



Re-Accredited B++ 2 B6 CGPA by NAAC

VEER NARMAD SOUTH GUJARAT UNIVERSITY

University Campus, Udhna-Magdalla Road, SURAT - 395 007, Gujarat, India.

વીર નર્મદ દક્ષિણ ગુજરાત યુનિવર્સિટી

યુનિવર્સિટી કેમ્પસ, ઉધના-મગદલા રોડ, સુરત - ૩૯૫ ૦૦૭, ગુજરાત, ભારત.

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સંદર્ભ:યુનિવર્સિટી પરિપત્ર ક્રમાંક:ઓથો./પરિપત્ર/સિલેબસ/૧૧૯૫૩/૨૦૨૫,તા.૨૬/૦૫/૨૦૨૫

-:પરિપત્ર:-

યુનિવર્સિટી સંલગ્ન વિજ્ઞાન વિદ્યાશાખા હેઠળની તમામ કોલેજોનાં આચાર્યશ્રીઓને જણાવવાનું કે, શૈક્ષણિક વર્ષ ૨૦૨૫-૨૬ થી અમલમાં આવેલ B.Sc. Zoology સેમેસ્ટર-૫ Practical Skeleton પેપરનો અભ્યાસક્રમ યુનિવર્સિટી કાર્યાલય પરિપત્ર ક્રમાંક:ઓથો./પરિપત્ર/સિલેબસ/૧૧૯૫૩/૨૦૨૫,તા.૨૬/૦૫/૨૦૨૫ થી પરિપત્રિત કરેલ છે જેમાં ZOP-MJ-501 (Biochemistry) Skeleton Practical ના અભ્યાસક્રમમાં પ્રાણીશાસ્ત્ર વિષયની અભ્યાસ સમિતિની તા.૨૦/૦૮/૨૦૨૫ ની સભાના ઠરાવ ક્રમાંક:૦૨ થી કરેલ સુધારો મંજૂર કરવા વિજ્ઞાન વિદ્યાશાખાને કરેલ ભલામણ વિજ્ઞાન વિદ્યાશાખાના અધ્યક્ષશ્રીએ વિદ્યાશાખાની મંજૂરીની અપેક્ષાએ વિદ્યાશાખાવતી ડીનશ્રીએ મંજૂર કરી એકેડેમિક કાઉન્સિલને કરેલ ભલામણ એકેડેમિક કાઉન્સિલની તા.૨૪/૧૨/૨૦૨૪ ની સભાના ઠરાવ ક્રમાંક:૩૫૩ અન્વયે માન.કુલપતિશ્રીને આપેલ સત્તા અંતર્ગત માનનીય કુલપતિશ્રી દ્વારા મંજૂર કરેલ છે, જે સંદર્ભે B.Sc.Zoology નો સુધારા સહિતનો સંપૂર્ણ Practical Skeleton પેપરનો અભ્યાસક્રમ આ સાથે સામેલ છે,જેનો અમલ કરવા આથી જાણ કરવામાં આવે છે.

(બિડાણ: ઉપર મુજબ)

ક્રમાંક:ઓથો./પરિપત્ર/સિલેબસ/૨૩૨૬૫/૨૦૨૫

તા.૩૦/૦૮/૨૦૨૫

Wife
કુલસચિવ

પ્રતિ,

૧) યુનિવર્સિટી.સંલગ્ન વિજ્ઞાન વિદ્યાશાખા હેઠળની તમામ કોલેજોનાં આચાર્યશ્રીઓ.

..... આપશ્રીની કોલેજના સંબંધિત શિક્ષકોને જાણ કરી અમલ કરવા સારું.

૨) અધ્યક્ષશ્રી, વિજ્ઞાન વિદ્યાશાખા.

૩) પરીક્ષા નિયામકશ્રી,પરીક્ષા વિભાગ, વીર નર્મદ દ. ગુ. યુનિવર્સિટી, સુરત.

.....તરફ જાણ તેમજ અમલ સારું.

VEER NARMAD SOUTH GUJARAT UNIVERSITY, SURAT.



