE AND LITERATURE

EN2CCT04 – SAVOURING THE CLASSICS

SEMESTER 2

1. Explain the peculiarities of John Vincent Moon? 5 marks (CO 3)
2. Discuss the animal symbolism in Canto I of *Inferno*. 5 marks (CO 3)
3. Analyze the title of the poem ‘On His Blindness’? 5 marks (CO 2)
4. Discuss the surgeon’s thoughts about the lady in the black veil? 5 marks (CO 4)
5. Comment on the friendship between Bingley and Darcy. 5 marks (CO 2)
6. Briefly describe the two adventures of Don Quixote. 5 marks (CO 1)
7. Discuss Telemachus’ reunion with his father. 5 marks (CO 4)
8. “Lovely is youth, but quickly is it flown.” Explain. 5 marks (CO 1)



DEPARTMENT OF ENGLISH, DEVAMATHA COLLEGE, KURAVILANGAD
QUESTION PAPER FOR COURSE OUTCOME MEASUREMENT
B.A. ENGLISH LANGUAGE AND LITERATURE
EN3CCT05– LITERATURE AND/AS IDENTITY
SEMESTER 3

1. Analyze the theme of the novel *The Dark Holds No Terrors*? 5 marks (CO 3)
2. Describe the power of language according to Amy Tan? 5 marks(CO 3)
3. Analyze the poem ‘At the Lahore Karhai’ in the light of geographical and cultural dislocation.
5 marks (CO 4)
4. Discuss the specialty of Mussoorie as described by the protagonist? 5 marks (CO 4)
5. Describe the entry of Goddess Kali. 5 marks (CO 2)
6. Comment on why Dadima reprimands the narrator for troubling a peacock that landed on their terrace? 5 marks (CO 1)
7. Explain what the author learns about motherhood from others? 5 marks (CO 2)
8. List the signs that foretold the black moments of Kamur? 5 marks (CO 1)



DEPARTMENT OF MALAYALAM

DEVA MATHA COLLEGE KURAVILANGAD

QUESTION PAPER FOR COURSE OUTCOME MEASUREMENT

B.A MALAYALAM

M L 3 CCT03 – ദൃശ്യകലാസാഹിത്യം

SEMESTER III

Time : 3 Hours

Max.Marks : 150

- 1.ഭാരതത്തിന്റെ നാടകപാരമ്പര്യത്തെക്കുറിച്ച് വിവരിക്കുക 20 Marks (CO 1)
2. മലയാളത്തിലെ സംസ്കൃതനാടകവിവർത്തനങ്ങളെക്കുറിച്ച് എഴുതുക 10 Marks (CO 1)
- 3.നളചരിതം ആട്ടക്കഥയുടെ ഭാഷാപരവും സാഹിത്യപരവുമായ സവിശേഷതകൾ ചർച്ച ചെയ്യുക. 20 Marks (CO 2)
- 4.കല്യാണസൗഗന്ധകത്തെ മുൻനിർത്തി കുഞ്ചൻനമ്പ്യാരുടെ തുള്ളലുകളുടെ സവിശേഷതകൾ ചർച്ച ചെയ്യുക. 20 Marks (CO 2)
- 5.മലയാളനാടകവേദിക്ക് സി.ജെ തോമസ് നൽകിയ സംഭാവനകൾ വിവരിക്കുക 10 Marks (CO 3)
- 6.നിലനിൽക്കുന്ന നിയമവ്യവസ്ഥയെ ക്രൈം നാടകം പ്രശ്നവൽക്കരിക്കുന്നുണ്ടോയെന്ന് വിലയിരുത്തുക 10 Marks (CO 3)
7. അൻവറിന്റെ ഉസ്താദ് ഹോട്ടലിൽ രുചിയുടെ രാഷ്ട്രീയമുണ്ടോയെന്ന് പരിശോധിക്കുക. 10 Marks (CO 4)
8. മലയാളത്തിലെ സ്വതന്ത്രസിനിമകളെക്കുറിച്ച് ചർച്ച ചെയ്യുക. 20 Marks (CO 4)
9. വടക്കൻപാട്ടുസിനിമകളുടെവസാംസ്കാരികരാഷ്ട്രീയംനെ തിരിച്ചറിയുക 10 Marks (CO 5)
10. മലയാളത്തിലെ പഴശ്ശിരാജസിനിമകളെക്കുറിച്ച് വിവരിക്കുക 20 Marks (CO 5)



