



# GOVERNMENT DEGREE COLLEGE, CHODAVARAM

(An ISO 9001 certified Institution & Center for Higher Learning and Leadership, since 1981)

Anakapalle District -531036, Andhra Pradesh, India

Recognized by UGC under 2(f) & (12b), Affiliated to Andhra University, VSP



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## Evaluation of Attainment of COs and POs

The Course Outcomes (COs) are mapped to the Programme Outcomes (POs) and Programme Specific Outcomes (PSOs). COs provide the quantitative measurement of how well the Pos and PSOs are achieved. The achievement of course outcomes is evaluated using the assessment methods. Direct and Indirect assessment methods are used. For the calculation of attainment of COs, 90% of the weightage was given to the Direct method and 10% weightage was given to Indirect-method.

The direct method is based on Continuous Internal Assessment (CIA) and semester-end examinations. 25% weightage was given to CIA and 75% weightage was given to semester-end examinations. CIA consists of Mid-term examinations, Assignments, class activities (Project-Work, Seminars, Group Discussions, Roleplay, Quizzes, and presentations), and out-of-class activities (Clean and Green of the campus/ in the community). In CIA, Mid-term exams have 70% weightage, Assignments have 10% weightage, class activities have 10% weightage, and out-of-class activities have 10% weightage.

Each question in the mid-term examination, assignment, and class activities is tagged to the corresponding CO and the overall attainment of that CO is based on the average mark set as the target for final attainment.

The Indirect assessment is done through the course exit survey.

The course teacher will carry out the CIA of the concerned course and maintain the record of the results of the CIA, semester-end examinations, and outcomes of the course exit survey.

In general, the percentage of students scoring more than 60% marks (6-grade points on a 10-point scale) in each question is taken to calculate CO attainment.

Four levels of attainment were used both in Direct and Indirect assessment.

### Direct assessment:

Level 3: 80% of students attain more than 60% marks -3.0

Level 2: 60% of students attain more than 60% marks -2.0

Level 1: 50% of students attain more than 60% marks -1.0

Level O: less than 50% of students attain more than 60% marks -0.0



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**Indirect assessment:** Course exit survey

The threshold is 3 points on a 5-point scale

Level 3: 70% or more students give 3 or more points

Level 2: 60% or more students give 3 or more points

Level 1: 50% or more students give 3 or more points

Level O: less than 50% of students give 3 or more points

The following formula was used for the calculation of CO attainment,

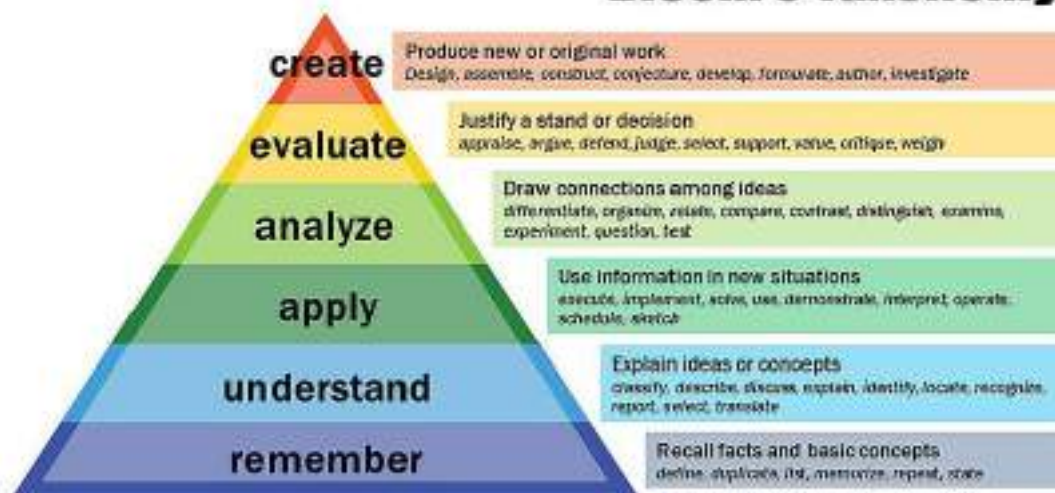
CO attainment =  $0.9 * \text{CO attainment in Direct method} + 0.1 * \text{CO attainment in Indirect method}$

The performance of course outcomes is used to compute the level of attainment of the POs and PSOs. The course outcomes should satisfy at least one or more of the defined POs and PSOs. The COs of each course are mapped to POs and PSOs with weights of 3 for strong correlation, 2 for medium correlation, 1 for weak correlation, and 0 for no correlation.

The calculation of PO attainment is based on the level of mapping of CO-PO and Co attainment level.

The question papers were set based on Bloom's Taxonomy. Bloom's Taxonomy is a framework that classifies educational objectives into different levels of cognitive complexity. It consists of six levels: Remembering, Understanding, Applying, Analyzing, Evaluating, and Creating.

## Bloom's Taxonomy





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## Sample CO attainment

In Chemistry course-2 for BSc programmes, there are nine COs. The attainment of these COs is based on the performance of the students in the mid, semester-end, and exit-survey.

In the CIA, two mid-exams are conducted. Out of the 50 marks, the first mid-exam has a weightage of 20 marks. Four questions each having an equal weightage of 5 marks with internal choice were given in the first-mid. The first four COs namely, CO-1, CO-2, CO-3, and CO-4 were mapped to the four questions respectively in the first mid-exam. Three questions each having an equal weightage of 5 marks with internal choice were given in the second-mid. The COs, namely, CO-5, CO-6 and CO-7 were mapped to the three questions. CO-8 is mapped to the Quiz questions having a weightage of 5 marks and CO-9 is mapped to the assignment questions having a weightage of 5 marks.

In the exit survey, a multiple-choice exam with 5 questions was conducted. Questions are framed in such a way that all 9 COs are mapped.

Question paper for mid-exam-1

GOVERNMENT DEGREE COLLEGE  
CHODAVARAM  
ACADEMIC YEAR 2021-22  
B.Sc. CHEMISTRY COURSE-II  
ORGANIC AND GENERAL CHEMISTRY MID-I  
(CO1-CO4)

Duration-1hr

Total Marks= 20 m

I. Answer ALL the questions

4 x 5 = 20 m

1. Explain the importance of the HSAB principle on complex compounds. L2

CO-1

or

Which elements act as hard and soft acids in the periodic table? L6

2. What are the methods of preparation in alkanes? L1

CO-2

or

Analyze the stability of cyclohexane on the basis of Bayer strain theory. L4

3. Distinguish the mechanism between markownikoff addition and anti-markownikoff addition. L4

CO-3

or

Explain the acidity of alkynes. L3

4. Evaluate the ortho, meta, and para positions directed by the activators and deactivators. L5

CO-4

or

Describe the aromatic nature of the Benzenoid and Non-benzenoid compounds. L1

Question paper for mid-exam-2

**GOVERNMENT DEGREE COLLEGE  
CHODAVARAM  
ACADEMIC YEAR 2021-22  
B.Sc. CHEMISTRY COURSE-II  
ORGANIC AND GENERAL CHEMISTRY MID-II**

Duration-1hr

Total Marks = 15 m

I. Answer ALL the questions

3 x 5 = 15 m

1. Distinguish the colloids, true solutions, and suspensions. **L5**

**CO-5**

or

Explain the stability of the collides. **L2**

2. What are the differences between physical and chemical adsorptions? **L5**

**CO-6**

or

Explain Langmuir's adsorption isotherm. **L2**

3. Why the valence bond theory fails to explain energies corresponding to the electrons.

**L4**

**CO-7**

Or

How would you explain the bond order of N<sub>2</sub> and O<sub>2</sub> molecules using MO diagrams? **L5**

## Quiz

**GOVERNMENT DEGREE COLLEGE  
CHODAVARAM  
ACADEMIC YEAR 2021-22  
B.Sc. CHEMISTRY COURSE-II  
ORGANIC AND GENERAL CHEMISTRY  
QUIZ**

**CO-8**

**Duration-30 min.**

**Total Marks= 5 m**

**I. Answer ALL questions**

**1/2 x 10 = 5 m**

1. What is the main cause of optical isomerism? **L1**
  - a) Chirality
  - b) Tautomeric shifts
  - c) Conformational isomerism
  - d) Geometric isomerism
  
2. How many stereoisomers can a compound with a single chiral center have? **L2**
  - a) 1
  - b) 2
  - c) 3
  - d) 4
  
3. Which of the following compounds does not exhibit optical isomerism? **L4**
  - a) 2-bromobutane
  - b) 1,2-dibromobutane
  - c) 2-chloropentane
  - d) 2,3-dichloropentane
  
4. A compound with two chiral centers can have how many stereoisomers? **L4**
  - a) 2
  - b) 3
  - c) 4
  - d) 8
  
5. Which of the following statements is true about optical isomers? **L4**
  - a) They have identical physical properties.
  - b) They rotate plane-polarized light in the same direction.
  - c) They have different physical properties.
  - d) They are always superimposable.
  