**Undergraduate Programme
In
Zoology**

PRACTICAL SKELETON PAPERS

[3 Years (Degree) & 4 Years (Honours/Honours with Research)]

VEER NARMAD SOUTH GUJARAT UNIVERSITY, SURAT

Ashish

VEER NARMAD SOUTH GUJARAT UNIVERSITY, SURAT.

F. Y. B. Sc. – SEM – I - NEP

PRACTICAL EXAMINATION

ZOOLOGY: ZOP – MJ – 101

(Non – Chordates and Economic Zoology) – Credit - 01

Time: 02.00 h

Total marks: 13

NOTE: Certified Journal is Compulsory.

Q.1 Draw a neat and labelled diagram of _____ system (05)

Q.2 Identify the specimen as per the instruction. (08)

1. Identify and give salient feature (Invertebrate)
2. Identify and give salient feature (Invertebrate)
3. Identify and describe (Permanent slide of Cockroach)
4. Identify and describe (Vermicompost/Pearl culture)

ZOOLOGY: ZOP – MJ – 102

(Chordates and Hematology) – Credit - 01

Time: 02.00 h

Total Marks-13

NOTE: Certified Journal is Compulsory.

Q.1 Draw a neat and labelled diagram of system. (05)

Or

Make a temporary preparation of your blood.

Q.2 Identify the specimen as per the instruction. (06)

1. Identify and give salient feature (Vertebrate)
2. Identify and give salient feature (Vertebrate)
3. Identify and describe (Mounting of Scoliodon/Microscope)

Q.3 Journal (Paper 101 & 102) (02)

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F. Y. B. Sc. – SEM – I - NEP

PRACTICAL EXAMINATION

ZOOLOGY: ZOP – ME – 101

(Non – Chordates and Chordates) – Credit - 02

Time: 04.00 h

Total marks: 25

NOTE: Certified Journal is Compulsory.

Q.1. Draw a neat and labelled diagram of _____ system (9)

Q.2. Identify the specimen as per the instruction. (12)

1. Identify and give silent feature. (Invertebrates)
2. Identify and give silent feature. (Invertebrates)
3. Identify and give silent feature. (Vertebrates)
4. Identify and give silent feature. (Vertebrates)
5. Identify and describe. (Permanent slide of Invertebrate)
6. Identify and describe. (Mounting of Vertebrate)

Q.3. Viva- voce (2)

Q.4. Journal (2)

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F. Y. B. Sc. – SEM – II - NEP

PRACTICAL EXAMINATION

ZOOLOGY: ZOP – MJ – 201

(Non Chordates and Chordates Animal Diversity) – Credit - 01

Time: 02.00 h

Total marks: 13

NOTE: Certified Journal is Compulsory.

Q.1. Write a key for identification of poisonous and Non-poisonous snakes with labelled diagram/ Draw life cycle of *Bombax mori* (05)

OR

Q.1. Draw Water vascular system in Asterozoa/ Draw with labelled diagram of different types of beak or feet.

Q.2. Identify the specimen as per the instruction (08)

1. Identify and describe. (Nutrition/Spicules)
2. Identify and describe. (Cnidaria/Parasitic adaptation)
3. Identify and describe. (Annelid/Shell in Mollusca)
4. Identify and describe. (Pisces/Parental care in Amphibia/Mammals)

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F. Y. B. Sc. – SEM – II - NEP

PRACTICAL EXAMINATION

ZOOLOGY: ZOP – MJ – 202

**(Evolution and Ethology, Ecological adaptation and Wildlife Biology) –
Credit - 01**

Time: 02.00 h

Total marks: 13

NOTE: Certified Journal is Compulsory.

Q.1. Draw life cycle of Termites (05)

OR

Q.1. Identify, describe given National park and Sanctuary

Q.2. Identify the specimen as per the instruction (06)

1. Identify and describe. (Ecological adaptation)
2. Identify and describe. (Evolution characteristics)
3. Identify and describe. (Nesting or social behaviour)

Q.3. Journal (201 & 202) (02)

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F. Y. B. Sc. – SEM – II - NEP

PRACTICAL EXAMINATION

ZOOLOGY: ZOP – ME – 201

(Chordates Animal Diversity, Evolution and Ethology, Ecological adaptation and Wildlife Biology) – Credit - 02

Time: 04.00 h

Total marks: 25

NOTE: Certified Journal is Compulsory.

