

Roll No.

Paper Code: WA-200701

M A Semester I ATKT Examination March 2021

Subject- ENGLISH

Paper Title: Poetry

Paper: I

Time Allowed: 03.00 Hours

Maximum Marks: 80

Minimum Pass Mark:29

Note: Question No. 1 is compulsory. Answer **Four (04)** more Essay type questions. All questions carry equal marks.

1. Write notes on any **Two** of the following:

2 x 8= 16

i) She's all states, and all princes, I,  
Nothing else is.

Princes do but play us; compared to this,  
All honor's mimic, all wealth alchemy.

ii) We're tapers too, and at our own cost die,  
And we in us find the eagle and the dove.  
The phoenix riddle hath more wit  
By us; we two being one, are it.

iii) But thy eternal summer shall not fade,  
Nor lose possession of that fair thou ow'st;  
Nor shall death brag thou wander'st in his shade,  
When in eternal lines to time thou grow'st:

iv) The boast of heraldry, the pomp of pow'r,  
And all that beauty, all that wealth e'er gave,  
Awaits alike th' inevitable hour.  
The paths of glory lead but to the grave.

2. Discuss Chaucer's portrayal of ecclesiastical characters in Prologue.

3. Write critical appreciation of 'The Sun Rising'.

4. Briefly analyze Shakespeare's treatment of love in his sonnets.
5. 'Satan is a rebel hero'- elaborate with reference to Paradise Lost Book I.
6. Write a note on Milton's poetic style.
7. Analyze Rape of the Lock as a mock epic.
8. Critically appreciate 'Elegy Written in a Country Churchyard'.
9. What are the salient features of Donne's poetry?

\*\*\*\*\*

**WA - 200703**  
**M.A.ENGLISH**  
**(I SEMESTER) (ATKT)**  
**Examination- Dec.-2020**  
**Paper - III**  
**PROSE**

**Time:- Three Hours ]**

**[Maximum Marks:80**

---

**Note: Note: Question No. 1 is compulsory. Attempt any four questions from optional section.  
All questions carry equal marks.**

---

1. Explain with reference to the context any two of the following: **2X8=16**
- (a) Crafty men condemn studies, Simple men admire them and wise men use them, for they teach not their own use but that is a wisdom without them, and above them, own by observation.
- (b) Sunday clears away the rust of the whole week, not only as it refreshes in their minds the notions of religion but as it puts both the sexes upon appearing in their most agreeable forms, and exacting all such qualities as are apt to give them a figure in the eye b the village.
- (c) Children love to listen to stories about their elders when they were children to stretch their imagination to the conception of a tradition great uncle or grandma who they never saw.
- (d) The excitement of the departure puts him in key for that I the arrival whatever he does is not only a reward in itself but will be fuethue rewarded in the seques. And so pleasure leads on to pleasure in an endless claim.
- 4X16=64**
2. Write a critical note on bacon as an Essayist with special reference to Essays Prescribed in your course.
- Or
- Thematically analyse bacon's Essay of studies also Throw some light on bacon's prose Style.
3. Account for the popularity of Addison as an Essayist.
- Or
- Write the summary of "Sir Roger at Home."
4. Bring out the theme of Milton's Areopagitica?
5. Write about the mingling of humour and pathos in the Essays b lamb.
6. Critically analyse Stevenson's Essay Apology for Idles.
7. Critically Examine Carlyle's views on hero as a poet.

First Semester ATKT Examination, 2020-21  
Compulsory

Paper-IV (Fiction)

Time allowed: Three Hours

Maximum Marks : 80

Minimum Passing Marks : 29

Note: Question No. 1 is compulsory. Attempt four more Essay Type Questions. All questions carry equal marks.

**Compulsory Question:**

1. Write short notes on any two of the following: (1 X 16 = 16)

- (a) Development of English Novel.
- (b) Characteristics of Victorian Novel.
- (c) Picaresque Novel.
- (d) Stream of Consciousness Technique

**Optional Questions:**

Attempt any four of the following: (4 X 16 = 64)

- 2. Discuss Gulliver's Travels as a satire on human follies.
  - 3. Comment on the Master- Slave relationships presented in Robinson Crusoe.
  - 4. Describe the comic elements in Joseph Andrews.
  - 5. Evaluate Charles Dickens as a novelist
  - 6. Critically analyse the role of fate and chance as applied in The Tess of D'Urbervilles.
  - 7. Delineate character sketch of Mrs. Dalloway.
-

WA – 200801 CV-19  
M.A. Geography (I Semester)  
Examination Feb. 2021  
**GEOMORPHOLOGY**  
Paper - I

Time : Three Hours]

[Maximum Marks : 80  
[Minimum Pass Marks : 29

नोट : किन्हीं चार प्रश्नों के उत्तर दीजिए। सभी प्रश्नों के अंक समान हैं।  
Note : Attempt any four questions. All questions carry equal marks.

1. भू-आकृति विज्ञान की प्रकृति एवं विषय-क्षेत्र का वर्णन कीजिए।  
Describe the nature and scope of Geomorphology.
2. प्लेट विवर्तन सिद्धांत की व्याख्या कीजिए।  
Explain the theory of Plate Tectonics.
3. प्राट एवं एयरी के समस्थिति की संकल्पना का परीक्षण कीजिए।  
Examine the concept of Pratts and Airy's concept of Isostasy.
4. कार्स्ट प्रदेश के स्थलरूपों का वर्णन कीजिए।  
Describe the landforms of karst region.
5. एल.सी.किंग अथवा डब्ल्यू.एम.डेविस के ढालों के विकास के सिद्धांत का आलोचनात्मक परीक्षण कीजिए।  
Critically examine the slope evolution theory of L.C.King or W.M. Davis.
6. नदीय भू-आकृतिक चक्र की विवेचना कीजिए।  
Discuss the fluvial geomorphic cycle.
7. वलिय संरचना वाले क्षेत्रों में अपवाह प्रणाली के प्रतिरूपों के विकास की विवेचना कीजिए।  
Discuss the development of drainage patterns in the regions of folded structure.
8. व्यावहारिक भू-आकृति विज्ञान के महत्व को विस्तारपूर्वक समझाइए।  
Explain in detail the importance of Applied Geomorphology.

WA – 200802 CV-19  
M.A. Geography (I Semester)  
Examination Feb. 2021  
CLIMATOLOGY  
Paper - II

Time : Three Hours]

[Maximum Marks : 80  
[Minimum Pass Marks : 29

नोट : किन्हीं चार प्रश्नों के उत्तर दीजिए। सभी प्रश्नों के अंक समान हैं।  
Note : Attempt any four questions. All questions carry equal marks.

1. वायुमण्डल के संगठन एवं संरचना का वर्णन कीजिए।  
Describe the composition and structure of atmosphere.
2. सूर्यताप के वितरण को प्रभावित करने वाले कारकों का वर्णन कीजिए।  
Explain the factor which affect the distribution of Insolation.
3. ग्रहीय पवनों की उत्पत्ति एवं प्रकारों का वर्णन कीजिए।  
Describe the origin and types of planetary winds.
4. संघनन का क्या अर्थ है? संघनन के विभिन्न रूपों का वर्णन कीजिए।  
What is the meaning of condensation. Describe the various types of condensation.
5. वायु राशियों क्या हैं? उनका वर्गीकरण प्रस्तुत कीजिए।  
What are air masses? Classify them.
6. शीतोष्ण कटिबंधीय चक्रवातों की उत्पत्ति तथा विश्व वितरण की व्याख्या कीजिए।  
Describe the origin and world distribution temperate Cyclones.
7. विश्व की जलवायु का सामान्य वर्गीकरण प्रस्तुत कीजिए।  
Give the general classification of world climate.
8. भू-मण्डलीय तापन क्या है? इसके उद्भव के क्या कारण हैं?  
What is Global Warming? What are the causes of its occurrence?