6. How can one determine if a compound is chiral? **L5**
  - a) By analyzing its boiling point

- b) By examining its color
- c) By checking for the presence of a chiral center
- d) By measuring its density

7. Which type of isomerism is exemplified by the compounds cis-2-butene and trans-2-butene? L4

- (a) Optical isomerism
- b) Geometric isomerism
- c) Conformational isomerism
- d) Structural isomerism

8. What is the relationship between a pair of enantiomers? L2

- a) They are mirror images of each other.
- b) They are identical compounds.
- c) They have the same molecular formula.
- d) They have different physical properties.

9. Which of the following molecules is achiral? L1

- a) lactic acid
- b) tartaric acid
- c) alanine
- d) glucose

10. The presence of an internal plane of symmetry in a molecule indicates that it is: L1

- a) chiral
- b) achiral
- c) meso
- d) racemic

**GOVERNMENT DEGREE COLLEGE  
CHODAVARAM  
ACADEMIC YEAR 2021-22  
B.Sc. CHEMISTRY COURSE-II  
ORGANIC AND GENERAL CHEMISTRY  
ASSIGNMENT**

**Duration-15 min.**

**Total Marks= 5 m**

**I. Answer any one of the following**

**1 x 5 = 5 m**

1. Write the molecular representation of ethane by Wedge, Fischer, Newman, and Saw-Horse.

**CO-9**

or

**L2**

2. Explain the terms 'optical rotation' and 'specific rotation'. **L3**

**CO-9**



## Indirect Assessment- Exit Survey Questionnaire

**GOVERNMENT DEGREE COLLEGE  
CHODAVARAM  
ACADEMIC YEAR 2021-22  
B.Sc. CHEMISTRY COURSE-II  
ORGANIC AND GENERAL CHEMISTRY  
Exit Survey Questionnaire**

Tick mark (  ) the answer

1. Are you aware of the Pearsons concept and its applications  
(a) Confident      (b) Not Confident      (c) Just about      (d) Not sure
2. Do you know the important reactions of the alkenes, alkynes, and benzene?  
(a) Confident      (b) Not Confident      (c) Just about      (d) Not sure
3. Have you received sufficient information about applications of colloids and adsorption?  
(a) Confident      (b) Not Confident      (c) Just about      (d) Not sure
4. Are you satisfied with the knowledge gained in the concept of Valence bond theory, hybridization, and Molecular orbital Theory?  
(a) Confident      (b) Not Confident      (c) Just about      (d) Not sure
5. Have you learned about the key aspects the stereochemistry  
(a) Confident      (b) Not Confident      (c) Just about      (d) Not sure

## Department of Chemistry

### COURSE-2 (ORGANIC AND GENERAL CHEMISTRY)

#### COs attainment in Direct Assessment

S.No.	Registered Number	Name of the student	MID-1								MID-2							Quiz		Assignment	
			CO1	CO1 %	CO2	CO2 %	CO3	CO3 %	CO4	CO4 %	CO5	CO5 %	CO6	CO6 %	CO7	CO7 %	CO8	CO8 %	CO9	CO9 %	
1	721122805050	ADDURI LAKSHMI	4	80	4	80	5	100	4	80	4	80	4	80	4	80	3	60	4	80	
2	721122805051	ALLANGI RAJESWARI	4	80	4	80	4	80	4	80	4	80	4	80	4	80	3	60	3	60	
3	721122805052	BALIREDDY NAGALAKSHMI	5	100	5	100	5	100	5	100	5	100	5	100	5	100	4	80	4	80	
4	721122805053	BANAM RAMA DEVI	5	100	5	100	5	100	5	100	5	100	5	100	5	100	4	80	5	100	
5	721122805054	BHEEMAVARAPU SWATHI	5	100	3	60	5	100	5	100	5	100	3	60	5	100	5	100	4	80	
6	721122805055	BOGADHI VANAJA	5	100	5	100	5	100	5	100	5	100	5	100	5	100	5	100	5	100	
7	721122805056	BONDA SRI HARI PADAL	3	60	4	80	4	80	3	60	3	60	5	100	2	40	2	40	3	60	
8	721122805057	BUDAI HARA GOVIND PADAL	3	60	3	60	4	80	4	80	3	60	5	100	4	80	2	40	2	40	
9	721122805058	BURE DAMAYANTHI	5	100	5	100	4	80	5	100	5	100	5	100	5	100	5	100	4	80	
10	721122805059	CHELLAPUREDDI UMA	5	100	5	100	5	100	5	100	5	100	5	100	4	80	3	60	2	40	
11	721122805060	CHIMMITI NAGA PARVATHI	3	60	2	40	3	60	3	60	3	60	4	80	2	40	2	40	3	60	
12	721122805061	DONDA JANAKI DEVI	3	60	2	40	2	40	3	60	2	40	5	100	2	40	2	40	2	40	
13	721122805062	EMANDI MANIKRISHNA	3	60	3	60	3	60	3	60	3	60	5	100	2	40	2	40	2	40	
14	721122805063	GANGUPAM PUJITHA	4	80	5	100	3	60	3	60	4	80	5	100	4	80	4	80	4	80	
15	721122805064	ITHIREDDI RAMALAXMI	5	100	3	60	4	80	4	80	5	100	4	80	3	60	3	60	5	100	
16	721122805065	KADIMI LAVANYA	4	80	4	80	5	100	4	80	5	100	4	80	4	80	4	80	5	100	
17	721122805066	KALINGA VARALAKSHMI	5	100	4	80	4	80	4	80	4	80	5	100	3	60	3	60	2	40	
18	721122805067	KONA POORNASRI	4	80	5	100	5	100	5	100	5	100	5	100	4	80	3	60	4	80	
19	721122805068	KONA SAI PRIYANKA	5	100	4	80	4	80	5	100	5	100	5	100	2	40	2	40	2	40	
20	721122805069	KORRA SHARON	2	40	2	40	2	40	2	40	4	80	3	60	1	20	2	40	2	40	
21	721122805070	MADELA BHUDEVI	4	80	3	60	3	60	4	80	4	80	4	80	2	40	2	40	3	60	
22	721122805071	MANDE CHAITANYA	2	40	2	40	2	40	2	40	3	60	2	40	1	20	2	40	2	40	
23	721122805072	MOLLI KIRANMAYI	5	100	5	100	5	100	5	100	5	100	5	100	5	100	5	100	5	100	
24	721122805073	MURALASETTI ALEKHYA JASMIN	5	100	5	100	5	100	5	100	5	100	5	100	5	100	4	80	5	100	
25	721122805074	PACHIKURA MADHAVI	4	80	4	80	5	100	5	100	5	100	5	100	4	80	4	80	4	80	
26	721122805075	PADALA VAMSI	4	80	4	80	4	80	4	80	5	100	5	100	4	80	3	60	5	100	
27	721122805076	PAGI JAHNAVI	4	80	5	100	4	80	4	80	5	100	4	80	4	80	4	80	5	100	
28	721122805077	PAMU ANJI NAIDU	2	40	2	40	2	40	2	40	3	60	2	40	2	40	2	40	2	40	