Q.1. Write a key for identification of poisonous and Non-poisonous snakes with labelled diagram/ Draw with labelled diagram of different types of beak or feet. (07)

OR

Q.1. Draw life cycle of Termites/ Identify, describe given National Park and Sanctuary.

Q.2. Identify the specimen as per the instruction (12)

1. Identify and describe. (Pisces)
2. Identify and describe. (Parental care in Amphibia)
3. Identify and describe. (Mammals)
4. Identify and describe. (Evolution characteristics)
5. Identify and describe. (Nesting or social behaviour)
6. Identify and describe. (Ecological adaptation)

Q.3. Viva- voce (03)

Q.4. Journal (03)

J. Ashish

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In
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PRACTICAL SKELETON PAPERS

[3 Years (Degree) & 4 Years (Honours/Honours with Research)]

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S. Y. B. Sc. – SEM – III - NEP

PRACTICAL EXAMINATION

ZOOLOGY: ZOP – MJ – 301

(Biochemistry and Animal Physiology - I) – Credit - 02

Time: 04.00 h

Total marks: 25

NOTE: Certified Journal is Compulsory.

- Q.1 Preparation of TWO atomic models (04)
- Q.2 Preparation of Standard solutions (02)
- Q.3 Estimation of hemoglobin in blood (05)

OR

Differential Count of WBC

- Q.4 Total count of RBC OR Total count of WBC (06)
- Q.5 Write the specimen as per instructions (06)
1. Identify and describe
 2. Identify and describe
 3. Identify and describe
- Q.6 Journal (02)

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S. Y. B. Sc. – SEM – III - NEP

PRACTICAL EXAMINATION

ZOOLOGY: ZOP – MJ – 302

(Non - Chordates and Chordates - I) – Credit - 02

Time: 04.00 h

Total marks: 25

NOTE: Certified Journal is Compulsory.

Q.1 Draw a labelled diagram of _____ Earthworm (04)

Q.2 Draw a labelled diagram of _____ Labeo rohita (05)

Q.3 Write the specimen as per instructions (14)

1. Identify and classify with giving reasons (Invertebrates)
2. Identify and classify with giving reasons (Invertebrates)
3. Identify and classify with giving reasons (Invertebrates)
4. Identify and classify with giving reasons (vertebrates)
5. Identify and classify with giving reasons (vertebrates)
6. Identify and classify with giving reasons (vertebrates)
7. Identify and describe (Mounting)

Q.4 Journal (02)

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SURAT.**



**Undergraduate Programme
In
Zoology**

PRACTICAL SKELETON PAPERS

**[3 Years (Degree) & 4 Years (Honours/Honours with Research)]
VEER NARMAD SOUTH GUJARAT UNIVERSITY, SURAT**

Undergraduate Programme in Zoology as per NEP 2020[3 Years (Degree) & 4 Years (Honours/Honours with Research)]

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VEER NARMAD SOUTH GUJARAT UNIVERSITY, SURAT.

T. Y. B. Sc. – SEM – V - NEP

PRACTICAL EXAMINATION

ZOOLOGY: ZOP – MJ – 501(Revised)

(Biochemistry) – Credit - 02

Time: 04.00 h

Total marks: 25

NOTE: Certified Journal is Compulsory.

- Q. 1. Estimation of total Protein by Lowry's method (10)
OR
Effect Temperature and pH on salivary amylase activity.
- Q. 2. Draw any one Metabolic cycle (Glycolysis, Krebs Cycle, Gluconeogenesis, Urea cycle, β – Oxidation of Fatty acid) (04)
- Q.3. **Identify and Describe** (06)
1. Identify and Describe (Purine/pyrimidine)
2. Identify and Describe (DNA/RNA)
3. Identify and Describe (Lineweaver-Burk plot)
- Q. 4. Viva – voce (03)
- Q. 5. Journal (02)

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T. Y. B. Sc. – SEM – V - NEP

PRACTICAL EXAMINATION

ZOOLOGY: ZOP – MJ – 502

(Non Chordates and Chordates - III) - Credit - 02

Time: 04.00 h

Total marks: 25

NOTE: Certified Journal is Compulsory.