WA – 200803 CV-19  
M.A. Geography (I Semester)  
Examination Feb. 2021  
**HISTORY OF GEOGRAPHICAL THOUGHT**  
Paper - III

Time : Three Hours]

]Maximum Marks : 80  
]Minimum Pass Marks : 29

नोट : किन्हीं चार प्रश्नों के उत्तर दीजिए। सभी प्रश्नों के अंक समान हैं।  
Note : Attempt any four questions. All questions carry equal marks.

1. विज्ञान के वर्गीकरण में भूगोल के स्थान की विवेचना कीजिए।  
Discuss the place of geography in the classification of science.
2. क्षेत्रीय विभिन्नताओं के विज्ञान के रूप में भूगोल की ब्याख्या कीजिए।  
Discribe the geography as a science of a regional differentiation.
3. प्राचीन भारतीय साहित्य में उपलब्ध भौगोलिक ज्ञान का वर्णन कीजिए।  
Describe the geographical knowledge available in ancient Indian Literature.
4. अरब भूगोलवेत्ताओं के योगदान की समीक्षा कीजिए।  
Examine the Contribution of Arab Geographers.
5. भूगोल में मात्रात्मक क्रांति की उपयोगिता एवं प्रभाव की विवेचना कीजिए।  
Discuss the utility and impact of quantitative revolution in Geography.
6. मॉडल क्या है, उनका वर्गीकरण प्रस्तुत कीजिए एवं भौगोलिक विश्लेषण में इनकी उपयोगिता समझाइए।  
What are models, present their classification and explain their utility in the geographical analysis.
7. भूगोल के भविष्य पर एक निबंध लिखिए।  
Write an essay on the future of Geography.
8. आचरणवाद से आप क्या समझते हैं? आचरणपरक भूगोल के उपगमों की विवेचना कीजिए।  
What do you understand by behaviouralism? Discuss the approaches of behavioral geography.

Roll No .....

Paper Code WA200804

Subject: Geography

M.A Semester-I Examination Feb-2021

Paper :IV

*Paper Title : Geography of India*

Time: 3 Hours

Maximum Marks: 80

Minimum Marks: 29

नोट: किन्ही चार प्रश्नों के उत्तर दीजिए । सभी प्रश्नों के अंक समान है।

Note: Attempt any FOUR questions. All questions carry equal marks .

प्रश्न 1:- उत्तरी भारत के अपवाह तंत्र की व्याख्या कीजिए ।

Explain the drainage system of northern India .

प्रश्न 2:- भारतीय वन वर्षा का अनुसरण करते हैं । वनों का वितरण प्रस्तुत कीजिए।

Indian forests is influenced by rainfall pattern . Explain the distribution of forests .

प्रश्न 3:- भारतीय कृषि समस्याओं का विश्लेषणात्मक परीक्षण कीजिए ।

Explain Indian Agricultural problems analytically

प्रश्न 4:- भारत में चाय की कृषि के लिए अनुकूल भौगोलिक दशाओं तथा उत्पादक क्षेत्रों का विवरण दीजिए।

Describe the required geographical condition and producing areas of Tea in India .

प्रश्न 5:- भारत में कोयला के उत्पादन एवं वितरण की विवेचना कीजिए।

Explain the production and distributon of Coal in India.

प्रश्न 6:- भारत तक लोहा-इस्पात उद्योग के स्थानीयकरण, विकास एवं वितरण का वर्णन कीजिए ।

Describe the localization development and distribution of Iron and steel industry in India.

प्रश्न 7:- भारत में बाक्साइट के उत्पादन एवं वितरण की विवेचना कीजिए ।

Explain the production and distribution of Bauxite in India.

प्रश्न 8:- ओ.एच. के. स्पेट के अनुसार भारत का प्रादेशिक विभाजन कीजिए ।

Give the regional division of India according to O.H.K. State .



नोट : सभी प्रश्न अनिवार्य हैं? सभी प्रश्नों के अंक विनिर्दिष्ट हैं। निर्देशानुसार हल कीजिए।

क. निम्नलिखित में से किन्हीं तीन प्रश्नों के उत्तर दीजिए—

20X3=60

1. हिन्दी साहित्य के इतिहास लेखन की परंपरा पर प्रकाश डालिए।
2. आचार्य रामचन्द्र शुक्ल के काल विभाजन की समीक्षा कीजिए।
3. क्या हिन्दी साहित्य के इतिहास के पुनर्लेखन की आवश्यकता है? इसमें आने वाली समस्याओं और उनके निराकरण पर उचित अभिमत प्रकट कीजिए।
4. आदिकाल के प्रमुख कविया, उनकी रचनाओं एवं सामान्य प्रवृत्तियों का उल्लेख कीजिए।
5. भक्तिकाल की ज्ञानाश्रयी शाखा की प्रमुख विशेषताएं बताइये।
6. रीतिकाल की ऐतिहासिक पृष्ठभूमि, नामकरण पर प्रकाश डालते हुए रीतिकालीन कवियों का वर्गीकरण कीजिए।

ख. संक्षिप्त टिप्पणी लिखिए (काई तीन)

5X3=15

1. हिन्दी साहित्य इतिहास लेखन की आधारभूत सामग्री।
2. हिन्दी साहित्य इतिहास के काल विभाजन संबंधी विद्वानों के मत।
3. रीतिकालीन काव्य की तीन विशेषताएं
4. भक्ति आंदोलन का उदय।
5. रीति मुक्त कवि
6. राम भक्ति शाखा की तीन विशेषताएं
7. अष्टछाप कवि
8. तुलसी की भक्ति भावना

ख. वस्तुनिष्ठ/अति लघुउत्तरीय प्रश्न (काई 5)

1X5=5

1. हिन्दी साहित्य के इतिहास के प्रमुख लेखक कौन हैं?
2. जार्ज ग्रियर्सन द्वारा लिखे गये इतिहास ग्रंथ का नाम बताइए।
3. रामचन्द्र शुक्ल द्वारा रचित हिन्दी साहित्य का इतिहास कब प्रकाशित हुआ।
4. आदिकाल को चारण काल किसने कहा है?
5. पृथ्वीराज रासो के रचयिता का नाम बताइये।
6. हिन्दी के किस कवि को वाणी का डिक्टेटर कहा जाता है?
7. पद्मावत की काव्यभाषा क्या है?
8. भक्तिकाल की समय सीमा क्या है
9. सूरदास किस रस के सम्राट माने जाते हैं
10. रीतिकालीन कवि बिहारी के ग्रंथ का नाम बताइये।

Roll No:.....