29	721122805078	PANDRANKI NAGA KARTHIK	3	60	2	40	2	40	2	40	2	40	2	40	2	40	2	40	2	40
30	721122805079	PARRE PUSHPA	4	80	4	80	5	100	4	80	4	80	4	80	4	80	4	80	4	80
31	721122805080	PEDIREDLA SIDDHU	2	40	2	40	2	40	2	40	3	60	2	40	2	40	2	40	2	40
32	721122805081	POOJARI PRASANTH KUMAR	4	80	3	60	4	80	4	80	4	80	4	80	4	80	4	80	4	80
33	721122805082	POTNURU LOKESH	3	60	2	40	2	40	3	60	2	40	3	60	3	60	3	60	3	60
34	721122805083	PUJARI MAHALAXMI	3	60	3	60	3	60	3	60	3	60	4	80	2	40	2	40	2	40
35	721122805084	RAMSALA SIVA KUMAR	3	60	2	40	2	40	3	60	4	80	5	100	4	80	4	80	4	80
36	721122805085	SAKALA PUSHPA	5	100	3	60	5	100	5	100	4	80	4	80	4	80	4	80	5	100
37	721122805086	SEERAMDASU DEVI	4	80	5	100	5	100	4	80	4	80	5	100	4	80	4	80	4	80
38	721122805087	SINGAMPALLI NAGALAKSHMI	4	80	3	60	4	80	4	80	4	80	4	80	3	60	3	60	3	60
39	721122805088	SOMIREDDI RAMAGANA	5	100	5	100	5	100	5	100	5	100	5	100	5	100	4	80	5	100
40	721122805089	SOMIREDDI RAMANI	5	100	4	80	5	100	5	100	5	100	4	80	5	100	5	100	5	100
41	721122805090	TADI HEMALATHA	5	100	4	80	4	80	5	100	5	100	4	80	5	100	4	80	5	100
42	721122805091	TANGUDUBILLI MOUNIKA	5	100	4	80	4	80	5	100	5	100	5	100	4	80	4	80	4	80
43	721122805092	TARRA ARUNA	4	80	2	40	3	60	3	60	3	60	4	80	3	60	3	60	3	60
44	721122805093	VANNEPURI BABUJI	4	80	3	60	4	80	4	80	4	80	4	80	4	80	4	80	4	80
45	721122805094	VANTHALA RAVI	4	80	3	60	3	60	4	80	5	100	4	80	3	60	3	60	3	60
		<b>Percentage of students who got above 60%</b>		<b>91.1</b>		<b>77.8</b>		<b>82.2</b>		<b>88.9</b>		<b>93.3</b>		<b>91.11</b>		<b>73.3</b>		<b>71.1</b>		<b>73.3</b>
		<b>CO attainment level</b>		<b>3</b>		<b>2</b>		<b>3</b>		<b>3</b>		<b>3</b>		<b>3</b>		<b>2</b>		<b>3</b>		<b>2</b>

## CO Attainment in In-Direct Assessment

S.No.	Registered Number	Name of the student	CO1 & CO2	%	CO3 & CO4	%	CO5 & CO6	%	CO7 & CO8	%	CO9	%
1	721122805050	ADDURI LAKSHMI	5	100	4	80	5	100	5	100	5	100
2	721122805051	ALLANGI RAJESWARI	4	80	5	100	5	100	4	80	5	100
3	721122805052	BALIREDDY NAGALAKSHMI	4	80	5	100	4	80	5	100	5	100
4	721122805053	BANAM RAMA DEVI	5	100	5	100	5	100	5	100	4	80
5	721122805054	BHEEMAVARAPU SWATHI	4	80	3	60	5	100	5	100	5	100
6	721122805055	BOGADHI VANAJA	5	100	4	80	5	100	5	100	4	80
7	721122805056	BONDA SRI HARI PADAL	3	60	4	80	2	40	3	60	3	60
8	721122805057	BUDAI HARA GOVIND PADAL	4	80	3	60	2	40	4	80	4	80
9	721122805058	BURE DAMAYANTHI	5	100	4	80	4	80	5	100	5	100
10	721122805059	CHELLAPUREDDI UMA	3	60	5	100	5	100	5	100	5	100
11	721122805060	CHIMMITI NAGA PARVATHI	4	80	3	60	3	60	2	40	4	80
12	721122805061	DONDA JANAKI DEVI	4	80	2	40	2	40	2	40	3	60
13	721122805062	EMANDI MANIKRISHNA	3	60	3	60	3	60	2	40	3	60
14	721122805063	GANGUPAM PUJITHA	4	80	5	100	3	60	2	40	4	80
15	721122805064	ITHIREDDI RAMALAXMI	5	100	3	60	5	100	4	80	5	100
16	721122805065	KADIMI LAVANYA	5	100	4	80	5	100	4	80	5	100
17	721122805066	KALINGA VARALAKSHMI	4	80	4	80	4	80	4	80	4	80
18	721122805067	KONA POORNASRI	5	100	5	100	5	100	5	100	5	100
19	721122805068	KONA SAI PRIYANKA	4	80	4	80	4	80	5	100	5	100
20	721122805069	KORRA SHARON	3	60	2	40	2	40	2	40	5	100
21	721122805070	MADELA BHUDEVI	2	40	3	60	3	60	4	80	5	100
22	721122805071	MANDE CHAITANYA	2	40	2	40	2	40	2	40	3	60
23	721122805072	MOLLI KIRANMAYI	5	100	5	100	4	80	4	80	5	100
24	721122805073	MURALASETTI ALEKHYA JASMIN	5	100	5	100	5	100	5	100	5	100
25	721122805074	PACHIKURA MADHAVI	5	100	4	80	5	100	5	100	5	100
26	721122805075	PADALA VAMSI	4	80	4	80	4	80	3	60	5	100
27	721122805076	PAGI JAHNAVI	5	100	5	100	3	60	4	80	5	100
28	721122805077	PAMU ANJI NAIDU	2	40	2	40	2	40	2	40	3	60
29	721122805078	PANDRANKI NAGA KARTHIK	2	40	2	40	2	40	2	40	2	40
30	721122805079	PARRE PUSHPA	5	100	4	80	4	80	3	60	4	80

31	721122805080	PEDIREDLA SIDDHU	2	40	2	40	2	40	2	40	5	100
32	721122805081	POOJARI PRASANTH KUMAR	4	80	3	60	4	80	4	80	4	80
33	721122805082	POTNURU LOKESH	3	60	2	40	2	40	3	60	2	40
34	721122805083	PUJARI MAHALAXMI	4	80	3	60	3	60	3	60	3	60
35	721122805084	RAMSALA SIVA KUMAR	3	60	2	40	2	40	2	40	5	100
36	721122805085	SAKALA PUSHPA	4	80	3	60	5	100	5	100	4	80
37	721122805086	SEERAMDASU DEVI	4	80	5	100	4	80	4	80	4	80
38	721122805087	SINGAMPALLI NAGALAKSHMI	5	100	3	60	4	80	4	80	5	100
39	721122805088	SOMIREDDI RAMAGANA	5	100	5	100	5	100	5	100	5	100
40	721122805089	SOMIREDDI RAMANI	5	100	4	80	5	100	5	100	5	100
41	721122805090	TADI HEMALATHA	5	100	4	80	5	100	5	100	4	80
42	721122805091	TANGUDUBILLI MOUNIKA	5	100	4	80	4	80	5	100	5	100
43	721122805092	TARRA ARUNA	4	80	2	40	4	80	3	60	2	40
44	721122805093	VANNEPURI BABUJI	3	60	3	60	3	60	2	40	2	40
45	721122805094	VANTHALA RAVI	4	80	3	60	3	60	4	80	5	100
		<b>Percentage of students who got above 60%</b>		<b>88.889</b>		<b>80</b>		<b>77.778</b>		<b>75.556</b>		<b>91.111</b>
		<b>attainment level</b>		<b>3</b>		<b>3</b>		<b>2</b>		<b>2</b>		<b>3</b>

	CO Attainment level		
CO2	2	3	2.1
CO4	3	3	3
CO5	3	2	2.9
CO6	3	2	2.9
CO7	2	2	2
CO8	3	2	2.9
CO9	2	3	2.1

**Course Outcomes (COs) attainment calculation**

	<b>CO attainment</b>		
<b>CO</b>	<b>Direct Assessment</b>	<b>Indirect Assessment</b>	<b>CO Attainment = Direct Assessment x 0.9 + Indirect Assessment x 0.1</b>
CO1	3	3	3
CO2	2	3	2.1
CO3	3	3	3
CO4	3	3	3
CO5	3	2	2.9
CO6	3	2	2.9
CO7	2	2	2
CO8	3	2	2.9
CO9	2	3	2.1



# GOVERNMENT DEGREE COLLEGE, CHODAVARAM

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Anakapalle District -531036, Andhra Pradesh, India

Recognized by UGC under 2(f) & (12b), Affiliated to Andhra University, VSP



## Mapping of COs with POs

Course: Chemistry course-2 (ORGANIC AND GENERAL CHEMISTRY)

Programme: BSc (Botany, Zoology, Chemistry)

	PO1	PO2	PO3	PO4	PO5	PO6	PSO1	PSO2	PSO3	PSO4
CO1	2	3	1	1	2	2	1	2	2	2
CO2	1	2	0	1	1	1	2	1	1	0
CO3	2	2	1	0	1	2	1	2	2	2
CO4	2	2	1	2	2	2	0	1	3	2
CO5	2	1	2	0	1	1	1	2	2	3
CO6	2	1	0	1	0	2	2	2	2	2
CO7	3	0	2	2	1	2	1	1	3	1
CO8	3	1	1	2	2	3	1	2	3	2
CO9	1	2	1	1	1	1	2	1	1	1

## Levels of correlation between COs and POs

Value	Descriptor
0	No Correlation
1	Low Correlation
2	Moderate Correlation
3	High Correlation





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## POs attainment

POs attainment is calculated using the CO attainment and level of CO-PO mapping.