DEVA MATHA COLLEGE, KURAVILANGAD
DEPARTMENT OF BOTANY
QUESTION PAPER FOR COURSE OUTCOME MEASUREMENT
COMPLEMENTARY COURSE FOR B. Sc. ZOOLOGY – MODEL –I

**SEMESTER 3 (COMPLEMENTARY COURSE 3) - ANGIOSPERM TAXONOMY &
ECONOMIC BOTANY (BO3CMT03)**

Total Marks - 30

1. Tabulate the difference between natural, artificial and phylogenetic systems of classifications. – CO1
2. Enumerate the characters that support the theory that “flower is modified shoot”. – CO1
3. Distinguish dry dehiscent and dry indehiscent fruits with examples. – CO2
4. Discuss the advantages of chemotaxonomy and cytotoxicity in elucidating the problems of plant taxonomy. – CO2
5. Distinguish different series under polypetalae identifying their major diagnostic characters. – CO3
6. Illustrate the diagnostic features of annonaceae and rubiaceae using floral diagram and floral formula. – CO3 (6 x 3 = 18 Marks)
7. Select two angiosperm families with zygomorphic flowers and point out main differences. – CO4
8. Categorize economically important products from different angiosperm families you studied. – CO4 (2 x 6 = 12 Marks)



DEVA MATHA COLLEGE, KURAVILANGAD
DEPARTMENT OF BOTANY
QUESTION PAPER FOR COURSE OUTCOME MEASUREMENT
COMPLEMENTARY COURSE FOR B. Sc. ZOOLOGY – MODEL –I

**SEMESTER 3 (COMPLEMENTARY COURSE 3) - ANGIOSPERM TAXONOMY &
ECONOMIC BOTANY (BO3CMT03)**

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DEVA MATHA COLLEGE, KURAVILANGAD
DEPARTMENT OF BOTANY
QUESTION PAPER FOR COURSE OUTCOME MEASUREMENT
B. Sc. BOTANY – MODEL –I

SEMESTER 3 (CORE) - **Phycology and Bryology (BO3CRT03)**

Total Marks - 30

1. Tabulate the range of thallus structure and pigments in Algae. – CO1
2. Enumerate the general characters that separate bryophytes from other plant groups. – CO1
3. Explain the reason for saying Bryophytes as “amphibians of the plant kingdom”. – CO2
4. Distinguish Cyanophyceae, Chlorophyceae and Xanthophyceae. – CO2
5. Show any one of the cultivation practice of algae for commercial production. – CO3
6. Construct a chart on different preservation techniques of algae. – CO3 (6 x 3 = 18 Marks)

7. Categorise the different uses of algae in daily life. – CO4
8. Analyse the ecological importance of bryophytes. – CO4 (2 x 6 = 12 Marks)



DEPARTMENT OF ENGLISH, DEVAMATHA COLLEGE, KURAVILANGAD
QUESTION PAPER FOR COURSE OUTCOME MEASUREMENT
B.A. ENGLISH LANGUAGE AND LITERATURE
EN4CCT06– ILLUMINATIONS

SEMESTER 4

1. Describe the reactions of Roucolle and Pole after their release 5 marks (CO 3)
2. Explain how the nightingale makes a red rose from the withered rose tree 5 marks (CO 3)
3. Bring out the words of suffering in the poem *Invictus*. 5 marks (CO 4)
4. Describe what happens to the boat when it loses its rudder. 5 marks (CO 4)
5. Comment on whether a child and professional reader approach the text in the same way. 5 marks (CO 2)
6. List Keller's plans for the third day. 5 marks (CO 1)
7. Compare the reaction of the rich and poor when the Sterling Exchange falls? 5 marks (CO 2)
8. Explain what Rowling means by quixotic or paradoxical choice 5 marks (CO 1)
9. Analyze the advice given by Luz Long to Owens when he failed in the trials. 5 marks (CO 5)
10. Comment on Gibran's opinion about a divided house. 5 marks (CO 5)