Paper Code WA- 201001

**M.A. Semester- I ATKT Examination Feb. – 2021**

**Subject: History**

**Paper: I**

Paper Title: Historiography, Concept, Methods and Tools – part-I

**Time: 3:00 Hour**

**Maximum Marks: 80**

**Minimum Marks: 29**

**नोट – किन्हीं चार प्रश्नों के उत्तर दीजिए। सभी प्रश्नों के अंक समान हैं।**

**Note – Attempt any four questions. All questions carry equal Marks.**

प्रश्न 01. इतिहास की उत्पत्ति पर प्रकाश डालते हुए इतिहास के अर्थ का परीक्षण कीजिये।

**Throw light on the origin of History, examine the meaning of History.**

प्रश्न 02. “इतिहासकार तथ्यों को बुलवाता है क्योंकि मृत ऐतिहासिक तथ्य स्वयं नहीं बोलते हैं।” स्पष्ट कीजिये।

**“The historian calls the facts because the dead do not speak historical facts themselves.” Explain it.**

प्रश्न 03. इतिहास में कारण की अवधारणा का वर्णन कीजिये।

**Describe the concept of historical causation.**

प्रश्न 04. “भूगोल के बिना इतिहास एवं इतिहास के बिना भूगोल की कल्पना असंभव है।” इस कथन की विवेचना कीजिये।

**“It is impossible to imagine History without Geography and Geography without History.” Discuss this statement.**

प्रश्न 05. पूर्वाग्रह क्या है? इतिहास में पूर्वाग्रह के कारण बताइये।

**What is Bias? Explain the causes of Bias in History.**

प्रश्न 06. इतिहास का राजनीतिशास्त्र से संबंधों का मूल्यांकन कीजिये।

**Evaluate the relation between History and Political Science.**

प्रश्न 07. इतिहास लेखन की यूनानी-रोमन परम्परा की समीक्षा कीजिये।

**Review a description of Careeco-Roman tradition of historiography.**

प्रश्न 08. अरबी एवं फारसी इतिहास लेखन की परम्परा का वर्णन कीजिये।

**Describe a description of Arabic and Persian historiography.**

Roll No:.....

Paper Code WA- 201104

**M.A. Semester I ATKT Examination Feb. – 2021**

Subject: Political Science

Paper Title: International Politics Theory end

Paper: IV

Time: 3:00 Hour

Maximum Marks: 80

Minimum Marks: 29

नोट – किन्हीं चार प्रश्नों के उत्तर दीजिए। सभी प्रश्नों के अंक समान हैं।

**Note – Attempt any four questions. All questions carry equal Marks.**

प्रश्न 01. अन्तर्राष्ट्रीय राजनीति की परिभाषा एवं क्षेत्र की विवेचना कीजिए?

**Discuss the definition and scope of International Politics?**

प्रश्न 02. अन्तर्राष्ट्रीय राजनीति के खेल सिद्धांत को समझाइये?

**Explain the "Game Theory" of International Politics?**

प्रश्न 03. अन्तर्राष्ट्रीय संबंधों में विचारधारा की क्या भूमिका होती है। स्पष्ट कीजिए?

**Explain the role of Ideology the terms of International relationship?**

प्रश्न 04. शक्ति संतुलन स्थापित करने के साधनों का वर्णन कीजिए?

**Describe the means adopted to bring about Balance of power?**

प्रश्न 05. राष्ट्रहितों की अभिवृद्धि के साधनों पर संक्षिप्त टिप्पणी लिखिए?

**Write short notes on Instruments for the promotion of national interest.**

प्रश्न 06. शीत युद्ध के प्रमुख कारणों का वर्णन कीजिए?

**Describe the main objectives of cold war?**

प्रश्न 07. गुटनिरपेक्ष आंदोलन का मूल्यांकन कीजिए?

**Evaluate the 'NAM'?**

प्रश्न 08. निम्नलिखित में से किसी दो पर संक्षिप्त टिप्पणी लिखिए –

**Write short note on any two of the following –**

(अ) देदान्त Detente

(ब) महाशक्तियां एवं तृतीय विश्व The super powers and the third world

(स) मार्टन केप्लान का सिद्धांत Martin Kaplon system

(द) गुट निरपेक्ष आंदोलन में भारत की भूमिका India role in non align movement

नोट : किन्हीं चार प्रश्नों के उत्तर दीजिए। सभी प्रश्नों के अंक समान हैं।

Note : Attempt any Four questions. All questions carry equal marks.

- 1- पियाजे के संज्ञानात्मक विकास सिद्धांत का वर्णन कीजिए।  
Describe the cognitive development theory of Piaget.
- 2- अनुवंशिकता से आप क्या समझते हैं? अनुवंशिकता के निर्धारिकों पर प्रकाश डालिए।  
What do you understand by heredity? Describe the determinants of heredity.
- 3- प्रेक्षणात्मक विधि का वर्णन कीजिए।  
Describe an observational method.
- 4- क्रियात्मक विकास को समझाइए। क्रियात्मक विकास के महत्व का उल्लेख कीजिए।  
Explain the Motor development. Point out the importance of motor development.
- 5- भाषा के स्वरूप को समझाइए। भाषा विकास के चरणों का वर्णन कीजिए।  
Explain the nature of language describe the stage of language development.
- 6- पर्यावरण की सापेक्षिक महत्व पर प्रकाश डालिए।  
theory light the relative importance of the environment.
- 7- समकालीन विधि का वर्णन कीजिए।  
Describe the Eros-sectional method.
- 8- भाषा विकास के मनोभाषिक सिद्धांत की व्याख्या कीजिए।  
Explain the psycholinguistic theory of language development.

नोट : किन्हीं चार प्रश्नों के उत्तर दीजिए। सभी प्रश्नों के अंक समान हैं।

Note : Attempt any Four questions. All questions carry equal marks.

- 1- सामाजिक अनुसंधान क्या है? सामाजिक अनुसंधान के उद्देश्यों एवं समस्याओं की विवेचना कीजिए।  
What is social research? Discuss the objectives and problems of social research.
- 2- कान्टे के प्रत्यक्षवाद को समझाइये एवं इसकी विशेषताएं बताइये।  
Explain the comtis positivism and describe its characteristics.
- 3- उपकल्पना को परिभाषित कीजिए एवं सामाजिक शोध में इसकी महत्ता की विवेचना कीजिए।  
Define Hypothesis and discuss its significance of social research.
- 4- समाजशास्त्रीय सिद्धांत क्या है? इसकी प्रमुख विशेषताओं का उल्लेख कीजिए।  
What is sociological theory? Describe its major characteristics.
- 5- प्रतीकात्मक अन्तःक्रियावाद क्या है? इसकी प्रमुख मान्यताओं को लिखिए।  
What is symbolic interactions? write its main themes.
- 6- शोध प्ररचना की अवधारणा एवं प्रकारों की व्याख्या कीजिए।  
Explain the concept and types of research design.
- 7- प्रघटनाशास्त्र क्या है? व्याख्या कीजिए।  
What is phenomenology? Describe.
- 8- चित्रमय प्रदर्शन क्या है? सांख्यिकी में चित्रों की उपयोगिता एवं सीमाओं को स्पष्ट कीजिए।  
What is Diagrammatic presentation? Clarify the significance and limitation of diagram in statistics.