PO	PO attainment
PO1	2.59
PO2	2.66
PO3	2.64
PO4	2.50
PO5	2.72
PO6	2.61
PSO1	2.38
PSO2	2.63
PSO3	2.62
PSO4	2.71

**For example**, PO1 is calculated using the COs that are mapped to PO1. From the PO-CO mapping table, PO1 is mapped to CO1, CO2, CO3, CO4, CO5, CO6, CO7, CO8, and CO9.

**PO1 attainment** = [(PO1-CO1) mapping level x CO1 attainment ] + [(PO1-CO2) mapping level x CO2 attainment]+[(PO1-CO3) mapping level x CO3 attainment]+[(PO1-CO4) mapping level x CO4 attainment]+ [(PO1-CO5) mapping level x CO5 attainment]+[(PO1-CO6) mapping level x CO6 attainment]+[(PO1-CO7) mapping level x CO7 attainment]+[(PO1-CO8) mapping level x CO8 attainment]+[(PO1-CO9) mapping level x CO9 attainment]/ [(PO1-CO1) mapping level + (PO1-CO2) mapping level+ (PO1-CO3) mapping level + (PO1-CO4) mapping level+(PO1-CO5) mapping level +(PO1-CO6) mapping level+(PO1-CO6) mapping level +(PO1-CO7) mapping level +(PO1-CO8) mapping level +(PO1-CO9) mapping level]

**PO1 attainment** =

$((2 \times 3) + (1 \times 2.1) + (2 \times 3) + (2 \times 3) + (2 \times 2.9) + (2 \times 2) + (3 \times 2) + (3 \times 2.9) + (1 \times 2.1)) / (2 + 1 + 2 + 2 + 2 + 2 + 3 + 3 + 1)$

**PO1 attainment** = 2.59

**Question paper for mid-exam-1**

**GOVERNMENT DEGREE COLLEGE  
CHODAVARAM  
ACADEMIC YEAR 2021-22  
B.Sc. BOTANY COURSE-II  
BASICS OF VASCULAR PLANTS, GYMNOSPERMS, AND TAXONOMY MID-I  
(CO1-CO4)**

**Duration-1hr**

**Total Marks= 20 m**

**I. Answer ALL the questions!**

**4 x 5 = 20 m**

1.Explain the economic importance Gymnosperms? **L2**

**CO-1**

or

Which tissue is formed in pteridophyta plants in evolution? **L6**

2.What are the components of Plant Taxonomy? **L1**

**CO-2**

or

Analyze how phylogenetic classifications are most developed? **L4**

3. Distinguish the differences between Pteridophyta and Gymnosperms? **L4**

**CO-3**

or

Explain the general characters of Pteridophyta? **L3**

4. Evaluate the merits of Bentham and Hooker Classification? **L5**

**CO-4**

or

Describe the anatomy of Pinus needle leaf? **L1**

**Question paper for mid-exam-2**

**GOVERNMENT DEGREE COLLEGE  
CHODAVARAM  
ACADEMIC YEAR 2021-22  
B.Sc. BOTANY COURSE-II  
BASICS OF VASCULAR PLANTS, GYMNOSPERMS, AND TAXONOMY MID-II  
(CO5-CO7)**

**Duration-1hr**

**Total Marks= 15 m**

**I. Answer ALL the questions!**

**3 x 5 = 15 m**

1. Distinguish the family Annonaceae and Brassicaceae? **L5**

**CO-5**

or

Explain floral characters of family Asteraceae? **L2**

2. What is the difference in pollination mechanism of family Asclepiadaceae, Poaceae? **L5**

**CO-6**

or

Explain the Tendril nature in Cucurbitaceae? **L2**

3. Why Asteraceae members are abundantly grown in world? **L4**

**CO-7**

or

How would you explain most vegetable crops are belong to Cucurbitaceae? **L5**

## Quiz

**GOVERNMENT DEGREE COLLEGE  
CHODAVARAM  
ACADEMIC YEAR 2021-22  
B.Sc. BOTANY COURSE-II  
BASICS OF VASCULAR PLANTS, GYMNOSPERMS, AND TAXONOMY  
QUIZ **CO-8****

**Duration-30 min.**

**Total Marks= 5 m**

**I. Answer ALL the questions!**

**1/2 x 5 = 5 m**

1. What is the fundamental aspect of Taxonomy? **L1**
  - a) Nomenclature
  - b) Identification
  - c) Classification
  - d) Binomial Nomenclature
  
2. Which book is written by Bentham and Hooker? **L2**
  - a) Species Plantarum
  - b) Genera Plantarum
  - c) Origin of Species
  - d) The Nature
  
3. Which of the following is biggest family in Dicotyledons? **L4**
  - a) Annonaceae
  - b) Cucurbitaceae
  - c) Asteraceae
  - d) Palmae
  
4. Which of the following plants are called as Botanical snakes? **L4**
  - a) Gymnosperms
  - b) Monocots
  - c) Pteridophytes
  - d) Bryophytes
  
5. Which of the following statements is true about Gymnosperms? **L2**
  - a) Seeds formed in fruits
  - b) Endosperm is triploid
  - c) Stele is absent
  - d) Ovules are naked
  
6. How can one identify Asteraceae plant? **L4**
  - a) Presence of Spike inflorescence
  - b) Having Berry fruit
  - c) Leaves are having parallel venation
  - d) Presence of Head inflorescence

7. Which family is kept in Polypetalae though they having fused petals? L4

- a) Brassicaceae
- b) Annonaceae
- c) Cucurbitaceae
- d) Sapotaceae

8. What is the pollination mechanism in Asteraceae? L1

- a) Safety Mechanism
- b) Self pollination
- c) Only Vegetative reproduction
- d) All above

9. Which of the following is a Medicinal Plant? L2

- a) *Ipomea batatus*
- b) *Oryza sativa*
- c) *Phyllanthus niruri*
- d) *Zea mays*

10. The presence of Xylem vessels in the Gymnosperm plant: L2

- a) *Pinus*
- b) *Cycas*
- c) *Gnetum*
- d) *Ginkgo*

**Assignment**

**GOVERNMENT DEGREE COLLEGE  
CHODAVARAM  
ACADEMIC YEAR 2021-22  
B.Sc. BOTANY COURSE-II  
BASICS OF VASCULAR PLANTS, GYMNOSPERMS, AND TAXONOMY  
ASSIGNMENT**

**Duration-15 min.**

**Total Marks= 5 m**

**I. Answer ALL the questions!**

**1/2 x 5 = 5 m**

1. Write the merits and demerits of Bentham and Hooker classification? **L2**

**CO-9**

or

2. Explain pollinium structure in Asclepiadaceae? **L3**

**Indirect Assessment- Exit survey questionnaire**

**GOVERNMENT DEGREE COLLEGE  
CHODAVARAM  
ACADEMIC YEAR 2021-22  
B.Sc. BOTANY COURSE-II  
BASICS OF VASCULAR PLANTS, GYMNOSPERMS, AND TAXONOMY  
EXIT SURVEY QUESTIONNAIRE**

1. Which specific topics in the Pteridophyta chapter did you find most informative or interesting?
2. How do you think studying the Pteridophyta chapter will benefit you in your academic or professional pursuits?
3. How satisfied are you with the program's coverage of gymnosperms' evolutionary history and classification?
4. To what extent did this program help you recognize the economic and ecological importance of gymnosperms?
5. Did the program enhance your ability to identify and classify plants accurately?

