



### **7. Security in Contemporary World.**

**Marks 05**

Traditional concerns of security and politics of disarmament. Non – traditional or human security : global poverty, health and education. Issues of human rights and migration .

### **8. Globalization and its Critics .**

**Marks 05**

Economic, cultural and political manifestations. Debates on the nature of consequences of globalization. Anti – globalization movements. India as an arena of globalization and struggle against it.

### **9. Environmental and Natural Resources in Global Politics.**

**Marks 05**

Environment movement and evolution of global environmental norms. Conflicts over traditional and common property resources. Rights of indigenous people. India's stand in global environmental debates.

## **Part B : Politics in India since Independence.**

### **10. Nation – Building and Its Problems.**

**Marks 05**

Nehru's approach to nation – building : Legacy of partition: challenge of 'refugee' resettlement, the Kashmir problem. Organization and reorganization of states; Political conflicts over language.

### **11. Era of One – Party Dominance.**

**Marks 06**

First three general elections, nature of Congress dominance at the national level, uneven dominance at the state level, coalitional nature of Congress. Major opposition parties.

### **12. Politics of Planned Development.**

**Marks 05**

Five year plans, expansion of state sector and the rise of new economic interests. Famine and suspension of five year plans. Green revolution and its political fallouts.

### **13. India's External Relations.**

**Marks 06**

Nehru's foreign policy. Sino – Indian war of 1962, Indo – Pak war of 1965 and 1971. India's nuclear programme and shifting alliances in world politics.

### **14. Challenge to and Restoration of Congress System.**

**Marks 05**

Political succession after Nehru. Non – Congressism and electoral upset of 1967, Congress split and reconstitution . Congress' victory in 1971 elections, politics of "garibi hatao"



### **15. Crisis of the Constitutional Order.**

**Marks 07**

Search for 'committed' bureaucracy and judiciary. Navnirman movement in Gujarat and the Bihar movement. Emergency context constitutional and extra – constitutional dimensions, resistance to emergency. 1977 elections and the formation of Janata Party. Rise of civil liberties organizations .

### **16. Regional Aspirations and Conflicts.**

**Marks 05**

Rise of regional parties. Punjab crisis. The Kashmir situation. Challenges and responses in the North East.

### **17. Rise of New Social Movement.**

**Marks 05**

Farmers' movements, Women's movement, Environment and Development – affected people's movements. Implementation of Mandal Commission report and its aftermath.

### **18. Recent Developments in Indian Politics.**

**Marks 06**

Participatory upsurge in 1990, Rise of the JD and the BJP. Increasing role of regional parties and coalition politics. UF and NDA governments. Elections 2004 and UPA governments.

### **Book Suggested :**

Major concepts of Political Science published by NCERT, New Delhi.



## PHILOSOPHY

Max. Marks : 100

Time : 3 Hours

### A. INDIAN PHILOSOPHY

1. Nature and Schools of Indian Philosophy **Marks 10**
2. Philosophy of the Bhagvat Gita **Marks 10**
3. Buddhism ,Nyana, Yoga , Jainism **Marks 10**

### B. MUSLIM PHILOSOPHY

4. Introduction to Muslim Philosophy **Marks 10**
5. Principles Schools of Muslim Philosophical Thought **Marks 10**
6. Muslim Philosophers and their contribution **Marks 10**

### C. WESTERN PHILOSOPHY

7. The Causal Principles **Marks 10**
8. Nature of Reality **Marks 10**
9. Mind - Body Problem **Marks 10**

### D. APPLIED PHILOSOPHY

10. Environmental Ethics , Bio Ethics , Business Ethics **Marks 10**

### A. INDIAN PHILOSOPHY

#### Unit I : Nature and Schools of Indian Philosophy.

1. Nature and Schools of Indian Philosophy
2. Characterises of Indian Philosophy
3. Theory of Purusarthas ( Dharma, Artha, Kama and Moksa )

#### Unit II : Philosophy of the Bhagvad Gita

1. Nishkama - Karma
2. Avadharna
3. Lokasmgraha

#### Unit III : Buddhism , Nyaya , Yoga , Jainism

1. Buddhism ( Eight - Fold Path )
2. Nayaya ( Theory of Pramanas )
3. Yoga ( Eight - Fold Practice )
4. Jainism ( Panshilla : Ahimsa, Satya, Asteya, Brahmacharya, Aprigraha )