Q. 1 Draw labelled diagram of _____ Leech. (05)

Q. 2 Identify and describe the bones of **girdles/ Limbs**. (03)

Q. 3 Write the specimens as per instructions. (12)

1. Identify and classify with giving reasons (Invertebrates)

2. Identify and classify with giving reasons (Invertebrates)

3. Identify and describe/ classify with giving reasons (Invertebrates)

4. Identify and classify with giving reasons (Vertebrates)

5. Identify and classify with giving reasons (Vertebrates)

6. Identify and describe (Vertebrates)

Q. 4 Viva voce (03)

Q. 5 Journal (02)

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T. Y. B. Sc. – SEM – V - NEP

PRACTICAL EXAMINATION

ZOOLOGY: ZOP – MJ – 503

(Bhartiya Gyan Parampara in Zoology – I - BGP) - Credit - 02

Time: 04.00 h

Total marks: 25

NOTE: Certified Journal is Compulsory.

Q-1 Write in detail ancient classification of animals/ Write significance of Kamdhenu Cow. (10)

Q-2 Identify the specimen as per the Instruction. (10)

1. Identify and describe.(Types of Honey base on colour)
2. Identify and describe.(Types of Panchagavya)
3. Identify and describe.(Milch breed of Cow)
4. Identify and describe.(Draught resistant breeds of Cow)
5. Identify and describe.(Dual breeds of Cow)

Q-3 Viva-voice (03)

Q-4 Journal (02)

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**T. Y. B. Sc. – SEM – V - NEP
PRACTICAL EXAMINATION
ZOOLOGY: ZOP – SEC – 501
(Bioinstrumentation) - Credit - 01**

Time: 02.00 h

Total marks: 13

NOTE: Certified Journal is Compulsory.

Q. 1 Write the specimens as per instructions. (08)

1. Identify and describe its principle
2. Identify and describe its structure
3. Identify and describe its application
4. Identify and describe

Q. 2 Viva voce (03)

Q. 3 Journal (02)

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T. Y. B. Sc. – SEM – V - NEP

PRACTICAL EXAMINATION

ZOOLOGY: ZOP – ME – 501

(Biochemistry) - Credit - 02

Time: 04.00 h

Total marks: 25

NOTE: Certified Journal is Compulsory.

- Q. 1. To perform qualitative tests for carbohydrates. (08)
OR
Q. 1. To perform qualitative tests for lipids.
OR
Q. 1. To perform qualitative tests for protein.
- Q. 2. To measure the pH of various solutions (04)
- Q.3. 1. Identify and Describe (Purine/pyrimidine) (08)
2. Identify and Describe (DNA)
3. Identify and Describe (RNA)
4. Identify and Describe (Chemical bond)
- Q. 4. Viva – voce (03)
- Q. 5. Journal (02)

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T. Y. B. Sc. – SEM – V - NEP

PRACTICAL EXAMINATION

ZOOLOGY: ZOP – ME – 502

(Non Chordates and Chordates - III) - Credit - 02

Time: 04.00 h

Total marks: 25

NOTE: Certified Journal is Compulsory.

- Q. 1 Draw labelled diagram of _____ Leech. (05)
- Q. 2 Identify and describe the bones of **girdles/ Limbs**. (03)
- Q. 3 Write the specimens as per instructions. (12)
1. Identify and classify with giving reasons (Invertebrates)
 2. Identify and classify with giving reasons (Invertebrates)
 3. Identify and describe/ classify with giving reasons (Invertebrates)
 4. Identify and classify with giving reasons (Vertebrates)
 5. Identify and classify with giving reasons (Vertebrates)
 6. Identify and describe (Vertebrates)
- Q. 4 Viva voce (03)
- Q. 5 Journal (02)

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T. Y. B. Sc. – SEM – VI - NEP

PRACTICAL EXAMINATION

ZOOLOGY: ZOP – MJ – 601

(Animal Physiology) – Credit - 02

Time: 04.00 h

Total marks: 25

NOTE: Certified Journal is Compulsory.

Q.1. To perform a practical on lung capacity: Tidal Volume (TV),
Inspiratory Reserve Volume (IRV), Expiratory Reserve Volume
(ERV) and Vital Capacity (VC) etc. (10)

OR

Hormonal control and regulation of glands: Pituitary gland,
Thyroid gland, Parathyroid gland.