## Department of Botany

### COURSE-2(BASICS OF VASCULAR PLANTS, GYMNOSPERMS, AND TAXONOMY)

#### COs Attainment in Direct Assessment

S.No.	Registered Number	Name of the student	MID-1								MID-2							Quiz		Assignment	
			CO 1	CO1 %	CO2	CO2 %	CO3	CO3 %	CO4	CO4 %	CO5	CO5 %	CO6	CO6 %	CO7	CO7 %	CO8	CO8 %	CO9	CO9 %	
1	721122805050	ADDURI LAKSHMI	5	100	5	100	4	80	4	80	5	100	5	100	4	80	4	80	5	100	
2	721122805051	ALLANGI RAJESWARI	4	80	4	80	5	100	5	100	5	100	2	40	4	80	3	60	3	60	
3	721122805052	BALIREDDY NAGALAKSHMI	5	100	5	100	5	100	5	100	5	100	5	100	5	100	3	60	4	80	
4	721122805053	BANAM RAMA DEVI	5	100	4	80	5	100	4	80	4	80	5	100	5	100	4	80	5	100	
5	721122805054	BHEEMAVARAPU SWATHI	4	80	3	60	5	100	4	80	4	80	2	40	5	100	4	80	5	100	
6	721122805055	BOGADHI VANAJA	5	100	5	100	4	80	4	80	5	100	4	80	5	100	5	100	5	100	
7	721122805056	BONDA SRI HARI PADAL	4	80	4	80	4	80	2	40	3	60	5	100	2	40	3	60	3	60	
8	721122805057	BUDAI HARA GOVIND PADAL	3	60	4	80	4	80	3	60	4	80	5	100	4	80	3	60	2	40	
9	721122805058	BURE DAMAYANTHI	5	100	5	100	5	100	4	80	4	80	4	80	5	100	5	100	4	80	
10	721122805059	CHELLAPUREDDI UMA	4	80	5	100	5	100	4	80	5	100	5	100	4	80	3	60	5	100	
11	721122805060	CHIMMITI NAGA PARVATHI	3	60	3	60	3	60	2	40	4	80	4	80	3	60	3	60	2	40	
12	721122805061	DONDA JANAKI DEVI	3	60	3	60	3	60	2	40	3	60	5	100	2	40	2	40	2	40	
13	721122805062	EMANDI MANIKRISHNA	4	80	3	60	3	60	2	40	4	80	5	100	3	60	3	60	3	60	
14	721122805063	GANGUPAM PUJITHA	4	80	5	100	3	60	2	40	4	80	5	100	4	80	5	100	4	80	
15	721122805064	ITHIREDDI RAMALAXMI	5	100	3	60	4	80	3	60	5	100	5	100	3	60	3	60	5	100	
16	721122805065	KADIMI LAVANYA	5	100	4	80	5	100	4	80	4	80	4	80	4	80	4	80	5	100	
17	721122805066	KALINGA VARALAKSHMI	5	100	4	80	4	80	4	80	4	80	4	80	3	60	3	60	2	40	
18	721122805067	KONA POORNASRI	4	80	5	100	5	100	4	80	4	80	5	100	4	80	3	60	4	80	
19	721122805068	KONA SAI PRIYANKA	5	100	4	80	4	80	5	100	5	100	5	100	3	60	3	60	2	40	
20	721122805069	KORRA SHARON	3	60	3	60	5	100	2	40	4	80	2	40	3	60	3	60	2	40	



21	721122805070	MADELA BHUDEV I	4	80	3	60	4	80	3	60	4	80	3	60	3	60	3	60	3	60
22	721122805071	MANDE CHAITANYA	2	40	3	60	2	40	2	40	3	60	2	40	2	40	2	40	3	60
23	721122805072	MOLLI KIRANMAYI	5	100	5	100	5	100	5	100	5	100	5	100	5	100	4	80	5	100
24	721122805073	MURALASETTI ALEKH YA JASMIN	4	80	5	100	5	100	4	80	5	100	5	100	5	100	4	80	5	100
25	721122805074	PACHIKURA MADHAVI	5	100	4	80	5	100	4	80	4	80	4	80	4	80	4	80	4	80
26	721122805075	PADALA VAMSI	3	60	4	80	4	80	3	60	4	80	2	40	4	80	3	60	5	100
27	721122805076	PAGI JAHNAVI	4	80	5	100	4	80	3	60	5	100	4	80	4	80	4	80	5	100
28	721122805077	PAMU ANJI NAIDU	2	40	2	40	2	40	2	40	4	80	2	40	4	80	2	40	2	40
29	721122805078	PANDRANKI NAGA KARTHIK	3	60	2	40	3	60	3	60	3	60	2	40	4	80	3	60	2	40
30	721122805079	PARRE PUSHPA	4	80	4	80	5	100	4	80	4	80	3	60	4	80	5	100	4	80
31	721122805080	PEDIREDLA SIDDHU	2	40	3	60	3	60	3	60	3	60	2	40	3	60	3	60	3	60
32	721122805081	POOJARI PRASANTH KUMAR	4	80	3	60	4	80	3	60	5	100	2	40	4	80	4	80	4	80
33	721122805082	POTNURU LOKESH	3	60	2	40	2	40	2	40	2	40	2	40	3	60	3	60	2	40
34	721122805083	PUJARI MAHALAXMI	4	80	3	60	3	60	2	40	3	60	5	100	3	60	3	60	2	40
35	721122805084	RAMSALA SIVA KUMAR	3	60	3	60	2	40	2	40	2	40	4	80	4	80	4	80	4	80
36	721122805085	SAKALA PUSHPA	4	80	3	60	5	100	5	100	5	100	4	80	4	80	4	80	5	100
37	721122805086	SEERAMDASU DEVI	4	80	5	100	5	100	5	100	4	80	4	80	4	80	4	80	4	80
38	721122805087	SINGAMPALLI NAGALAKSHMI	4	80	3	60	4	80	5	100	4	80	5	100	3	60	4	80	3	60
39	721122805088	SOMIREDDI RAMAGANA	5	100	5	100	5	100	5	100	5	100	5	100	5	100	4	80	4	80
40	721122805089	SOMIREDDI RAMANI	5	100	4	80	5	100	5	100	5	100	4	80	5	100	5	100	5	100
41	721122805090	TADI HEMALATHA	5	100	4	80	4	80	5	100	5	100	4	80	5	100	4	80	5	100
42	721122805091	TANGUDUBILLI MOUNIKA	5	100	4	80	4	80	4	80	4	80	5	100	4	80	4	80	4	80
43	721122805092	TARRA ARUNA	4	80	2	40	3	60	2	40	3	60	5	100	3	60	3	60	4	80
44	721122805093	VANNEPURI BABUJI	4	80	3	60	4	80	4	80	4	80	4	80	4	80	4	80	4	80
45	721122805094	VANTHALA RAVI	4	80	3	60	3	60	3	60	5	100	4	80	3	60	3	60	3	60
		Percentage of students who got above 60%		93.3333		91.1111		91.1111		73.3333		95.5556		77.7778		93.3333		93.333		77.7778
		Attain CO		3		3		3		2		3		2		2		3		2

## CO Attainment In-Direct Assessment

S.No.	Registered Number	Name of the student	CO1& CO2	%	CO3& CO4	%	CO5& CO6	%	CO7& CO8	%	CO9	%
1	721122805050	ADDURI LAKSHMI	5	100	5	100	5	100	5	100	5	100
2	721122805051	ALLANGI RAJESWARI	5	100	5	100	4	80	4	80	4	80
3	721122805052	BALIREDDY NAGALAKSHMI	4	80	5	100	4	80	5	100	5	100
4	721122805053	BANAM RAMA DEVI	5	100	5	100	5	100	4	80	5	100
5	721122805054	BHEEMAVARAPU SWATHI	5	100	4	80	5	100	5	100	5	100
6	721122805055	BOGADHI VANAJA	5	100	4	80	5	100	4	80	4	80
7	721122805056	BONDA SRI HARI PADAL	4	80	4	80	2	40	3	60	2	40
8	721122805057	BUDAI HARA GOVIND PADAL	4	80	3	60	2	40	4	80	2	40
9	721122805058	BURE DAMAYANTHI	5	100	4	80	4	80	5	100	5	100
10	721122805059	CHELLAPUREDDI UMA	3	60	5	100	5	100	5	100	5	100
11	721122805060	CHIMMITI NAGA PARVATHI	4	80	3	60	3	60	3	60	4	80
12	721122805061	DONDA JANAKI DEVI	4	80	2	40	2	40	3	60	2	40
13	721122805062	EMANDI MANIKRISHNA	3	60	4	80	3	60	3	60	2	40
14	721122805063	GANGUPAM PUJITHA	4	80	5	100	3	60	2	40	4	80
15	721122805064	ITHIREDDI RAMALAXMI	5	100	3	60	5	100	4	80	5	100
16	721122805065	KADIMI LAVANYA	5	100	4	80	5	100	5	100	5	100
17	721122805066	KALINGA VARALAKSHMI	4	80	4	80	4	80	4	80	4	80
18	721122805067	KONA POORNASRI	5	100	5	100	5	100	5	100	5	100
19	721122805068	KONA SAI PRIYANKA	4	80	4	80	4	80	4	80	5	100
20	721122805069	KORRA SHARON	3	60	2	40	2	40	2	40	5	100
21	721122805070	MADELA BHUDEVI	2	40	3	60	3	60	4	80	5	100
22	721122805071	MANDE CHAITANYA	2	40	2	40	2	40	3	60	3	60
23	721122805072	MOLLI KIRANMAYI	5	100	5	100	4	80	5	100	5	100