## **B. MUSLIM PHILOSOPHY**

### **Unit IV : Introduction to Muslim Philosophy**

1. Meaning and Emergence of Muslim Philosophy
2. Sources of Muslim Philosophy ( primary and secondary sources )
3. Main Philosophical Teachings of Holy Quran

### **Unit V : Principles Schools of Muslims Philosophical Thought.**

1. Mutazilism : Principles of Mutazilism
2. Asharism : Main Doctrines of Asharism

### **Unit VI : Muslim Philosophers and their contribution**

1. Alama Iqbal – Intellect and Intuition
2. Jamalal Din Afghani – Spirituality , Morality , Rationality and Muslim Unity
3. Al – Kindi – God , Soul , Intellect

## **C. WESTERN PHILOSOPHY**

### **Unit VII : The Causal Principles**

1. Aristotle's Theory of Four Fold Causation
2. Hume's Theory of Causation

### **Unit VIII : Nature of Reality**

1. Proof for the existence of God
2. Ontological Arguments
3. Cosmological Arguments
4. Teleological Arguments

### **Unit IX : Mind – Body Problem**

1. Interactionism – Descartes
2. Parallelism – Spinoza
3. Pre – Established Harmony ( Leibnitz )

## **D. APPLIED PHILOSOPHY**

### **Unit X : Environment Ethics , Bio Ethics , Business Ethics**

1. Environment Ethics
2. Bio Ethics
3. Business Ethics
4. Philosophy of Education





### **Suggested Reading:**

1. Introduction to Indian Philosophy by Data and Chatterji
2. Critical Survey of Indian Philosophy by C.D. Sharma
3. History of Indian Philosophy by R. N. Sharma
4. History of Muslim Philosophy by M. M. Sharief
5. Muslims Philosophy and Philosophers by Saleem Khan and Anwar Khan
6. History of Western Philosophy by Y. Masiah
7. Introduction to Philosophy by Jhon Patrick
8. Living Issues in Philosophy by H. Titus
9. Companion to Ethics by R. G. Frey
10. Applied Ethics by PETE Singer



## EDUCATION

Max. Marks : 100

Time : 3 Hours

### UNIT 1 : CURRICULAM

- 1.1 Meaning and Importance of Curriculum
- 1.2 Definitions – Ross , Cunningham , Tagore , Zakir Hussain  
Secondary Education Commission ( 1952 – 53 )
- 1.3 Types of Curriculum ( Merits and Limitations )
  - \*\* Subject Centered Curriculum
  - \*\* Activity Centered Curriculum
  - \*\* Child – Centered Curriculum
- 1.4 Defects of existing Curriculum and its reformative measures. 10 marks

### UNIT 2 : CO – CURRICULAR ACTIVITIES

- 1.1 Meaning of Co – Curricular Activities
- 1.2 Types \_
  - \*\* Literary – (Debates, School Magazine, Library)
  - \*\* Aesthetic & Cultural – (Drama, Educational Tours, Folk Activities)
  - \*\* Social – (Morning Assembly & NSS)
  - \*\* Physical – (Games & Sports, NCC, Scouting)10 marks

### UNIT 3 : DEVELOPMENT OF EDUCATION IN J&K

- 1.1 Role of Missionary Schools with reference to :
  - \*\* Tyndale Biscoe ( 1881 – 82 )
  - \*\* Anjuman-i-Nusratul Islam (1905)
  - \*\* Dogras with special reference to Primary Education.
  - \*\* Sharp Committee ( 1916 )
  - \*\* K. G. Saidain Report ( 1939 )
  - \*\* A. Kazimi Report ( 1950 )
  - \*\* Bhagwan Sahay Committee ( 1972 )

#### 1.2 Brief history of the following Institutions :

- \*\* Jammu & Kashmir Board of School Education
  - \*\* Directorate of School Education
  - \*\* University of Kashmir
  - \*\* University of Jammu
- 10 marks

### UNIT 4 : POPULATION EDUCATION

- 1.1 Meaning and Objectives of Population Education
- 1.2 Need and Importance of Population Education
- 1.3 Population Explosion – Meaning, Causes, Consequences and Control
- 1.4 Role of Media ( Print and Electronic ) for Population Awareness 10 marks