**WA-201501-CV-19**  
**M.Sc. BOTANY (1<sup>st</sup> Semester), ATKT**  
**Examination, Feb.-2021**  
**Paper-I**  
**PLANT MOLECULAR BIOLOGY AND CYTOLOGY**

**Time : Three Hours]**

**[Maximum Marks : 80**

**[Minimum Pass Marks : 29**

---

**नोट : किन्हीं चार प्रश्नों के उत्तर दीजिए। सभी प्रश्नों के अंक समान हैं।**

**Note : Answer any four questions. Each questions carry equal marks.**

---

1. **Explain structure and function of plasma membrane.**
2. **Describe structure and composition of chloroplast.**
3. **Write brief account on structure and function of Ribosome.**
4. **Write an account on types of RNA.**
5. **Discuss Meiosis cell division with diagrams.**
6. **Write notes on:-**
  - (a) **Microbodies**
  - (b) **DNA Models**
7. **Explain structure and function of endoplasmic reticulum.**
8. **Discuss structure organization of Nucleus.**

**WA-201502-CV-19**  
**M.Sc. BOTANY (1<sup>st</sup> Semester), ATK**  
**Examination, April-2021**  
**Paper-II**  
**PLANT GENETICS AND CYTOGENETIC**

**Time : Three Hours]**

**[Maximum Marks : 80**

**[Minimum Pass Marks : 29**

नोट : किन्हीं चार प्रश्नों के उत्तर दीजिए। सभी प्रश्नों के अंक समान हैं।

Note : Answer any four questions. Each questions carry equal marks.

1. जीवाणुओं में पारक्रमण को समझाइए ?  
Describe the transduction in Bacteria?
2. सूत्रकणिकीय आनुवांशिकी को समझाइए ?  
Describe the mitochondrial genetics?
3. जीन अवधारणा को समझाइए ?  
Describe the concept of gene?
4. जीन प्रतिचित्रण का वर्णन कीजिए ?  
Explain the gene mapping?
5. कैंसर के कोशिकीय स्तर पर प्रारम्भ का विस्तृत विवरण दीजिए ?  
Give the detail account of initiation of cancer at cellular level?
6. गुणसूत्र में संरचनात्मक परिवर्तन को समझाइए ?  
Describe the structural changes in chromosomes?
7. संक्षिप्त टिप्पणी लिखिए:- Write short notes on:-  
(a) लैक ओपेरॉन Lac operon (b) जीन विनिमय Crossing over
8. संक्षिप्त टिप्पणी लिखिए:- Write short notes on:-  
(a) रासायनिक उत्परिवर्तक Chemical mutagens (b) लैम्ब्रुश गुणसूत्र Lambrush chromosome

**WA-201503-CV-19**  
**M.Sc. BOTANY (1<sup>st</sup> Semester), ATKT**  
**Examination, Feb.-2021**  
**Paper-III**  
**ALGAL, FUNGI AND MICROBES**

**Time : Three Hours]**

**[Maximum Marks : 80**

**[Minimum Pass Marks : 29**

---

**नोट : किन्हीं चार प्रश्नों के उत्तर दीजिए। सभी प्रश्नों के अंक समान हैं।**

**Note : Answer any four questions. Each questions carry equal marks.**

---

1. **What is Cyanobacteria? Describe the structure, reproduction and economic importance of cyanobacteria.**
2. **Give a general account of Chlorophyta.**
3. **Give a general account of Deuteromycotina.**
4. **Describe the life cycle of puccinia.**
5. **Write notes any two of the following:-**
  - (a) **Conjugation in Bacteria**
  - (b) **Algal bloom**
  - (c) **Cystocarp**
6. **Describe the structure, nutrition, reproduction and economic importance of fungi.**
7. **Write notes any two of the following:-**
  - (a) **Ascus formation in ascomycetes**
  - (b) **Basidiospores**
  - (c) **Conidiospores**
8. **Describe the General character and reproduction of fungi?**



**WA-20504-CV-19**  
**M.Sc. BOTANY (1<sup>st</sup> Semester), ATKT**  
**Examination, April-2021**  
**Paper-IV**  
**BRYOPHYTA AND PTERIDOPHYTA**

Time : Three Hours]

[Maximum Marks : 80

[Minimum Pass Marks : 29

नोट : किन्हीं चार प्रश्नों के उत्तर दीजिए। सभी प्रश्नों के अंक समान हैं।  
Note : Answer any four questions. Each questions carry equal marks.

1. ब्रायोफाइट्स के आर्थिक और पारिस्थितिक महत्व को समझाइए ?  
Describe the economic and ecological importance of Bryophytes?
2. मार्केशिया के बीजाणुद्विद प्रवस्था को समझाइए ?  
Describe the spocophytic phase of Marchantia?
3. स्फैग्नम के युग्मकोद्विद प्रवस्था को समझाइए ?  
Describe the gametophytic phase of Sphagnum?
4. प्यूनेरिया केप्सूल के अनुदैर्घ्य काट की संरचना को सचित्र समझाइए ?  
Describe the structure of longitudinal section of pumeria capsule with a suitable diagram?
5. टेरिडोफाइट्स के सामान्य लक्षणों को समझाइए ?  
Describe the general characters of pteridophytes?
6. टेरिडोफाइट्स के रंभ के विकास को समझाइए ?  
Describe the evolution of stele of pteridophytes?
7. लाइकोपोडियम में जनन को समझाइए ?  
Describe reproduction in Lycopodium?
8. टेरिडियम के कायिक संरचना के बारे में लिखिए ?  
Write about somatic structure of Pteridium?

Roll number .....  
-201601

Paper Code-WA

M.Sc. Semester –I Examination May -2021

Subject- Chemistry

Paper-I

*Paper Title- Inorganic Chemistry*

*Time-3 Hours*

*Maximum Marks-80*

*Minimum Marks- 29*

*Note- Attempt any **FOUR QUESTION**. All question carry equal marks.*

---

Q.1- (a) Discuss the structure of following compounds according to VSEPR-

(I) SF<sub>6</sub> (II) XeF<sub>2</sub> (III) IF<sub>7</sub> (IV) ICl<sub>2</sub><sup>-</sup> 8

(b) Discuss the energetic of hybridization for SP hybridization. 2

© Discuss the bent rule with suitable examples. 6

(d) Explain the linear structure of BeCl<sub>2</sub> with the help of Walsh Diagram. 4

Q2- (a) Discuss the sigma bonding in octahedral complex with example. (According to MOT)  
10

(b) Discuss the pai (π) bonding in octahedral complex with example. ( MOT)  
10

Q.3 - (a) Discuss the optical and geometrical isomerism in [M(AA)<sub>2</sub>B<sub>2</sub>] complex. 6

(b) Discuss the method to distinguish the Cis and Trans isomer. 4

© discuss the resolution of racemic mixture. 5

(d) Discuss the asymmetric synthesis. 5

Q.4- (a) Write short note on followins- 2X3=6

(i) Conjugacy relation (ii) class (iii) order

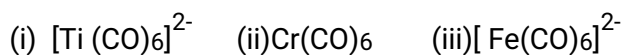
(b) Discuss the conditions for a group. 4

( C ) Discuss the great orthogonality theorem. 10

Q.5 – Write notes on followings – 5x4

(a) Phosphazine (b) structure and use of Borazine (C) Ammonolysis (d) Silicates

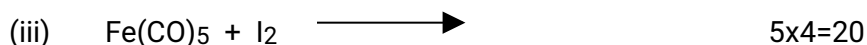
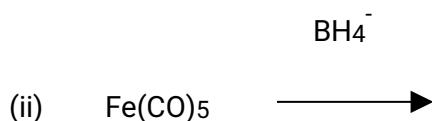
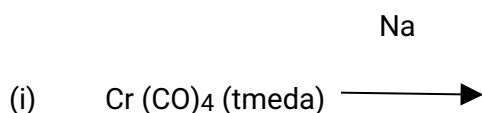
Q.6- (a) Discuss the vibrational spectra of followings  $2 \times 3 = 6$



(b) Discuss the effect of back bonding in vibrational spectra of metal carbonyls. 4

© Tertiary phosphine as ligand 4

(d) Complete the following reactions  $2 \times 3 = 6$



Q.7- write notes on followings (any four)

(i) Outer and inner orbital complex in octahedral field.