24	721122805073	MURALASETTI ALEKHYA JASMIN	5	100	5	100	5	100	5	100	5	100
25	721122805074	PACHIKURA MADHAVI	5	100	4	80	5	100	5	100	5	100
26	721122805075	PADALA VAMSI	4	80	4	80	4	80	3	60	5	100
27	721122805076	PAGI JAHNAVI	5	100	5	100	3	60	4	80	5	100
28	721122805077	PAMU ANJI NAIDU	2	40	2	40	2	40	3	60	3	60
29	721122805078	PANDRANKI NAGA KARTHIK	2	40	2	40	2	40	2	40	2	40
30	721122805079	PARRE PUSHPA	5	100	4	80	4	80	3	60	4	80
31	721122805080	PEDIREDLA SIDDHU	2	40	2	40	3	60	3	60	5	100
32	721122805081	POOJARI PRASANTH KUMAR	3	60	3	60	4	80	4	80	4	80
33	721122805082	POTNURU LOKESH	3	60	2	40	3	60	3	60	2	40
34	721122805083	PUJARI MAHALAXMI	4	80	3	60	3	60	3	60	2	40
35	721122805084	RAMSALA SIVA KUMAR	3	60	2	40	3	60	3	60	5	100
36	721122805085	SAKALA PUSHPA	4	80	3	60	5	100	5	100	4	80
37	721122805086	SEERAMDASU DEVI	4	80	5	100	4	80	4	80	2	40
38	721122805087	SINGAMPALLI NAGALAKSHMI	5	100	2	40	4	80	4	80	5	100
39	721122805088	SOMIREDDI RAMAGANA	5	100	5	100	5	100	5	100	5	100
40	721122805089	SOMIREDDI RAMANI	5	100	4	80	5	100	5	100	5	100
41	721122805090	TADI HEMALATHA	4	80	4	80	5	100	5	100	4	80
42	721122805091	TANGUDUBILLI MOUNIKA	5	100	4	80	4	80	5	100	5	100
43	721122805092	TARRA ARUNA	3	60	2	40	4	80	3	60	2	40
44	721122805093	VANNEPURI BABUJI	2	40	2	40	3	60	3	60	2	40
45	721122805094	VANTHALA RAVI	3	60	3	60	3	60	4	80	4	80
		<b>Percentage of students who got above 60%</b>		<b>86.6667</b>		<b>75.55556</b>		<b>84.4444</b>		<b>93.3333</b>		<b>77.7778</b>
		<b>level</b>		<b>3</b>		<b>2</b>		<b>3</b>		<b>3</b>		<b>2</b>

**Course Outcomes (COs) attainment calculation**

	<b>CO attainment</b>		
<b>CO</b>	<b>Direct Assessment</b>	<b>Indirect Assessment</b>	<b>CO Attainment = Direct Assessment x 0.9 + Indirect Assessment x 0.1</b>
CO1	3	3	3
CO2	3	3	3
CO3	3	2	2.9
CO4	2	2	2
CO5	3	3	3
CO6	2	3	2.1
CO7	2	3	2.1
CO8	3	3	3
CO9	2	2	2



# GOVERNMENT DEGREE COLLEGE, CHODAVARAM

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Anakapalle District - 531036, Andhra Pradesh, India

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## Mapping of COs with POs

Course: Botany course-2 (BASICS OF VASCULAR PLANTS,  
GYMNOSPERMS, AND TAXONOMY)

Programme: BSc (Botany, Zoology, Chemistry)

	PO1	PO2	PO3	PO4	PO5	PO6	PSO1	PSO2	PSO3	PSO4
CO1	2	2	2	1	2	1	2	3	2	1
CO2	0	2	1	2	1	2	2	2	3	2
CO3	2	2	0	1	2	2	0	1	2	2
CO4	3	2	1	2	2	2	1	2	3	0
CO5	2	0	2	1	1	2	2	2	2	3
CO6	2	1	1	0	2	1	1	2	2	2
CO7	3	1	2	2	1	2	3	0	2	2
CO8	2	2	1	3	2	3	1	2	2	3
CO9	1	2	2	1	0	2	2	1	1	2

## Levels of correlation between COs and POs

Value	Descriptor
0	No Correlation
1	Low Correlation
2	Moderate Correlation
3	High Correlation



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## POs attainment

POs attainment is calculated using the CO attainment and level of CO-PO mapping.

PO	PO attainment
PO1	2.48
PO2	2.57
PO3	2.52
PO4	2.62
PO5	2.62
PO6	2.59
PSO1	2.52
PSO2	2.67
PSO3	2.58
PSO4	2.65

**For example**, PO1 is calculated using the COs that are mapped to PO1. From the PO-CO mapping table, PO1 is mapped to CO1, CO2, CO3, CO4, CO5, CO6, CO7, CO8, and CO9.

**POI attainment** = [(PO1-CO1) mapping level x CO1 attainment ] + [(PO1-CO2) mapping level x CO2 attainment]+[(PO1-CO3) mapping level x CO3 attainment]+[(PO1-CO4) mapping level x CO4 attainment]+ [(PO1-CO5) mapping level x CO5 attainment]+[(PO1-CO6) mapping level x CO6 attainment]+[(PO1-CO7) mapping level x CO7 attainment]+[(PO1-CO8) mapping level x CO8 attainment]+[(PO1-CO9) mapping level x CO9 attainment]/ [(PO1-CO1) mapping level + (PO1-CO2) mapping level+ (PO1-CO3) mapping level + (PO1-CO4) mapping level+(PO1-CO5) mapping level +(PO1-CO6) mapping level+(PO1-CO6) mapping level +(PO1-CO7) mapping level +(PO1-CO8) mapping level +(PO1-CO9) mapping level]

**PO1 attainment** =

$$((2 \times 3) + (0 \times 3) + (2 \times 2.9) + (3 \times 2) + (2 \times 3) + (2 \times 2.1) + (3 \times 2.1) + (2 \times 3) + (1 \times 2)) / (2 + 0 + 2 + 3 + 2 + 2 + 3 + 2 + 1)$$

**PO1 attainment = 2.48**

Question paper for mid-exam-1

GOVERNMENT DEGREE COLLEGE  
CHODAVARAM  
ACADEMIC YEAR 2021-22  
B.Sc. ZOOLOGY COURSE-II  
ANIMAL DIVERSITY, BIOLOGY OF CHORDATES MID-I  
(CO1-CO4)

Duration-1hr

Total Marks= 20 m

I. Answer ALL the questions

4 x 5 = 20 m

1. What are the general characteristics of Chordata? L2

CO1

Or

Mention the character cephalochordate. L1

2. How would you explain Retrogressive metamorphosis in Herdmania? L2

CO2

Or

Distinguish between Petromyzon and Myxine. L4

3. Mention the general characters of Pisces. L1

CO3

Or

How would you explain the structure of brain in Scoliodon? L2

4. What are the various types of scales in Pisces? L1

CO4

Or

8. Explain Migration in fishes with illustrations. L2

**Question paper for mid-exam-1**

**GOVERNMENT DEGREE COLLEGE  
CHODAVARAM  
ACADEMIC YEAR 2021-22  
B.Sc. ZOOLOGY COURSE-II  
ANIMAL DIVERSITY, BIOLOGY OF CHORDATES MID-I  
(CO5-CO7)**