DEPARTMENT OF MALAYALAM, DEVAMATHA COLLEGE KURAVILANGAD

QUESTION PAPER FOR COURSE OUTCOME MEASUREMENT

B.A. MALAYALAM

Commoncourse II

ML4CCT04- മലയാളഗദ്യരചനകൾ

SEMESTER 4

Time: 3 Hours

Max.marks:200

1. അടുക്കള വീണ്ടെടുക്കപ്പെടേണ്ട ലോകമാണെന്ന നിഗമനത്തിന്റെ സാംഗത്യമെന്ത്? വിവരിക്കുക. 20 Marks (CO1)
2. അരിസ്റ്റോട്ടിലിന്റെ ദൃഷ്ടിയിൽ ഏറ്റവും ഉന്നതമായ കല ഏത്? വിശദമാക്കുക. 20 Marks (CO1)
3. കോളേജ് വിദ്യാഭ്യാസ കാലഘട്ടം എം.ടി.വാസുദേവൻ നായർ പ്രഭാഷണത്തിൽ ഓർമ്മിച്ചെടുക്കുന്ന തെങ്ങനെ? വിവരിക്കുക. 20 Marks (CO2)
4. മനുഷ്യപുരീകങ്ങളുടെ പ്രധാന ധർമ്മങ്ങൾ പരിചയപ്പെടുത്തുക. 20 Marks (CO2)
5. കാരൂർ കഥകളിലെ ഹാസ്യരസത്തെക്കുറിച്ച് എം.എസ് കുമാരൻ നായർ അഭിപ്രായം വിലയിരുത്തുക. 20 Marks (CO3)
6. സംസ്കൃത ഭാഷയുമായി മൊഹാക് ഭാഷയ്ക്കുള്ള സാമ്യങ്ങൾ പരിശോധിക്കുക. 20 Marks (CO3)
7. സിയാറ്റിൽ മൂപ്പന്റെ പ്രസംഗത്തിൽ നിറഞ്ഞുനിൽക്കുന്ന പാരിസ്ഥിതിക ദർശനം വിമർശനാത്മകമായി വിലയിരുത്തുക. 20 Marks (CO4)
8. കാരൂർകഥകളുടെ രൂചിഭേദങ്ങളെപ്പറ്റി ബി.സരസ്വതി പ്രകടിപ്പിക്കുന്ന അഭിപ്രായങ്ങൾ ക്രോഡീകരിക്കുക. 20 Marks (CO4)
9. ഇരട്ടമൊഴിത്തം എന്നാലെന്തെന്ന് മലയാളഭാഷയെ മുൻനിർത്തി പരിശോധിക്കുക. 20 Marks (CO5)



10.മലയാള പ്രസാധന ചരിത്രത്തിൽ ഈശ്വരപിള്ള
വിചാരിപ്പുകാർക്കുള്ള സ്ഥാനം നിർണ്ണയിക്കപ്പെടുന്നത്
എപ്രകാരമെന്ന് വിശദമാക്കുക.20 Marks (CO5)



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DEPARTMENT OF BOTANY
QUESTION PAPER FOR COURSE OUTCOME MEASUREMENT
COMPLEMENTARY COURSE FOR B. Sc. ZOOLOGY – MODEL –I

SEMESTER 4 (COMPLEMENTARY COURSE 4) - ANATOMY & APPLIED BOTANY
(BO4CMT04)

Total Marks - 30

9. Match the difference between primary structure of dicot and monocot roots. – CO1
10. Enumerate anatomical features of stem and leaves in monocots. – CO1
11. Identify the anatomical adaptations of xerophytes to suit desert habitat. – CO2
12. Associate the wood anatomy in calculating the age of a tree. – CO2
13. Choose a suitable artificial method of propagation used for multiplication of tapioca. – CO3
14. Prepare a chart showing the advantages of anomalous secondary thickening in stems you studied. – CO3 (6 x 3 = 18 Marks)

15. Divide *Vanda*, *Hydrilla* and *Nerium* into different categories of plants based on ecological adaptations. – CO4
16. Select and compare different methods of budding. – CO4 (2 x 6 = 12 Marks)



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B. Sc. BOTANY – MODEL –I

SEMESTER 4 (CORE) - **Pteridology, Gymnosperms and Paleobotany (BO4CRT04)**

Total Marks - 30

1. Quote the general events in the evolution of Gymnosperms. – CO1
2. Enumerate the general characters that separate Pteridophytes from Gymnosperms. – CO1
3. Identify the general features of *Psilotum* to consider it as a Pteridophyte. – CO2
4. Distinguish Gnetopsida from Coniferopsida. – CO2
5. Show the significance of Paleobotany in elucidating the evolution of plants. – CO3
6. Prepare a list of compounds from gymnosperms which are economically valuable. – CO3
(6 x 3 = 18 Marks)

7. Compare the economic value of Pteridophytes and Gymnosperms in medicine. – CO4
8. Analyse the ecological importance of Gymnosperms. – CO4
(2 x 6 = 12 Marks)