(ii) Draw the MOT for tetrahedral complex.

(iii) Multiplication table for  $C_{2v}$  point group.

(iv) Reducible and Irreducible representation

(v) Berry-pseudo rotation

Q-8- Discuss the followings-  $5 \times 4 = 20$

(i)  $d\pi$ - $p\pi$  bond

(ii) Magnetic property of  $[\text{FeF}_6]^{2-}$  &  $[\text{Fe}(\text{CN})_6]^{2-}$

(iii) Geometrical isomerism in co-ordination number 4 complex.

(iv) Group and sub-group



**WA201602**  
**M.Sc. CHEMISTRY (FRIST SEMESTER) A.T.K.T**  
**Examination- APRIL 2021**  
**Paper Titel: Organic Chemistry-I**

**Time:- Three Hours ]**

**[Maximum Marks:80**

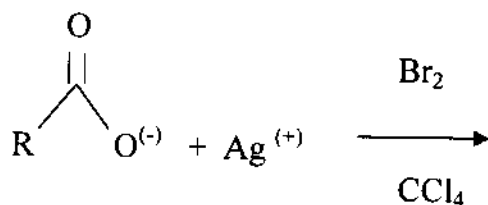
**[Minimum Marks:29**

नोट : दोनो खण्डों से नर्देशानुसार उत्तर दीजिए प्रश्नों के अंक उनके दाहिनीओरअंकितहै।  
Note: Answer from Both the Section as Directed. The Figures in the right-hand margin indicated marks.

**Section-A**

1. **WRITE NOTE ON FOLLOWINGS-** **5x2=10**
- (a) Cross Conjugation.
  - (b) Catenanes and Rotaxanes.
  - (c) Draw the energy level of  $\pi$  molecular orbitals for aromatic, non-aromatic compounds. **10**
1. **WRITE NOTE ON FOLLOWINGS-( any two)** **5x2**
- (i) Non-classical cations.
  - (ii) Steric effect.- Effect on reactivity.
  - (iii) Static effect
  - (b) Explain the norbornyl system. **05**
  - (c) Explain the structure of carbenes. **05**
3. (a) Give the mechanism of nucleophilic substitution an allylic and vinylic carben. **10**
- (b) Neighbouring group participation by  $\pi$  and sigma bond. **08**
4. (a) Explain the Arenium ion mechanism. **10**
- (b) Ortho/para ratio. **05**
  - (c) Diazonium coupling. **05**
5. (a) Explain the following:- **5x2=10**
- (i) Sandmeyer Reaction.
  - (ii) Hunsdiecker Reaction.
- (b) Explain the Allylic halogenation with examples. **10**
6. (a) Explain the Markovnikov Reaction.
- (b) Write note on followings- **5x2=10**
    - (i)  $E^1$ CB Mechanism.
    - (ii) Pyrolytic elimination
7. Explain the following:- (any four) **5x4=20**

- a) Julia Olefin syntheses.
- b) Friedel Craft acylation
- c) Sommet Houser Rearrangement.
- d) Bonding in fullerenes
- e) Write the product for the reaction



8. (a) write note the following:-(any two) 5x2=10
- (i) Kinetic and thermodynamic control.
  - (ii) Anchimeric assistance
  - (iii)  $\text{S}_{\text{N}}1$  Mechanism.
- (b) write note the following:-(any two) 5x2=10
- (i) Auto Oxidation
  - (ii) Vilsmeier reaction
  - (iii) Von Richter reaction.

**WA-201603-CV-19**  
**M.Sc. CHEMISTRY (1<sup>st</sup> Semester), ATK**  
**Examination, MAY.-2021**  
**Paper-III**  
**PHYSICAL CHEMISTRY-I**

Time : Three Hours]

[Maximum Marks : 80

[Minimum Pass Marks : 29

Note : Attempt any four questions. All questions carry equal marks. One question mathematics part are compulsory.

1. (a) Differentiate following w.r.t. x.
  - (i)  $(x^3 + 6)/(x^3 - 6)$
  - (ii)  $\int \frac{x^2+x+1}{\sqrt{x}} dx$
  - (iii)  $e^x \log e^x$
- (b) (i) Show that  $\begin{vmatrix} 1 & a & b+c \\ 1 & b & c+a \\ 1 & c & a+b \end{vmatrix} = 0$
- (ii) Find the value of  $\Delta = \begin{vmatrix} 3 & 4 & -3 \\ 2 & 3 & -4 \\ -3 & 2 & 4 \end{vmatrix} = 0$
2. Write notes on:-
  - (a) Partial function
  - (b) Co-ordinate Transformation
  - (c) Vector space
  - (d) Diagonalization (from Huckel Theory)
3. (a) Describe the Schrodinger wave equation for a hydrogen atom.  
(b) Explain the first order and non degenerate perturbation theory.
4. (a) Term separation Energies of the  $P^3$  configuration.  
(b) Given the ground term symbol for the following electronics configuration  $d^3$ ,  $d^5$  &  $d^9$  transition elements.
5. Explain the following:-
  - (a) Spin Anti symmetry
  - (b) Slatercondon parameter
  - (c) Spin orbital coupling & Zeeman effect
  - (d) Conjugated system by M. o. theory
6. (a) Discuss the activity coefficient of electrolyte solution.  
(b) Explain the second order phase transitions  
(c) Chemical potential with P & T.
7. (a) Describe the Gibbs Duhan equation.  
(b) Explain the determination of fugacity.
8. (a) Discuss the Maxwells thermodynamics relation and its application.  
(b) Postulate of quantum theory or mechanics.

WA-201604

WA-201604

**M.Sc. CHEMISTRY (I SEMESTER)**

**Examination- DEC.-2020**

Compulsory/Optional

Group -

Paper- IV

**SPEETROSCOPY - I**

**Time:- Three Hours ]**

**[Maximum Marks:80**

नोट : किन्ही चार प्रश्नों के उत्तर दीजिए। सभी प्रश्नों के अंक सामान है।

Note: Attempt any **FOUR** questions. All questions carry equal marks.

1. Explain the following:-
  - a. Interaction of radiation with matter.
  - b. Broadening of spectral lines.
2. Classify the molecules on the basis of moment of Inertia.
3. (a) Explain isotopic substitution & rotational spectra.  
(b) Show that in micro wave spectra are observed at constant spacing.
4. (a) Explain interaction of radiation with different modes of vibration.  
(b) Explain vibrational rotational spectra.
5. Explain theory and application of Raman spectrum.
6. Explain spectral lines of hydrogen.
7. Write all term symbols of  $d^2$  electronic configuration, Show splitting of spectral terms on the presence of magnetic field.
8. Explain the following
  - (a) Frank – Condon Principle.
  - (b) Photoelectron spectra of  $O_2$  molecule.