**Duration-1hr**

**Total Marks= 15 m**

**I. Answer ALL the questions**

**4 x 5 = 15 m**

1. Describe the Respiratory system in Rana hexadactyla. **L2**

**CO5**

Or

Explain the structure of heart in Rana hexadactyla. **L2**

2. Mention the characters of Reptilia. **L1**

**CO6**

Or

Explain the digestive system in Calotes. **L2**

3. How can we distinguish poisonous snakes from non-poisonous snakes? **L4**

**CO7**

Or

What are the characters of Aves? **L1**



**Group Discussion**

**GOVERNMENT DEGREE COLLEGE  
CHODAVARAM  
ACADEMIC YEAR 2021-22  
B.Sc. ZOOLOGY COURSE-II  
ANIMAL DIVERSITY, BIOLOGY OF CHORDATES  
GROUP DISCUSSION **CO8****

1. Flight adaptations in birds. **L1**

**Assignment**

**GOVERNMENT DEGREE COLLEGE  
CHODAVARAM  
ACADEMIC YEAR 2021-22  
B.Sc. ZOOLOGY COURSE-II  
ANIMAL DIVERSITY, BIOLOGY OF CHORDATES  
ASSIGNMENT CO9**

**Duration-15 min.**

**Total Marks= 5 m**

**Answer any one of the following**

**1 x 5 = 5 m**

1. Compare Prototherians, Metatherians, and Eutherians. L4

**Department of Zoology**

**COURSE-2(ANIMAL DIVERSITY, BIOLOGY OF CHORDATES)**

**COs Attainment in Direct Assessment**

S.No.	Registered Number	Name of the student	MID-1								MID-2							Seminar		Assignment	
			CO 1	CO1 %	CO2	CO2 %	CO3	CO3 %	CO4	CO4 %	CO5	CO5 %	CO6	CO6 %	CO7	CO7 %	CO8	CO8 %	CO9	CO9 %	
1	721122805050	ADDURI LAKSHMI	4	80	4	80	5	100	4	80	4	80	5	100	4	80	4	80	3		
2	721122805051	ALLANGI RAJESWARI	4	80	4	80	4	80	4	80	4	80	4	80	4	80	4	80	4	60	
3	721122805052	BALIREDDY NAGALAKSHMI	5	100	5	100	5	100	5	100	5	100	5	100	5	100	4	80	4	80	
4	721122805053	BANAM RAMA DEVI	5	100	5	100	5	100	5	100	5	100	5	100	5	100	4	80	5	80	
5	721122805054	BHEEMAVARAPU SWATHI	5	100	3	60	5	100	5	100	5	100	2	40	5	100	4	80	4	100	
6	721122805055	BOGADHI VANAJA	5	100	5	100	5	100	5	100	5	100	5	100	5	100	5	100	4	80	
7	721122805056	BONDA SRI HARI PADAL	3	60	4	80	4	80	3	60	3	60	5	100	4	80	2	40	3	80	
8	721122805057	BUDAI HARA GOVIND PADAL	3	60	3	60	4	80	4	80	3	60	4	80	4	80	2	40	2	60	
9	721122805058	BURE DAMAYANTHI	5	100	5	100	4	80	5	100	5	100	5	100	5	100	5	100	4	40	
10	721122805059	CHELLAPUREDDI UMA	5	100	5	100	5	100	5	100	5	100	5	100	4	80	3	60	2	80	
11	721122805060	CHIMMITI NAGA PARVATHI	3	60	2	40	3	60	3	60	3	60	4	80	3	60	2	40	3	40	
12	721122805061	DONDA JANAKI DEVI	3	60	2	40	2	40	3	60	2	40	2	40	4	80	2	40	2	60	
13	721122805062	EMANDI MANIKRISHNA	3	60	3	60	3	60	3	60	3	60	5	100	2	40	2	40	2	40	
14	721122805063	GANGUPAM PUJITHA	4	80	5	100	3	60	3	60	4	80	5	100	4	80	4	80	4	40	
15	721122805064	ITHIREDDI RAMALAXMI	5	100	3	60	4	80	4	80	5	100	4	80	3	60	3	60	5	80	
16	721122805065	KADIMI LAVANYA	4	80	4	80	5	100	4	80	5	100	4	80	4	80	4	80	5	100	
17	721122805066	KALINGA VARALAKSHMI	5	100	4	80	4	80	4	80	4	80	5	100	3	60	3	60	2	100	
18	721122805067	KONA POORNASRI	4	80	5	100	5	100	5	100	5	100	5	100	4	80	3	60	4	40	
19	721122805068	KONA SAI PRIYANKA	5	100	4	80	4	80	5	100	5	100	5	100	2	40	2	40	2	80	
20	721122805069	KORRA SHARON	2	40	2	40	2	40	2	40	4	80	2	40	2	40	2	40	2	40	
21	721122805070	MADELA BHUDEVI	4	80	3	60	3	60	4	80	4	80	2	40	2	40	2	40	3	40	

22	721122805071	MANDE CHAITANYA	2	40	2	40	2	40	2	40	3	60	2	40	2	40	2	40	2	60
23	721122805072	MOLLI KIRANMAYI	5	100	5	100	5	100	5	100	5	100	4	80	5	100	5	100	5	40
24	721122805073	MURALASETTI ALEKHYA JASMIN	5	100	5	100	5	100	5	100	5	100	5	100	5	100	4	80	5	100
25	721122805074	PACHIKURA MADHAVI	4	80	4	80	5	100	5	100	5	100	5	100	4	80	4	80	4	100
26	721122805075	PADALA VAMSI	4	80	4	80	4	80	4	80	5	100	5	100	4	80	3	60	5	80
27	721122805076	PAGI JAHNAVI	4	80	5	100	4	80	4	80	5	100	4	80	4	80	4	80	5	100
28	721122805077	PAMU ANJI NAIDU	2	40	2	40	2	40	2	40	3	60	2	40	2	40	2	40	2	100
29	721122805078	PANDRANKI NAGA KARTHIK	3	60	2	40	2	40	2	40	2	40	2	40	2	40	2	40	3	40
30	721122805079	PARRE PUSHPA	4	80	4	80	5	100	4	80	4	80	4	80	4	80	4	80	4	60
31	721122805080	PEDIREDLA SIDDHU	2	40	2	40	2	40	3	60	3	60	2	40	2	40	3	60	3	80
32	721122805081	POJARI PRASANTH KUMAR	4	80	3	60	4	80	4	80	4	80	2	40	4	80	4	80	4	60
33	721122805082	POTNURU LOKESH	2	40	2	40	3	60	3	60	2	40	3	60	3	60	3	60	3	80
34	721122805083	PUJARI MAHALAXMI	3	60	3	60	3	60	3	60	2	40	4	80	3	60	3	60	3	60
35	721122805084	RAMSALA SIVA KUMAR	2	40	2	40	3	60	3	60	4	80	5	100	4	80	4	80	4	60
36	721122805085	SAKALA PUSHPA	5	100	2	40	5	100	5	100	4	80	4	80	5	100	4	80	5	80
37	721122805086	SEERAMDASU DEVI	4	80	5	100	5	100	4	80	4	80	5	100	4	80	4	80	4	100
38	721122805087	SINGAMPALLI NAGALAKSHMI	4	80	3	60	4	80	4	80	4	80	4	80	4	80	3	60	3	80
39	721122805088	SOMIREDDI RAMAGANA	5	100	5	100	5	100	5	100	5	100	5	100	5	100	4	80	5	60
40	721122805089	SOMIREDDI RAMANI	5	100	4	80	5	100	5	100	5	100	4	80	5	100	5	100	5	100
41	721122805090	TADI HEMALATHA	5	100	4	80	4	80	5	100	5	100	4	80	5	100	4	80	5	100
42	721122805091	TANGUDUBILLI MOUNIKA	5	100	4	80	4	80	5	100	5	100	5	100	4	80	4	80	4	100
43	721122805092	TARRA ARUNA	4	80	2	40	3	60	3	60	3	60	4	80	3	60	3	60	3	80
44	721122805093	VANNEPURI BABUJI	4	80	3	60	4	80	4	80	4	80	2	40	4	80	4	80	4	60
45	721122805094	VANTHALA RAVI	4	80	3	60	3	60	4	80	5	100	4	80	3	60	3	60	3	80
		<b>Percentage of students who got above 60%</b>		<b>86.66667</b>		<b>75.55556</b>		<b>86.66667</b>		<b>91.11111</b>		<b>91.11111</b>		<b>77.777778</b>		<b>82.2222</b>		<b>75.55556</b>		<b>60</b>
		<b>Attain CO</b>		<b>3</b>		<b>2</b>		<b>3</b>		<b>3</b>		<b>3</b>		<b>2</b>		<b>3</b>		<b>2</b>		<b>80</b>