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COMPLEMENTARY COURSE FOR B. Sc. ZOOLOGY – MODEL –I

SEMESTER IV: COMPLEMENTARY PRACTICAL - SEMESTER III AND IV
(COMBINED)

ANGIOSPERM TAXONOMY, ECONOMIC BOTANY,
ANATOMY & APPLIED BOTANY (BO4CMP02)

Total Marks - 30

1. Apply the morphological and reproductive characters and determine the family of the given angiosperm specimen. – CO3
 2. Record the anatomical features and make a sketch of the anomalous features of dicot stem given. – CO3
 3. Classify the different economic products into different categories based on morphological characters. – CO4
 4. Illustrate the diagnostic features of the given flower –floral diagram, floral formula, and flower LS. – CO4
 5. Compare the two specimens given and assign to different ecological groups. – CO5
 6. Select a suitable budding procedure and carry out budding for the specimen given. – CO5
- (6 x 5 = 30 Marks)



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B. Sc. BOTANY – MODEL –I

SEMESTER 5 (CORE) - ANATOMY, REPRODUCTIVE BOTANY AND
MICROTECHNIQUE (BO5CRT05)

Total Marks - 30

1. Describe the terms primary and secondary growth. – CO1
2. State different types of vascular bundles and label their arrangements in sketches. – CO1 & CO3
3. Compare anomalous and normal secondary thickenings in dicot stems. – CO2
4. Illustrate and explain how the wood anatomical characters can be used to elucidate the age of trees? – CO2
5. Sketch illustrations of different types of embryo sac. – CO3
6. Prepare a list of external and internal secretory tissues in plants and draw diagrams. – CO3
7. Compare killing and fixing. Classify different agents used for killing and fixing. – CO4
8. Categorize the following compounds based on their purpose in microtechnique- hematoxylin, neutral red and DPX. – CO4
9. Predict the type of wood given, based on anatomical features – Teak, Pinus and Indian Coral tree. – CO5.
(9 x 2 = 18 Marks)

10. Write down the role of spring wood and autumn wood in calculating age of trees. – CO6
11. Design the different steps involved in making serial section of *Ulva* thallus. – CO6
(2 x 6 = 12 Marks)



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B. Sc. BOTANY – MODEL –I

SEMESTER 5 (CORE) - ENVIRONMENTAL SCIENCE AND HUMAN RIGHTS (BO5CRT08)

Total Marks - 30

1. Describe carbon sequestration. – CO1
2. Define the terms competition, parasitism, predation, commensalism, and protocooperation. – CO1
3. List the various environmental laws in India. – CO2
4. Recognize the major organizations involved in environment protection in India. – CO2
5. Discuss the various factors leading to Environmental degradation. – {1, 3, 7, 5, 9}. – CO3
6. Illustrate the impact of different types pollution on the Environment. – CO3 (6 x 3 = 18 Marks)
7. Cite the provisions under the Constitution of India dealing with human and environmental rights. – CO4
8. Point out conservation issues of Western Ghats based on Madhav Gadgil committee report. – CO4 (2 x 6 = 12 Marks)



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B. Sc. BOTANY – MODEL –I

SEMESTER 5 (OPEN COURSE) – AGRI-BASED MICROENTERPRISES (BO5OPT01)

Total Marks - 30

1. Describe the advantages of organic manures over synthetic fertilizers. – CO1
2. Select different types of biopesticides and preparation methods. – CO1.
3. Compare different types of seeds with illustration. – CO2
4. Discuss general methods used in sustainable agriculture. – CO2
5. Show the importance of different types of gardens studied. – CO3
6. Establish ornamental garden, nursery, mushroom cultivation and tissue culture unit. – CO3
7. Explain the principles of food preservation. – CO4
8. Differentiate the cultivation practices of mushrooms. – CO4 (9 x 2 = 18 Marks)
9. Categorize the business opportunities in organic farming field. – CO5
10. Design the layout of a tissue culture laboratory. – CO5

(2 x 6 = 12 Marks)



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B. Sc. BOTANY – MODEL –I

SEMESTER 5 (CORE) – PLANT PHYSIOLOGY AND BIOCHEMISTRY (BO5CRT07)