## UNIT 5 : EDUCATIONAL THINKERS

- 1.1 M. K. Gandhi
- 1.2 Dr. Zakir Hussain
- 1.3 John Dewey

With special reference to :

- \*\* Life Sketch
- \*\* Aims of Education
- \*\* Curriculum
- \*\* Concept of Education
- \*\* Methods of Teaching
- \*\* Role of Teacher

**10 marks**

## UNIT 6 : STATISTICS IN EDUCATION

- 1.1 Measures of Variability-----

- \*\* Concept of Variability
- \*\* Methods of determining Variability through

- i) Range
- ii) M. D ( Mean Deviation )
- iii) Q. D ( Quartile Deviation )
- iv) S. D ( Standard Deviation )

- 1.2 Correlation :

- \*\* Concept of Correlation
- \*\* Computation of Correlation
- \* Rank Method ( Spearman )

\* Product Movement Method ( Pearson ) **10 marks**

## UNIT 7 : HUMAN GROWTH AND DEVELOPMENT

- 1.1 Meaning and Principles of Growth and Development
- 1.2 Stages of Growth and Development (Physical, Mental & Social) with special reference to :
  - \*\* Infancy
  - \*\* Childhood
  - \*\* Adolescence
- 1.3 Needs and Problems of Adolescents with Remedial Measures

**10 marks**

## UNIT 8 : MENTAL HEALTH AND HYGIENE

- 1.1 Meaning and Definition of Mental Health and Hygiene
- 1.2 Purpose of Mental Health and Hygiene
- 1.3 Characteristics of Mentally Healthy Individual
- 1.4 Need for Mental Health and Hygiene
- 1.5 Factors determining Mental Health :
  - \*\* Hereditary
  - \*\* Physical
  - \*\* Social
- 1.6 Causes of Poor Mental Health
- 1.7 Achieving Mental Health

**10 marks**

## UNIT 9 : LEARNING

- 1.1 Meaning of Learning
- 1.2 Definitions - Thorndike, Skinner, Hilgard, Gates, Crow & Jeff Cobb
- 1.3 Characteristics of Learning
- 1.4 Types of Learning :
  - (i) Perceptual
  - (ii) Conceptual
  - (iii) Motor
  - (iv) Verbal
  - (v) Associative
- 1.5 Laws of Learning (Primary & Secondary) and their educational implications. **10 marks**



## UNIT 10 : ADJUSTMENT & MALADJUSTMENT

- 1.1 Concept of Adjustment & maladjustment
- 1.2 Characteristics of a well adjusted person
- 1.3 Causes and symptoms of maladjusted person
- 1.4 Defense Mechanisms :

\*\* Identification

\*\* Rationalization

\*\* Sublimation

\*\* Compensation

\*\* Escapism

\*\* Fantasy

**(10 marks)**





## PSYCHOLOGY

**Maximum Marks : 100**  
**Theory : 70 Marks**  
**Practicals : 30 Marks**

**Time : 3 Hours**

### UNIT I : INTELLIGENT AND APTITUDE

*The unit aims at studying how people differ with respect to Intelligence and Aptitude.*

- Concept of Intelligence.
- Theories of Intelligence: Theory of multiple intelligence, Triarchic theory of intelligence, PASS model of intelligence.
- Culture and Intelligence, Tests of Intelligence.
- Aptitude : Nature and Types.
- Giftedness ( nature and identification ).
- Individual differences ( heredity – environmental interaction ).

**09 marks**

### UNIT II : SELF AND PERSONALITY

*The unit focuses on the study of self and personality in the context of different approaches in an effort to appraise the person.*

- Concept of self, self efficiency, self regulation and techniques.
- Concept of Personality, theories of Personality ( Trait and types, Psychoanalytic, Humanistic ).
- Assessment of Personality : Self report measures, Projective techniques.

**09 marks**

### UNIT III : MEETING LIFE CHALLENGES

*The aim of this unit is to study adjustment, stress and coping strategies. Health and well – being is also discussed.*

- Concept of adjustment.
- Stress : Meaning, Sources and Types, Coping strategies.
- Concept of health and well – being.

