

B Sc V Semester (5.1)  
Paper-I  
ZOOLOGY (optional)

(Ecology, Evolution, Paleontology, Zoogeography, Wild life Conservation)

Total-hours, 50  
Marks-80

Ecology.

Earth as Living-Planet. Sub divisions of ecology, Scope of ecology, Biosphere	1 hr
Abiotic factors _____ Light, Temperature (Effect on Animals and Plants)	2hr
Biotic Factor Mutualism, Commensalism, Amensalism, Parasitism, Predation , Competition, Parasitism.	2hrs
Habitats	4hrs
Freshwater habitat — Lotic and Lentic systems Zonation of Sea, Marine Biota, Estuarine ecology, & Mangrooves Terrestrial habitat — A brief account of Biomes.	
<b>Ecological Adaptations</b> — Freshwater, Marine and Terrestrial.	
Biogeochemical Cycles - Principles and concepts of Water, Nitrogen, Carbon,	2hrs
Oxygen cycles	
Community Ecology-Community structure, Ecological niches, Edge effect, Stratification, Ecoton.	2hrs
Population <u>Ecology</u> : Density, natality, mortality. Age distribution	
Population growth, types and curves.	2hrs

## **Evolution.**

The Solar System  
Origin of Earth , Origin of Life and its theories 03hrs

The geological time scale 03hrs

Fossils: Definition and Kinds of fossils, How fossils are formed, Methods of Preservation, Connecting links and Living fossils. The importance of fossils 02hrs

Theories of Organic Evolution : 06hrs

Lamarckism, Darwinism, Mutation Theory  
And the Modern Synthesis Theory;( population gene Pool, Gene Frequency . Variations — gene mutation, chromosomal mutation; Isolation and recombination.Genetic drift,Hardiwienberg equilibrium )

Modes of Evolution : Microevolution, Macroevolution and Mega-evolution. 02 hrs

, Evolution of Man and Horse 04 hrs

### **Paleontology**

Mesozoic reptiles with a note on Dinosaurs. 03 hrs

**Zoogeography:** Zoogeographical realms of world ,  
A brief account of Wallace's line 03 hrs

### **Wildlife Conservation :**

Wildlife in India, Causes for the depletion of wildlife.  
Wild Life Conservation Techniques', methods'and measures  
Brief account of ; IUCN, WWF, Bombay Natural History Society,  
Indian Board for Wild Life, Red Data Book.  
Wild Life Act 1972 and its amendments in India, CITES.  
Project Tiger and Biosphere Reserve. 09hrs



### Total -11 Practicals

- 1; Study of fossils (vertebrate(3) and invertebrate(3)).  
1hrs
2. Mesozoic reptiles (Ichthyosaur, tyrannosaur, brontosaur, triceratops, archaeopteryx .  
1hr
3. Evolution of man (Homo-erectus. Hemo-habills. Homo-neandertalences)  
1hr
4. Evolution of Horse  
1hr
- 5 ;Connecting links and living fossils (Neopilina, Peripatus, Limulus, Latimaria; Archaeopteryx and Duckbill platypus)  
1hr
- 6 Study of threatened Animals of India (Tiger,Lion,singal horned rhinoceros  
1hr  
Musk deer,gaur,Golden langur,Loin tailed monkey.Python)  
1hr
- 7 ;Estimation of  $CO_2$  from different water samples  
1hr
- 8; Estimation of dissolved oxygen  
1hr
- 9; Estimation of Total hardness  
1hr
- 10;Study of Ecological Adaptations and Morphological peculiarities,;ex-Hermit crab, 1hr  
Draco,Stick insect,puffer fish,Exocoetus,Phrynosoma,chamaeleon and Bat.
- 11;Visit to nearby water body to study Ecosystem  
1hr

### REFERENCE BOOKS:-

Evolution : Odum

Organic Evolution: N.Arumugam  
Evolution, Dobzhansky, Ayala, Stebbins & Valentine  
Environmental Biology. Rastogi and Company, Meerut  
Evolution of the Vertebrates, Colbert E.H. John Wiley and Sons, New York  
Ecology; Principles and Application. Chapman, Cambridge university press  
Environmental Biology P.R. Trivedi and Gurudeep Raj.  
Recent Advances in Environmental Biology – Diwan and D.K. Arora  
Environmental Science; Eldon. D. Enger and Bradley. F, Smith

Suggestions for Practical Examination

SEM — V-5]

Q NO I) Estimation of Carbondioxide/O xgen/Total hardness	8marks
Q NO II) Evolution ( Two spottings )	4 marks
Q NO III ) Fossils ( Two spottings )	4 marks
Q NO IV) Identification (Zoogeography & Wild life)	4 marks
<b>Q NO V) Project on Local Biodiversity</b>	10 marks
Q NO. VI Viva	5 marks
Q NO. VII Journal	5 marks

Note 1 :- Examiners can alter the Scheme of marks for practical in consultation with the staff of the host college.

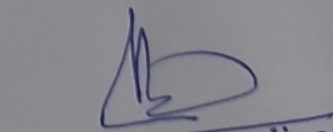
Note :2	Theory	Internal	20
marks		Final	80
marks	Practical	Internal	10
marks		Final	40

Note 3: Question paper pattern for THEORY examination

Q No. 1	02 marks	10* 02	
	= 20 marks		
30 marks	Q No. II	05 marks	06* 05 =
10 marks	Q No. III	10 marks	01* 10 =
10 marks	Q No. IV	10 marks	01* 10 =



Principal,  
S.B. Arts and KCP Science College  
VJAYAPUR



**IQAC, Co-ordinator**  
S.B.Arts & K.C.P.Science Colle  
Vijayapur.