WA201701

M.Sc. MATHEMATICS (I SEMESTER) (A.T. K.T.)

Examination- FEB 2021

Paper Titel: Advance Abtract Algebra

Time:- Three Hours ]

[Maximum Marks:80

[Minimum Marks:29

नोट : किन्हीं चार प्रश्नों के उत्तर दीजिए। सभी प्रश्नों के अंक समान हैं।

Note: Attempt any four questions. All questions carry equal marks.

Que1.(a) State and praove Jordan-Holder theorem.

(b) Show that every subgroup of solvable group is solvable.

Que2.(a) show that every homomorphic image of nilpotent group is nilpotent.

(b) Define Composition series and show that every finite group has a composition series.

Que3.(a) show that an R-module M is direct sum of its submodules  $N_1$  and  $N_2$  if  $M = N_1 + N_2$  and  $N_1 \cap N_2 = \{0\}$

(b) Show that the submodule of the quotient module  $M/N$  are of the form  $U/N$ , where U is a submodule of M containing N.

Que4.(a) Let A, B be R-submodules of R-modules M and N respectively. Then show that

$$\frac{M \times N}{A \times B} \cong \frac{M}{A} \times \frac{N}{B}$$

(b) State and prove schur's lemma.

Que5.(a) Let M be an R-modules. Then show that following are equivalent:

(i) M is noetherian.

(ii) Every submodule of M is finitely generated.

(iii) Every non-empty set S of submodule of M has A maximal element.

(b) If J is a nil left idel in an artinian ring then show that J is nilpotent.

Que6.(a) State and prove Hilbert basis theorem.

(b) Show that every homomorphic image of a noetherian module is noetherian.

Que7.(a) Define Jordan Block and find the Jordan canonical from of

$$A = \begin{bmatrix} 5 & 1 & -2 & 4 \\ 0 & 5 & 2 & 2 \\ 0 & 0 & 5 & 3 \\ 0 & 0 & 0 & 4 \end{bmatrix}$$

(b) Let  $T \in \mathcal{A}(V)$  have all its distinct characteristic roots in  $F$ . Then show that a basis of  $V$  can be found in which the matrix of  $T$  is of the form

$$\begin{bmatrix} J_1 & & & \\ & J_2 & & \\ & & J_3 & \\ & & & \ddots \\ & & & & J_K \end{bmatrix}$$

Where each

$$\begin{bmatrix} B_{i_1} & & \\ & B_{i_2} & \\ & & \ddots \\ & & & B_{i_{r_1}} \end{bmatrix}$$

And where  $B_{i_1}, B_{i_2}, B_{i_{r_1}}$  are basic Jordan blocks belonging to .....

Que7.(a) Define invariant factors of matrix.

Obtain the smith normal form and rank for the following matrix over PIDR:

$$A = \begin{bmatrix} -x-3 & 2 & 0 \\ 1 & -x & 1 \\ 1 & -3 & -x-2 \end{bmatrix}$$

(b) Show that two nilpotent linear transformations  $S, T \in \mathcal{A}(V)$  are similar iff they have the same invariants.

**WA - 201702**  
**M.Sc. Semester-I (ATKT)**  
Examination Feb. -2021  
**Mathematics**  
Paper Title: Topology-I  
Paper: II

Time: 3:00 Hours ]

Maximum Marks: 80  
Minimum Marks: 29

नोट : किन्ही चार प्रश्नों के उत्तर दीजिए। सभी प्रश्नों के अंक समान हैं।

Note: Attempt any **Four** questions. All questions carry equal marks.

- Q.01 (a) Let  $X$  be a topological space and let  $A$  be a subset of  $X$ . Then  $A$  is closed if and only if  $D(A) \subseteq A$ .
- (b) Let  $(X, \tau)$  be a topological space and let  $A, B$  be any subset of  $X$  then prove that –
- (i)  $A \subseteq B \Rightarrow \bar{A} \subseteq \bar{B}$       (ii)  $\overline{A \cup B} = \bar{A} \cup \bar{B}$   
(iii)  $\overline{A \cap B} \subseteq \bar{A} \cap \bar{B}$       (iv)  $\bar{A}$  is closed set
- Q.02 (a) Let  $\mathcal{U}$  consist of  $\emptyset$  and all those subset  $G$  of  $\mathbb{R}$  having the property that to each  $x \in G$ , there exist  $\epsilon > 0$  such that  $]x-\epsilon, x+\epsilon[ \subset G$ , prove that  $\mathcal{U}$  is a topology for  $\mathbb{R}$ .
- (b) Let  $\tau$  consist of  $\emptyset, \mathbb{N}$  and all subset of  $\mathbb{N}$  of the form  $G_n = \{1, 2, 3, \dots, n\}, n \in \mathbb{N}$ , where  $\mathbb{N}$  is set of Natural number. Prove that  $\tau$  is a Topology for  $\mathbb{N}$ .
- Q.03 Let  $(Y, \tau_y)$  be a subspace of  $(X, \tau)$  then prove that –
- (i) a subset  $A$  of  $Y$  is closed in  $Y$  if and only if there exists a subset  $F$  closed in  $X$  such that  $A = Y \cap F$ .
- (ii)  $\text{Cl}_y(A) = \text{Cl}_x(A) \cap Y$ , for every  $A \subseteq Y$ .
- (iii) a subset  $M$  of  $Y$  is a  $\tau_y$ -nhd of a point  $y \in Y$  if and only if  $M = N \cap Y$  for some  $\tau_y$ -nhd  $N$  of  $Y$ .
- (iv)  $D_y(A) = D_x(A) \cap Y$ , for every  $A \subseteq Y$ .
- Q.04 Let  $f: \mathbb{R} \rightarrow \mathbb{R}$  defined by  $f(x) = |x|, \forall x \in \mathbb{R}$  Find whether mapping is
- (i) U-U continuous      (ii) S-U continuous  
(iii) I-U Continuous      (iv) D-U continuous.
- Q.05 (a) Prove that every compact subset  $A$  of a Hausdorff space  $X$  is closed.
- (b) Prove that a Topological space  $X$  is compact if and only if every basic open cover of  $X$  has a finite sub cover.
- Q.06 (a) Every closed and bounded interval on  $\mathbb{R}$  is compact where  $\mathbb{R}$  has the usual topology  $\mathcal{U}$ .
- (b) Prove that a continuous mapping of a compact space into a Hausdorff space is closed.
- Q.07 (a) Show that a topological space  $X$  is disconnected if and only if there exists a non-empty proper subset of  $X$  which is both open and closed in  $X$ .
- (b) Prove that a subset  $E$  of  $\mathbb{R}$  is connected if and only if it is an interval.
- Q.08 (a) Prove that closure of connected set is connected.
- (b) Let  $\{C_\lambda: \lambda \in \Lambda\}$  be a family of connected subsets of a space  $X$  such that  $\bigcap \{C_\lambda: \lambda \in \Lambda\} \neq \emptyset$ . Then prove that  $\bigcup \{C_\lambda: \lambda \in \Lambda\}$  is a connected set.