**06 marks**

### UNIT IV : PSYCHOLOGICAL DISORDERS

*The unit discusses the concepts of normality and abnormality and some Psychological Disorders.*

- Concept of normality and abnormality, Causal factors associated with psychological disorders.
- Classification of psychological disorders.
- Major psychological disorders : Anxiety, Schizophrenia ( meaning and symptoms ).
- Mood disorders, behavioral, substance related.

**09 marks**



## **UNIT V : THERAPEUTIC APPROACHES**

*The unit discusses the goals, techniques and effectiveness of different approaches used to treat psychological disorders.*

- Goals and objectives of therapeutic processes, stages of therapeutic relationships.
- Types of therapies : Psychodynamic, Humanistic, Cognitive, Behavior, Biomedical, Yoga & Meditation.
- Rehabilitation of mentally ill patients.

**08 marks**

## **UNIT VI : ATTITUDE AND SOCIAL COGNITION**

*The unit focuses on the formation and change of attitudes, cultural influences on attributional tendencies and conditions influencing pro – social behavior.*

- Nature and components of attitude, attitude – formation and change.
- Attribution , Social cognition , Schemas and Stereotypes.
- Pro – social behavior and its techniques prejudice and discrimination, Strategies for handling prejudice.

**07 marks**

## **UNIT VII : GROUP PROCESSES AND SOCIAL INFLUENCE**

*The unit deals with the concept of group, its functions and the dynamics of social influence. Different conflict resolution strategies will also be discussed.*

- Meaning of group, group behavior, factors influencing group formation, types of group, Social identity, intergroup conflict : conflict resolution strategies.
- Social influence processes : conformity, obedience and compliance, cooperation and competition.

**08 marks**

## **UNIT VIII : ENVIRONMENT AND SOCIAL CONCERNS**

*The purpose of this unit is the understanding and application of psychology to some important social issues.*

- Human – Environmental relationships : noise pollution, air pollution, natural and man-made disasters.
- Social issues : poverty, aggression and violence, gender discrimination.
- Promoting pro-environmental behavior, human rights and peace management.

**08 marks**





## SOCIOLOGY

**Maximum Marks : 100**

**Theory : 80 Marks**

**Practicals : 20 Marks**

**Time : 3 Hours**

### INDIAN SOCIETY

#### Unit 1 : Introducing Indian Society

**Non-Evaluative**

- Unity in Diversity in India.
- Geographical, Cultural, Religious and Linguistic.
- Ethnic Composition of J&K.

#### Unit 2 : Demography and Society

**Marks 08**

- Demography : Concept, Variables ( Indicators ) and Trends.
- Theories of Population : Malthusian Theory ; Demographic Transition Theory.
- National Population Policy of India (2011).
- Population Composition of J&K.

#### Unit 3 : Social Institutions

**Marks 08**

- Family : Concept and Functions.
- Marriage : Concept and Types.
- Caste System : Concept, Characteristics, Change and Continuity.

#### Unit 4 : Social Inequality

**Marks 08**

- Meaning and Definition of Social Inequality.
- Tribals : Definition and Characteristics ; Distribution ; Marginalisation of Tribal Communities.
- Religious Minorities.
- The Differently Abled.
- Struggle for Equality of Women.

#### Unit 5 : Challenges to National Integration

**Marks 08**

- Communalism.
- Regionalism.
- Casteism.
- Role of State: Constitutional and Legal Measures.

#### Unit 6 : Methodology

**Marks 08**

- Research: Concept and Features.
- Importance of Social Research.
- Steps / Stages of Social Research.
- Sampling : Stratified and Non – Stratified.
- Techniques of Data Collection : Observation, Interview, Schedule, Questionnaire.





## **CHANGE AND DEVELOPMENT IN INDIAN SOCIETY**

### **Unit 7 : Processes of Social Change in India**

**Marks 08**

- Modernization.
- Industrialization and Urbanization.
- Sanskritisation.
- Westernization.

### **Unit 8 : Change and Development in Rural Society**

**Marks 08**

- Rural Society : Meaning and Features.
- Land Reforms with Special Reference to J&K.
- Green Revolution : Significance and Adverse Effects.
- 73<sup>rd</sup> Amendment Act : Panchayati Raj Institution.

### **Unit 9 : Globalization and Social Change**

**Marks 08**

- Globalization : Meaning and Concept.
- Economic Globalization.
- Cultural Globalization.
- Political Globalization.