Total Marks - 30

1. Describe the osmosis, exosmosis and endosmosis. – CO1
2. State different theories of water absorption through xylem. – CO1.
3. Compare anomalous and normal secondary thickenings in dicot stems. – CO2
4. Illustrate and explain how the wood anatomical characters can be used to elucidate the age of trees? – CO2
5. Sketch illustrations of different types of embryosac. – CO3
6. Prepare a list of external and internal secretory tissues in plants and draw diagrams. – CO3
7. Compare killing and fixing. Classify different agents used for killing and fixing. – CO4
8. Categorize the following compounds based on their purpose in microtechnique- hematoxylin, neutral red and DPX. – CO4
(9 x 2 = 18 Marks)
9. Write down the role of spring wood and autumn wood in calculating age of trees. – CO5
10. Design the different steps involved in making serial section of *Ulva* thallus. – CO5
(2 x 6 = 12 Marks)



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B. Sc. BOTANY – MODEL –I

**SEMESTER 5 (CORE) - RESEARCH METHODOLOGY, BIOPHYSICS AND
BIOSTATISTICS (BO5CRT06)**

Total Marks - 30

1. Enumerate the different steps in scientific method. – CO1
2. Name the suitable 'MS office suit' for presentation of research report and enumerate reasons. – CO1
3. Identify and summarize the best method you studied to count pollen grains in a solution. – CO2
4. Compare the uses of colorimeter and spectrophotometer. – CO2
5. Calculate the Mean from the following data – {1, 3, 7, 5, 9}. – CO3
6. Construct a percentage pie-chart for the expenditure data given. – CO3

Expenditure/Item	Amount in Rs/-
Rent	4000
Food	5400
Clothing	2800
Savings	400

(6 x 3 = 18 Marks)

7. Prepare a project report on the diversity of leaf morphology. – CO4
8. You grow 20 crystals from a solution and measure the length of each crystal in millimeters. Here is your data: 9, 2, 5, 4, 12, 7, 8, 11, 9, 3, 7, 4, 12, 5, 4, 10, 9, 6, 9, 4. Calculate the sample standard deviation of the length of the crystals. – CO4 (2 x 6 = 12 Marks)



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B. Sc. BOTANY – MODEL –I

SEMESTER 6 (CORE) – ANGIOSPERM MORPHOLOGY, TAXONOMY AND ECONOMIC
BOTANY (BO6CRT11)

Total Marks - 30

1. Describe the terms scorpid and helicoid. – CO1
2. State different types of inflorescence. – CO1
3. Compare the characteristic features of monocots and dicots. – CO2
4. Illustrate and explain how the floral diagram will explain the arrangement of floral parts on pedicel – CO2
5. Sketch illustrations of floral diagram and floral formula of asteraceae. – CO3
6. Prepare a list of floral characters of gamopetalae and draw floral diagrams from each family. – CO3
7. Compare Bentham and Hooker's and artificial system of classifications. – CO4
8. Categorize the following items on the basis of economic importance- carrot, groundnut, teak wood, rubber, tobacco, tea, sugarcane, apple, orange, coconut, jute and coir. – CO4
9. Predict the family of the given plants based on reproductive characters- Basil, jack fruit tree, and mango tree. – CO5.
10. Summarise the role of ethnobotany in modern drug preparation. – CO5. (10 x 2 = 20 Marks)
11. Write down the role of arrangement in plant taxonomy. – CO6
12. Design the different steps involved in preparing floral diagram. – CO6
13. Combine the basic techniques to prepare serial sections. –CO7
14. Design a chart to categorize different economic products from plants. –CO7
(4 x 2 ½ = 10 Marks)



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B. Sc. BOTANY – MODEL –I

SEMESTER 6 (CORE) – **BIOTECHNOLOGY AND BIOINFORMATICS (BO6CRT12)**

Total Marks - 30

1. Discuss the history and current developments in the field of Biotechnology. – CO1
2. Describe the term dedifferentiation and re-differentiation. – CO1
3. Compare protoplast culture and embryo culture. – CO2
4. Illustrate and explain the structure of pBR322 – CO2
5. Prepare the steps involved in the production of artificial seeds. – CO3
6. Prepare a list of different components in a tissue culture media. – CO3 (6 x 2 = 12 Marks)
7. Compare YAC and BAC. Point out the uses of antibiotic resistant markers in tissue culture. – CO4
8. Categorize the following equipments based on their purpose in tissue culture- autoclave, hot air oven and laminar air-flow chamber. – CO4
9. Predict the type of tools for molecular visualization, sequence analysis and sequence alignment – CLUSTAL, RASMOL, BLAST and scoring matrices. – CO5.
10. Differentiate rooted and unrooted tree. – CO5
11. Assess the biological data using molecular tools. – CO6
12. Design the set up of a tissue culture lab. – CO6 (6 x 3 = 18 Marks)