WA201704

M.Sc. MATHEMATICS (I SEMESTER) (A.T K.T.)

Examination- FEB 2021

Paper Titel: programinh in ansi C

Time:- Three Hours ]

[Maximum Marks:80

[Minimum Marks:29

नोट : किन्हीं चार प्रश्नों के उत्तर दीजिए। सभी प्रश्नों के अंक समान हैं।

Note: Attempt any four questions. All questions carry equal marks.

Que1.(a) Explain the structure of C programming with suitable programming and its description.

(b) What is token ? explain different types of token in detail.

Que2.(a) What do you understand by operator? Explain the relational and conditional operator with suitable program.

(b) What is arithmetic expression? Explain the evolution of arithmetic operation with a suitable example. Have at least four different types of operator.

Que3.(a) What do you understand by decision making statement & explain any four decision making statements with their working.

(b) Explain the use of break and continue statement with suitable programs.

Que4.(a) Explain the following in detail.

- I. One dimensional array
- II. Go to statement.

(b) Explain two dimensional array with suitable program.

Que5.(a) Write a simple program to convert octal number into decimal number.

(b) Write a simple program to calculate the factorial of a given number.

Que6.(a) Write the simple program to print the following pattern using for loop.

```
1
12
123
1234
12345
```

(b) Write a simple program to print the following pattern using while loop.

```
54321
5432
543
54
5
```

Que7.(a) Write a simple program to find whether a given number is prime or not.

(b) Write a simple program to print the fibonacci number till 200.

Que8.(a) Write a simple program to demonstrate... the use of switch statement for describing "month name" according to a month number.

(b) Write a simple program to calculate and print the multiplication of two  $3 \times 4$  matrix using two dimensional array.

**WA- 201801**  
**M.A./M.Sc. PHYSICS (FIRST SEMESTER) ATKT**  
**Examination Feb. 2021**  
Subject: Physics  
Paper - I  
Paper Title: Mathematical Physics

Time:- Three Hours ]

Maximum Marks : 80  
Minimum Passing Marks: 29

नोट : किन्ही चार प्रश्नों के उत्तर दीजिए। सभी प्रश्नों के अंक समान है।

Note: Attempt any FOUR questions. All question carry equal marks.

Que. 1 (a) Find the inverse the following matrix A, where

$$A = \begin{pmatrix} 3 & -3 & 4 \\ 2 & -3 & 4 \\ 0 & -1 & 1 \end{pmatrix}$$

(b) Find whether the set of vectors  $V_1 = (1,2,1)$ ,  $V_2 = (3,1,5)$   $V_3 = (3,-4,7)$  is linearly independent or dependent.

Que.2 (a) State and prove Cauchy's integral formulae.

(b) Find the value of  $\int_C \frac{z+4}{z^2+2z+5} dz$ , if C is the Circle  $|z+1| = 1$

Que.3 (a) Show that the function  $\varphi = \frac{1}{2} \log(x^2+y^2)$  is harmonic. Find its harmonic conjugate.

(b) Find Taylor expansion of  $f(z) = \frac{2z^3+1}{z^2+z}$  about the pint  $Z = 1$ .

Que.4 (a) Prove that  $J_n(x)$  is the coefficient of  $z^n$  in the expansion of  $e^{\frac{x}{2}(z-\frac{1}{z})}$ .

(b) Prove that  $2nH_{-1}(x) = H'_n(x)$

Que.5 Write down lavenders' equation and find its general solution.

Que.6 (a) Write Clayey- Hamilton theorem and prove it.

(b) Find the Eigen valves and Eigen vectors of the following matrix.

$$A = \begin{pmatrix} 1 & -3 & 3 \\ 3 & -5 & 3 \\ 6 & -6 & 4 \end{pmatrix}$$

Que.7 (a) Find Fourier sine transform of  $e^{-ax}$

(b) Find the Laplace transform of  $\frac{1-\cos t}{t^2}$

Que.8 (a) Solve the equation by Laplace transform method.

$$\frac{dy}{dt} + 2y + \int_0^t y dt = \sin t, y(0) = 1.$$

(b) Find the inverse Laplace transform of  $\cot^{-1}\left(\frac{s+3}{2}\right)$

**WA- 201802**  
**M.A./M.Sc. PHYSICS (FIRST SEMESTER) ATKT**  
**Examination Feb. 2021**  
**Subject: Physics**  
**Paper - II**  
**Paper Title: Classical Mechanics**

Time:- Three Hours ]

Maximum Marks : 80  
Minimum Passing Marks: 29

---

नोट : किन्ही चार प्रश्नों के उत्तर दीजिए। सभी प्रश्नों के अंक समान है।

Note: Attempt any FOUR questions. All question carry equal marks.

---

- Que. 1 What do you mean by constraints? Explain different types of constraints. How The constraints affect the motions of a mechanical system?
- Que.2 State D' Alembert's principle and derive Lagrange's equation of motion starting from D' Alembert's Principle.
- Que.3 Write short notes on the following.
- (i) Gyroscope force
  - (ii) Gauge Invariance
  - (iii) Invariance of Lagrangian under Galilean transformations
- Que.4 Explain Coriolis force. Deduce its expression. Explain the applications of Coriolis force
- Que.5 State Kepler's laws of planetary motion and deduce them from Newton's law of gravitation.
- Que.6 State and prove Hamilton's Principle and use it to prove that the shortest distance between two points in space is straight line following these.
- Que.7 Explain how Hamilton - Jacobi equation can be applied to solve the problems of.
- (i) Simple pendulum
  - (ii) Linear Harmonic Oscillator
- Que.8 State the Poisson's Brackets and prove that under canonical transformation the Poisson's brackets are invariable.

**WA- 201803**  
**M.A.M.Sc. PHYSICS (FIRST SEMESTER) ATKT**  
**Examination Feb. 2021**  
**Subject: Physics**  
**Paper - III**

Paper Title: Quantum mechanics - I

Time:- Three Hours ]

Maximum Marks : 80  
Minimum Passing Marks: 29

---

नोट : किन्ही चार प्रश्नों के उत्तर दीजिए। सभी प्रश्नों के अंक समान है।

Note: Attempt any FOUR questions. All question carry equal marks.

---

- Que. 1 Obtain Schrodinger's Equations and obtain solution of it Also obtain stationary state solution of Schrodinger's equation.
- Que.2 State and prove Ehrenfest's theorem.
- Que.3 Obtain expressions for reflectance and transmittance for a real-angular potential barrier.
- Que.4 Describe one dimensional harmonic oscillation and obtain expressions for energy eigen values and energy eigen functions for harmonic oscillation.
- Que.5 Describe uncertainty relation for  $x$  and  $P$  and obtain states with minimum uncertainty product.
- Que.6 Obtain energy eigen values for Hydrogen A form.
- Que.7 Discuss time - independent- perturbation theory for non- degenerate cases.
- Que.8 Describe Zeeman effect.



**WA- 201804**  
**M.A./M.Sc. PHYSICS (FIRST SEMESTER) ATKT**  
**Examination Feb. 2021**  
**Subject: Physics**  
**Paper - IV**

Paper Title: Electronic Deviser

Time:- Three Hours ]

Maximum Marks : 80  
Minimum Passing Marks: 29

---

नोट : किन्ही चार प्रश्नों के उत्तर दीजिए। सभी प्रश्नों के अंक समान है।

Note: Attempt any FOUR questions. All question carry equal marks.