### **Unit 10 : Mass Media and Society**

**Marks 08**

- Mass Media : Concept and Classification.
- Role of Mass Media in Modern India ( Environmental protection, Gender Sensitisation , Health Education)
- Social Media : Emergence, Merits and Demerits.

### **Unit 11 : Social Movements**

**Marks 08**

- Class Movement : Peasant Movement ( Meaning, Impact and Trends ).
- Caste Movement : Dalit movement ( Meaning, Impact and Trends ).
- Environmental Movement : Meaning, Impact and Trends ( Chipkoo Movement ).

### **BOOK PRESCRIBED :**

- A Textbook of Sociology for Class XII (Part 1 & 2) Published by NCERT , New Delhi.



## Scheme and Pattern of the Question Paper

**Class:** 12<sup>th</sup>

**Subject:** Sociology

**Marks:** 80 + 20 = 100 (80 marks for Theory and 20 marks for Practicals)

**Section: A**

Five (05) long answer type questions from the following units with internal choice:-

Units: - II, V, VI, VIII XI

5 x 5 = 25 marks

**Section : B**

Ten short answer type questions, two from each of the below mentioned units :-

Units :- III, IV, VII, IX, X

13 x 3 = 30 marks

**Section : C**

Ten very short answer type questions from each unit mentioned in the syllabus.

10 x 2 = 20 marks

**Section: D**

Five objective type questions from the following units :-

II, V, VI, VIII XI

5 x 1 = 5 marks

**Practical Examination**

**Max. Marks : 20**

**Time Allotted : 3 Hours**

**External : 15 Marks**

**Internal : 5 Marks**

**A. Project ( undertaken during the academic year at school level )**

**5 marks**

I. Statement of the Purpose

**1½ marks**

II. Methodology / Technique

**1½ marks**

III. Conclusion

**2 marks**

**B. Viva - based on the project work**

**2 marks**

**C. Research Design**

**8 marks**

a. Overall format

**1 marks**

b. Research Questions / Hypothesis

**1 marks**

c. Choice of Technique

**2 marks**

d. Detailed Procedure

**2 marks**

e. Limitations of the above technique

**2 marks**

B and C to be administered on the day of the external examination.



## APPLIED MATHEMATICS

Maximum Marks : 100

Time : 3 Hours

### Unit 1st :- Matrices and Determinants ( 20 marks )

Definition of a matrix. Various types of matrices. Addition and multiplication of matrices. Transpose of a matrix and its properties (without proof).

Determinants of order not exceeding order three. Minors and cofactors of the elements of a determinants. Properties (without proof) of determinants and their application. Solution of a system of linear equations using determinants (Cramm's Rule). Singular and non-singular matrices. Adjoint of a matrix, inverse of a matrix. Solution of linear equations with the help of matrices having two and three variables.

### Unit 2nd :- Limits and Continuity of a Function (12 marks)

Definition of limit of a function, algebra of limits,  
Fundamental limits

$$\lim_{x \rightarrow a} \frac{x^n - a^n}{x - a}, \lim_{\theta \rightarrow 0} \frac{\sin \theta}{\theta}, \lim_{x \rightarrow 0} \frac{a^{mx} - 1}{x}, \lim_{n \rightarrow \infty} \left(1 + \frac{1}{n}\right)^n$$
$$\lim_{x \rightarrow 0} \frac{\log(1+x)}{x}$$

and their applications.  
Continuity of a function.

### Unit 3rd :- Derivative (12 marks)

Derivative of a function, its geometrical and physical significance, derivation of some simple functions by first principle, derivative of sum, product and quotient of two functions. Derivative of inverse trigonometric functions (without proof) with applications only.

### Unit 4th :- Applications of Derivatives (10 Marks)

Tangents and normal ( Cartesian Co-ordinates only ), Increasing and decreasing functions. Maxima and Minima. Rolles and Mean Value Theorem (without proof) and their simple applications.