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B. Sc. BOTANY – MODEL –I

SEMESTER 6 (CORE) – CELL AND MOLECULAR BIOLOGY (BO6CRT10)

Total Marks - 30

1. Discuss the molecular basis of origin, continuity and complexity of life forms. – CO1
2. State different types of RNAs. – CO1
3. Compare Salivary gland and Lamp brush chromosomes. – CO2
4. Prepare the karyotype and ideogram of onion – CO2
5. Sketch illustrations of different types of meiosis. – CO3
6. Prepare a list of genetic disorders verses chromosomal abnormalities. – CO3
7. Explain how the experiment of Messelson Stahl proved the DNA replication is semiconservative? – CO4
8. Categorize operons on the basis of negative and positive control mechanisms. – CO4
9. Predict the type of enzymes involved in each step of DNA replication. – CO5.
(9 x 2 = 18 Marks)
10. Construct the complementary DNA chain and the m RNA chain which would be made from this strand for a given single strand of DNA **3'T A C C G A G T A C 5'**.
11. Write the relative proportions of Adenine, Guanine, Thymine and Cytosine would you expect to find in the two DNA samples isolated from two identified species of bacteria, X and Y, in which adenine makes upto 32% and 70% respectively of the total bases. – CO6
(2 x 6 = 12 Marks)



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SEMESTER 6 (CORE) – CELL AND MOLECULAR BIOLOGY (BO6CRT10)

Total Marks - 30

1. Discuss the molecular basis of origin, continuity and complexity of life forms. – CO1
2. State different types of RNAs. – CO1
3. Compare Salivary gland and Lamp brush chromosomes. – CO2
4. Prepare the karyotype and ideogram of onion – CO2
5. Sketch illustrations of different types of meiosis. – CO3
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(9 x 2 = 18 Marks)
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(2 x 6 = 12 Marks)



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B. Sc. BOTANY – MODEL –I

SEMESTER 6 (CORE) – **GENETIC, PLANT BREEDING AND HORTICULTURE**
(BO6CRT09)

Total Marks - 30

1. Describe the terms monohybrid and dihybrid cross. – CO1
2. State different types of epistasis. – CO1
3. Compare test cross and back cross. – CO2
4. Illustrate and explain orientation of alleles in ABO blood group system. – CO2
5. Sketch illustrations of different types of grafting. – CO3
6. Apply various methods for crop improvement in Tapioca. – CO3
7. Compare budding and grafting. – CO4
8. Categorize the job opportunities in horticulture. – CO4
9. Categorise the garden adornments and their purposes. – CO5. (9 x 2 = 18 Marks)
10. Predict the progenies in the following problem- In tomatoes, **Red** fruit colour (**Y**) is dominant over **Yellow** (**y**) and **Purple stem** (**G**) is dominant over **Green** (**g**). What will be the appearance and proportion of the progenies in the following crosses. a. $YyGg \times YyGg$, b. $YyGG \times YYGg$. – CO6
11. Design the checker board and predict the Genotypic and Phenotypic ratios of the F_2 generation in Garden Pea, when a true breeding variety of Tall with Spherical seeds was crossed to another variety of Dwarf Wrinkled. Here the Tall plants (**T**) are dominant over Dwarf (**t**) and Spherical seeds (**W**) are dominant over Wrinkled (**w**). – CO6
(2 x 6 = 12 Marks)



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B. Sc. BOTANY – MODEL –I

SEMESTER 6 (CORE) – **PLANT GENETIC RESOURCE MANAGEMENT (BO6PET02)**

Total Marks - 30

1. Describe Vavilovian concept. – CO1
2. Explain the history and evolution of crop plants giving emphasis on their wild relatives. – CO1
3. Compare the in-situ and ex-situ conservation of crop plants. – CO2
4. Classify seeds on the basis of storage. – CO2
5. Prepare a list of governmental and non-governmental organizations involved in PGRM. – CO3
6. Apply the principle of remote sensing in conservation of endangered plants. – CO3
7. Compare the role of TBGRI and KFRI in PGRM. – CO4
8. Categorize different underutilized plants in a chart. – CO4
9. Choose the cultivation practice for rice, cow pea and rubber. – CO5.
10. Evaluate the importance of common underutilized plants of Kerala state for future food requirements. – CO6

(10 x 3 = 30 Marks)