## CO Attainment In-Direct Assessment

S.No.	Registered Number	Name of the student	CO1& CO2	%	CO3& CO4	%	CO5& CO6	%	CO7& CO8	%	CO9	%
1	721122805050	ADDURI LAKSHMI	4	80	4	80	5	100	5	100	5	100
2	721122805051	ALLANGI RAJESWARI	5	100	5	100	4	80	4	80	4	80
3	721122805052	BALIREDDY NAGALAKSHMI	4	80	5	100	5	100	4	80	5	100
4	721122805053	BANAM RAMA DEVI	5	100	5	100	5	100	4	80	4	80
5	721122805054	BHEEMAVARAPU SWATHI	5	100	4	80	5	100	5	100	5	100
6	721122805055	BOGADHI VANAJA	5	100	4	80	5	100	4	80	3	60
7	721122805056	BONDA SRI HARI PADAL	5	100	5	100	2	40	3	60	2	40
8	721122805057	BUDAI HARA GOVIND PADAL	4	80	3	60	2	40	4	80	2	40
9	721122805058	BURE DAMAYANTHI	5	100	4	80	4	80	5	100	5	100
10	721122805059	CHELLAPUREDDI UMA	3	60	5	100	5	100	5	100	5	100
11	721122805060	CHIMMITI NAGA PARVATHI	4	80	3	60	3	60	3	60	4	80
12	721122805061	DONDA JANAKI DEVI	4	80	2	40	2	40	3	60	2	40
13	721122805062	EMANDI MANIKRISHNA	3	60	4	80	3	60	3	60	2	40
14	721122805063	GANGUPAM PUJITHA	4	80	5	100	3	60	2	40	4	80
15	721122805064	ITHIREDDI RAMALAXMI	5	100	3	60	5	100	4	80	5	100
16	721122805065	KADIMI LAVANYA	5	100	4	80	5	100	5	100	5	100
17	721122805066	KALINGA VARALAKSHMI	4	80	4	80	4	80	4	80	4	80
18	721122805067	KONA POORNASRI	4	80	5	100	4	80	5	100	5	100
19	721122805068	KONA SAI PRIYANKA	5	100	4	80	5	100	5	100	4	80
20	721122805069	KORRA SHARON	3	60	2	40	2	40	2	40	4	80
21	721122805070	MADELA BHUDEVI	2	40	3	60	3	60	4	80	5	100
22	721122805071	MANDE CHAITANYA	2	40	2	40	2	40	3	60	3	60

23	721122805072	MOLLI KIRANMAYI	5	100	5	100	4	80	5	100	5	100
24	721122805073	MURALASETTI ALEKHYA JASMIN	5	100	5	100	5	100	5	100	5	100
25	721122805074	PACHIKURA MADHAVI	5	100	4	80	5	100	5	100	4	80
26	721122805075	PADALA VAMSI	4	80	4	80	4	80	2	40	5	100
27	721122805076	PAGI JAHNAVI	4	80	5	100	3	60	4	80	5	100
28	721122805077	PAMU ANJI NAIDU	2	40	2	40	2	40	2	40	3	60
29	721122805078	PANDRANKI NAGA KARTHIK	2	40	2	40	2	40	2	40	2	40
30	721122805079	PARRE PUSHPA	5	100	4	80	4	80	3	60	4	80
31	721122805080	PEDIREDLA SIDDHU	2	40	2	40	3	60	3	60	5	100
32	721122805081	POOJARI PRASANTH KUMAR	3	60	3	60	4	80	4	80	4	80
33	721122805082	POTNURU LOKESH	3	60	2	40	3	60	2	40	2	40
34	721122805083	PUJARI MAHALAXMI	4	80	3	60	3	60	2	40	2	40
35	721122805084	RAMSALA SIVA KUMAR	3	60	2	40	3	60	2	40	5	100
36	721122805085	SAKALA PUSHPA	4	80	3	60	5	100	5	100	4	80
37	721122805086	SEERAMDASU DEVI	4	80	5	100	4	80	4	80	2	40
38	721122805087	SINGAMPALLI NAGALAKSHMI	5	100	2	40	4	80	4	80	5	100
39	721122805088	SOMIREDDI RAMAGANA	5	100	5	100	5	100	5	100	5	100
40	721122805089	SOMIREDDI RAMANI	5	100	4	80	5	100	5	100	5	100
41	721122805090	TADI HEMALATHA	4	80	4	80	5	100	5	100	4	80
42	721122805091	TANGUDUBILLI MOUNIKA	5	100	4	80	4	80	5	100	5	100
43	721122805092	TARRA ARUNA	3	60	3	60	4	80	2	40	3	60
44	721122805093	VANNEPURI BABUJI	3	60	2	40	2	40	2	40	3	60
45	721122805094	VANTHALA RAVI	3	60	3	60	3	60	4	80	4	80
		<b>Percentage of students who got above 60%</b>		<b>88.88889</b>		<b>77.7778</b>		<b>82.2222</b>		<b>77.7778</b>		<b>82.2222</b>
		<b>level</b>		<b>3</b>		<b>2</b>		<b>3</b>		<b>2</b>		<b>3</b>

**Course Outcomes (COs) attainment calculation**

	<b>CO attainment</b>		
<b>CO</b>	<b>Direct Assessment</b>	<b>Indirect Assessment</b>	<b>CO Attainment = Direct Assessment x 0.9 + Indirect Assessment x 0.1</b>
CO1	3	3	3
CO2	2	3	2.1
CO3	3	2	2.9
CO4	3	2	2.9
CO5	3	3	3
CO6	2	3	2.1
CO7	3	2	2.9
CO8	2	2	2
CO9	3	3	3



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## Mapping of COs with POs

Course: Zoology course-2 (ANIMAL DIVERSITY, BIOLOGY OF CHORDATES)

Programme: BSc (Botany, Zoology, Chemistry)

	PO1	PO2	PO3	PO4	PO5	PO6	PSO1	PSO2	PSO3	PSO4
CO1	1	2	2	3	1	1	2	3	0	2
CO2	1	2	2	1	1	2	1	2	1	2
CO3	2	3	0	1	0	1	0	2	2	3
CO4	3	2	1	2	2	2	1	1	1	1
CO5	0	1	2	2	1	2	2	2	2	3
CO6	2	2	3	0	2	2	2	1	3	2
CO7	2	1	2	2	2	2	3	0	2	2
CO8	3	2	1	3	3	3	1	1	3	0
CO9	2	1	1	2	1	0	3	2	1	2

## Levels of correlation between COs and POs

Value	Descriptor
0	No Correlation
1	Low Correlation
2	Moderate Correlation
3	High Correlation





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## POs attainment

POs attainment is calculated using the CO attainment and level of CO-PO mapping.

PO	PO attainment
PO1	2.6
PO2	2.61
PO3	2.58
PO4	2.72
PO5	2.53
PO6	2.52
PSO1	2.72
PSO2	2.71
PSO3	2.52
PSO4	2.75

**For example**, PO1 is calculated using the COs that are mapped to PO1. From the PO-CO mapping table, PO1 is mapped to CO1, CO2, CO3, CO4, CO5, CO6, CO7, CO8, and CO9.

**POI attainment** = [(PO1-CO1) mapping level x CO1 attainment ] + [(PO1-CO2) mapping level x CO2 attainment]+[(PO1-CO3) mapping level x CO3 attainment]+[(PO1-CO4) mapping level x CO4 attainment]+ [(PO1-CO5) mapping level x CO5 attainment]+[(PO1-CO6) mapping level x CO6 attainment]+[(PO1-CO7) mapping level x CO7 attainment]+[(PO1-CO8) mapping level x CO8 attainment]+[(PO1-CO9) mapping level x CO9 attainment]/ [(PO1-CO1) mapping level + (PO1-CO2) mapping level+ (PO1-CO3) mapping level + (PO1-CO4) mapping level+(PO1-CO5) mapping level +(PO1-CO6) mapping level+(PO1-CO6) mapping level +(PO1-CO7) mapping level +(PO1-CO8) mapping level +(PO1-CO9) mapping level]

**PO1 attainment** =

$$((1 \times 3) + (1 \times 2.1) + (2 \times 2.9) + (3 \times 2.9) + (0 \times 3) + (2 \times 2.1) + (2 \times 2.9) + (3 \times 2) + (2 \times 3)) / (1 + 1 + 2 + 3 + 0 + 2 + 2 + 3 + 2)$$

**PO1 attainment** = 2.6