## Unit 5th :- Integrals

(16 Marks)

Integration as inverse of differentiation, integration of various functions by substitution, using trigonometric functions, partial fractions by parts integrals of the type.

$$\int \frac{dx}{x^2 \pm a^2}, \int \frac{dx}{a^2 - x^2}, \int \frac{dx}{\sqrt{a^2 - x^2}}, \int \frac{dx}{\sqrt{x^2 \pm a^2}},$$

$$\int \frac{dx}{ax^2 + bx + c}, \int \frac{(px + q)dx}{ax^2 + bx + c}, \int \sqrt{x^2 \pm a^2} dx, \int \sqrt{a^2 - x^2} dx,$$
$$\int \frac{dx}{\sqrt{ax^2 + bx + c}}; \int \frac{(px + q)dx}{\sqrt{ax^2 + bx + c}}$$

Definite integrals as a limit of a sum, Fundamental Theorem of Calculus (without proof). Properties of definite integrals and evaluation of definite integrals using properties of definite integrals.

## Unit 6th :- Differential Equations

(10 marks)

Differential equations : Order and degree of differential equation, solving of differential equations by variable separable method, homogenous differential equations, first order linear differential equations.

## Unit 7th :- Statistics

(10 marks)

Parallelogram law of forces, Resolution of forces, Triangle law of forces. Polygon law of forces. Lami's theorem. Parallel forces with applications.

## Unit 8th :- Dynamics

(10 marks)

Velocity acceleration , equations of motion along a straight line with uniform acceleration.

$V = u + at$ ;  $X = ut + \frac{1}{2}at^2$ ;  $v^2 - u^2 = 2ax$ ; motion under gravity.





## ISLAMIC STUDIES

Max. Marks : 100

Time allowed : 3 Hours

### Units :

	Marks
I. Worship in Islam (Ibadah and Arkan )	10
II. Ethical Values in Islam	10
III. Human Rights in Islam	10
IV. Status of Women in Islam	10
V. Introduction to the Qu'ran	10
VI. Knowledge and the Quranic Teachings	10
VII. Social Teachings of the Qu'ran	10
VIII. Economic Teachings of the Qu'ran.	10
IX. Introduction to Hadith	10
X. Introduction to Fiqh ( Law )	10

## DETAILED SYLLABUS

### Unit 1 : Worship In Islam ( Ibadah and Arkan ) 10 Marks

- I. Worship : meaning and importance
- II. Arkan : concept and importance
  - a. *Salah*( Prayer )
  - b. *Sawm*( Fasting )
  - c. *Zakah*( Alms giving )
  - d. *Hajj* ( Holy Pilgrimage )

### Unit 2 : Ethical Values in Islam 10 Marks

- I. Meaning and importance
- II. Virtues (*Fada'il* )
  - a. Truthfulness (*Sidq*)
  - b. Justice (*adl*)
  - c. Modesty (*Haya*)
  - d. Trust (*Amanah*)
- III. Vices (*Rada'il* )
  - a. Backbiting (*ghibah*)
  - b. Lying (*kidhb*)
  - c. Anger (*gayd*)
  - d. Theft (*sarq*)

### Unit 3 : Human Rights in Islam 10 Marks

- I. Meaning and importance
- II. A brief account of the following human rights :
  - a. Right to life
  - b. Right to belief
  - c. Right to property
  - d. Right to freedom of expression
  - e. Right to privacy



#### **Unit 4 : Status of Woman in Islam**

**10 Marks**

- I. As a mother
- II. As a wife
- III. As a sister
- IV. As a daughter

#### **Unit 5 : Introduction to the Quran**

**10 Marks**

- I. Qu'ran : A revelation (*wahy*) from Allah
- II. Earlier revealed books of Allah
- III. The event of first Quranic revelation
- IV. Qu'ran : The final universal message

#### **Unit 6 : Knowledge and the Quranic Teachings**

**10 Marks**

- I. Qu'ran : A Book of Divine Knowledge
- II. Importance of knowledge in the Qu'ran
- III. Commandments :
  - a. Lawful (*Halal*)
  - b. Unlawful (*Haram*)

#### **Unit 7 : Social Teachings of the Qu'ran**

**10 Marks**

- a. Respect and obedience to parents
- b. Respect and obedience to teachers
- c. Behaviour with relatives
- d. Treatment towards neighbours

#### **Unit 8 : Economic Teachings of the Qu'ran**

**10 Marks**

- a. Charity (*Sadaqah*)
- b. Crop tax (*Ushr*)
- c. Public treasury (*Bait-ul-Maal*) : concept and importance
- d. Usury (*Riba*) : meaning and prohibition