OR

To study the rate of oxygen consumption of Albino rat or black rat.

Q.2. 1. Identify and Describe (Neurons / Neuroglial Cells) (10)
2. Identify and Describe (Synapse type)
3. Identify and Describe (Sense Organ)
4. Identify and Describe (Histological slide of Endocrine gland)
5. Identify and Describe (Pathology of Endocrine Gland)

Q.3. Viva – voce (03)

Q.4. Journal (02)

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T. Y. B. Sc. – SEM – VI - NEP

PRACTICAL EXAMINATION

ZOOLOGY: ZOP – MJ – 602

(Non Chordates and Chordates - IV) - Credit - 02

Time: 04.00 h

Total marks: 25

NOTE: Certified Journal is Compulsory.

- Q. 1 Draw labelled diagram of _____ Sepia. (05)
- Q. 2 Draw labelled diagram of _____ Pigeon. (05)
- Q. 3 Write the specimens as per instructions. (10)
1. Identify and classify with giving reasons (Invertebrates)
 2. Identify and classify with giving reasons (Invertebrates)
 3. Identify and classify with giving reasons (Vertebrates)
 4. Identify and classify with giving reasons (Vertebrates)
 5. Identify and describe
- Q. 4 Viva voce (03)
- Q. 5 Journal (02)

Dr. Ashish

VEER NARMAD SOUTH GUJARAT UNIVERSITY, SURAT.

T. Y. B. Sc. – SEM – VI - NEP

PRACTICAL EXAMINATION

ZOOLOGY: ZOP – MJ – 603

(Bhartiya Gyan Parampara in Zoology – II - BGP) - Credit - 02

Time: 04.00 h

Total marks: 25

NOTE: Certified Journal is Compulsory.

Q-1 Write Snake deities that are worshipped / Write Key for Identification of Venomous and Non-venomous Snakes (10)

Q-2 Identify the specimen as per the Instruction. (10)

1. Identify and describe.(Species of Honey bees/ Social organization of Honey bees)
2. Identify and describe.(Medicinal importance of Honey)
3. Identify and describe.(Type of Silk Worm))
4. Identify and describe.(Bird symbolism in Indian art and literature)
5. Identify and describe.(Birds in Indian culture)

Q-3 Viva-voice (03)

Q-4 Journal (03)

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T. Y. B. Sc. – SEM – VI - NEP

PRACTICAL EXAMINATION

ZOOLOGY: ZOP – ME – 601

(Animal Physiology) – Credit - 02

Time: 04.00 h

Total marks: 25

NOTE: Certified Journal is Compulsory.

Q. 1. To determine the composition of blood through blood smear preparation and staining (10)

OR

To measure respiratory rates to understand the mechanism of breathing

Q.2. 1. Identify and Describe (histology slides of Salivary Gland/stomach / (10)
small or large intestine)

2. Identify and Describe (structure of the kidneys /nephron)

3. Identify and Describe (structure of the lungs/trachea/bronchi)

4. Identify and Describe (Oxygen/Carbon dioxide gas exchange)

5. Identify and Describe (Systemic/Pulmonary circulation)

Q. 3. Viva – voce (03)

Q. 4. Journal (02)

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VEER NARMAD SOUTH GUJARAT UNIVERSITY, SURAT.

T. Y. B. Sc. – SEM – VII - NEP

PRACTICAL EXAMINATION

ZOOLOGY: ZOP – ME – 701

(Non Chordates and Chordates - IV) - Credit - 02

Time: 04.00 h

Total marks: 25

NOTE: Certified Journal is Compulsory.

- Q. 1 Draw labelled diagram of _____ Sepia. (05)
- Q. 2 Draw labelled diagram of _____ Pigeon. (05)
- Q. 3 Write the specimens as per instructions. (10)
1. Identify and classify with giving reasons (Invertebrates)
 2. Identify and classify with giving reasons (Invertebrates)
 3. Identify and classify with giving reasons (Vertebrates)
 4. Identify and classify with giving reasons (Vertebrates)
 5. Identify and describe
- Q. 4 Viva voce (03)
- Q. 5 Journal (02)

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