---

- Que. 1 What do you mean by tormentor bring? write down essentials of tromped Bering circuit describe bare renter method of tormenter bearing with suitable circuit diagram and deduce an expression for its stability factor . while advantages and dived van also of ethic method.
- Que.2 Discuss about construction of NPN tremor. Draw circuit diagram for characteristics of NPN terminator in CE mode and explain its Woking Deduce an expression for cement fain input and output renitence
- Que.3 Why coupling is unwired for amplification? Explain tormentor Re coupled amplifier with special reference to frequency response advantage and disadvantages. why does RC coupling give cowhand gain over mind frequency range.
- Que.4 What do you understand by single stage tormentor amplifier? How traitor work as an amplifier. Draw the circuit diagram of a practical single storage terminator amplifier. Explain phase reversal with the help of graphical demonstration.
- Que.5 (a) Explain construction and working of Valspar diode and write is application.  
(b) What is MOFET? Differential between Depletion type and enhancement true MosFET.
- Que.6 Write short notes on-
- (a) Transfer electron devices. (b) Photo conductive devices
- Que.7 (a) What is LED? How it in differ form ordinary chided? Write application of LED.  
(b) Explain constriction and working of diode loser.
- Que.8 (a) What do you understand by memory devices? Differential between S RAM and DRAM.  
(b) Describe working of solar call and give any tow of if application.

WA-201901

M.Sc. Semester-I ATKT, Examination, Feb.-2021

Subject- Zoology

Paper-I

Paper Title- Structure & function of Invertebrates

[Maximum Marks : 80

Time : 3 Hours]

[Minimum Pass Marks : 29

---

नोट : किन्हीं चार प्रश्नों के उत्तर दीजिए। सभी प्रश्नों के अंक समान हैं।

Note : Attempt any Four questions. All questions carry equal marks.

---

- 1- Describe the structure and significance of trochophore larva.
- 2- what is excretion? Give an account of excretory organs and mechanism of excretion in arthropods.
- 3- Give an account of respiratory pigments in invertebrates
- 4- Describe the various methods of feeding in polychaetes.
- 5- What is torsion? Describe the torsion in gastropods.
- 6- What is coelom? give an account of general organization of coelom in invertebrates.
- 7- Describe the aerial respiratory organs and mechanism of respiration in respiration in arthropoda.
- 8- Write notes on any two of the following-
  - a- parasitic adaptation in helminthes
  - b- Ciliary locomotion
  - c- Larval forma of helminthes

**WA-201902-CV-19**  
**M.Sc. ZOOLOGY (1<sup>st</sup> Semester), ATK**  
**Examination, Feb.-2021**  
**Paper-II**  
**MOLECULAR CELL BIOLOGY**

**Time : Three Hours]**

**[Maximum Marks : 80**

**[Minimum Pass Marks : 29**

---

**नोट : किन्हीं चार प्रश्नों के उत्तर दीजिए। सभी प्रश्नों के अंक समान हैं।**

**Note : Answer any four questions. Each questions carry equal marks.**

---

1. Describe the cell cycle and its regulations.
2. Write the notes on apoptosis.
3. Write a short notes on any two of the following:-
  - (a) Microscope
  - (b) Centrifuge
  - (c) Properties of cytoplasmic matrix
4. Describe the model of cell membrane.
5. Explain the theory and process of aging.
6. Describe the structure and functions of microtubules.
7. Write a short notes on any two of the following:-
  - (a) Golgi bodies
  - (b) Chromosome
  - (c) Lysosome
8. Describe the mechanism of apoptosis.

**WA-201903-CV-19**  
**M.Sc. ZOOLOGY (1<sup>st</sup> Semester), ATK**  
**Examination, Feb.-2021**  
**Paper-III**  
**GENERAL AND COMPARETIVE ENOOCRINOLOGY**

Time : Three Hours]

[Maximum Marks : 80

[Minimum Pass Marks : 29

नोट : किन्हीं चार प्रश्नों के उत्तर दीजिए। सभी प्रश्नों के अंक समान हैं।

Note : Answer any four questions. Each questions carry equal marks.

1. रासायनिक संदेशवाहको को परिभाषित कीजिए ? प्रत्यक्ष और अप्रत्यक्ष हार्मोन के बीच विभेदन कीजिए ?  
Define chemical messengers? Differentiate between direct and indirect hormones?
2. अधिवृक्क मज्जा के हार्मोन के जैव संश्लेषण का उपयुक्त चित्रों के वर्णन करें ?  
Describe the biosynthesis of adrenal medulla hormones with suitable diagrams?
3. थायरोइड ग्रन्थि के हार्मोनल विकारों की विस्तार से वर्णन कीजिए ?  
Explain the hormonal disorders of Thyroid gland in detail?
4. फीड बैक प्रक्रिया से आप क्या समझते हैं ? फीड बैक प्रक्रिया की व्याख्या उदाहरण सहित कीजिए ?  
What do you understand by feedback mechanism? Explain the feedback mechanism with the help of an example?
5. कैल्शियम होमोस्टेसिस में हार्मोन की भूमिका का वर्णन करें ?  
Describe the role of hormones in Calcium homeostasis?
6. प्रोस्टाग्लैन्डिन्स को परिभाषित करते हुए उनके जैविक कार्यों पर टिप्पणी लिखिए।  
Define Prostaglandins? Write note on their biological functions?
7. तंत्रिका प्रेषण के दौरान न्यूरोट्रान्समिटर के भूमिका का वर्णन करें ?  
Describe the role of neurotransmitters during synaptic transmission?
8. संक्षिप्त टिप्पणी लिखिए:—(कोई दो) Write short notes on:—(Any two)  
(a) द्वितीय संदेशवाहक के रूप में चक्रीय ए.एम.पी. Cyclic A.M.P. as a second messenger.  
(b) आइ.जी.एफ.—प्रथम I.G.F.-I  
(c) टी.जी.एफ.—बीटा T.G.F.- $\beta$

WA-201904

M.Sc. Semester-I ATKT, Examination, Feb.-2021

Subject- Zoology

Paper-IV

Paper Title- Environmental Physiology and Ecology

[Maximum Marks : 80

Time : 3 Hours]

[Minimum Pass Marks : 29

---

नोट : किन्हीं चार प्रश्नों के उत्तर दीजिए। सभी प्रश्नों के अंक समान हैं।

Note : Attempt any Four questions. All questions carry equal marks.

---

- 1- Describe various ways to avoid and resist environmental stress for survival and adaptation.
- 2- Describe Energy flow in ecosystem with ecological models.
- 3- Describe habitat and Niche concept with its ecological significance in community structure.
- 4- Discuss the causes and effects of climate change. Write about Earth summit regarding environmental issues.
- 5- Write short notes on-
  - a- Bio-indicator of pollution
  - b- Biomedical wastes and its disposal
- 6- Describe various sources, types, effects and remedial measures of Air pollution.
- 7- Describe about various mechanisms of adaptation suited for aerial environment.
- 8- Write short notes on-
  - a- Eltonian Pyramids
  - b- Environment Impact Assessment