#### **Unit 9 : Introduction to Hadith**

**10 Marks**

- I. Meaning and importance
- II. Place of Hadith in Islam
- III. Kinds of Hadith : Sahih, Hasan, Maudu, Daif

#### **Unit 10 : Introduction to Fiqh (Law)**

**10 Marks**

- I. Meaning and importance
- II. Development of Fiqh : early period
- III. Sources of Fiqh :
  - a. The Qu'ran
  - b. Hadith
  - c. Ijma
  - d. Qiyas



## VEDIC STUDIES

Max. Marks : 100

Time Allowed : 3 Hours

<b>Unit I :</b>	<b>Vedic Scholars – Indian and Western</b>	<b>Marks 10</b>
<b>Unit II :</b>	<b>Allied Vedic Literature</b>	<b>Marks 10</b>
<b>Unit III :</b>	<b>Universe</b>	<b>Marks 10</b>
<b>Unit IV :</b>	<b>The Land and the People</b>	<b>Marks 20</b>
<b>Unit V :</b>	<b>Literature having Vedas as Source I</b>	<b>Marks 15</b>
<b>Unit VI :</b>	<b>Literature having Vedas as Source II</b>	<b>Marks 15</b>
<b>Unit VII :</b>	<b>Vedic Science and Technology</b>	<b>Marks 10</b>
<b>Unit VIII :</b>	<b>Vedic Concepts</b>	<b>Marks 10</b>

### **Unit I : Vedic Scholars – Indian and Western .**

- (i) Indian Scholars:  
Yask, Venkat Madhav, Sayana,  
Swami Dayanand, Aurobindo Ghosha and  
Vinoba Bhave.
- (ii) Western Scholars :  
Rudalf Roth, Friedrich, Max Muller,

### **Unit II : Allied Vedic Literature.**

- (i) Vedangas  
(ii) Upavedas

### **Unit III : Universe**

- (i) Origin of Universe  
(ii) Parts of Universe

### **Unit IV : The Land and the People.**

- (i) Mother Land  
(ii) People  
(iii) Flora and Fauna.

### **Unit V : Literature having Vedas as Source I.**

- (i) Ramayana  
(ii) Mahabharata

### **Unit VI : Literature having Vedas as Source II.**

- (i) Smiritis  
(ii) Puranas



### **Unit VII : Vedic Science and Technology.**

- (i) Ganita
- (ii) Physics
- (iii) Chemistry

### **Unit VIII : Vedic Concepts.**

- (i) Universal Law
- (ii) Sacrifice
- (iii) Equality and Unity
- (iv) Punya and Paap
- (v) Four Aims of Life

### **BOOK PRESCRIBED :**

Vedic Studies Part – II  
Published by Jammu and Kashmir State Board of School Education.





## MUSIC

**Max. Marks : 100**  
**Theory : 50 Marks**  
**Practical : 50 Marks**

**Time : 3 Hours**

### THEORY :

1. History of Ancient Indian Music.
2. Define Shruti and Swar. Establishment of Seven Shudh Swars on 22 Shruties. (according to ancient, medieval and modern scholars)
3. Classification of Indian Instruments.
4. Define Naad and its kinds.
5. Time Theory of Indian Raagas.
6. Life history and contribution of following Musicians:  
(i) Bhimsen Joshi                      (ii) Vilayat Khan                      (iii) Kashori Amonkar
7. Qualification and disqualification of Musicians ( Vocalist and Instrumentalist ).
8. Writing of Notation of the Raagas of your course of study.
9. Definition of Ragaas.
10. Notation of Talas of your course of study.
11. Definition of Talas.

### BOOKS SUGGESTED :

1. Sangeet Shastra Darpan Part II.
2. Sangeet Visharad by Shri Vasant.
3. Rag Parichay Part I and II by Srivastava.
4. Kramik Pustak Malika ( Part I and Part II ) by Pt. Bhat Khanday.
5. Humar Sangeet Rattan.

### Practical :

Note : 25 marks reserved for internal assessment shall be awarded on the basis of performance. External examination / assessment will be of 25 marks.

### PRACTICALS :

1. Singing and playing of ten Alankars. Students should have concept to create new Alankars of their choice with two or three swars combination. **03 marks**
2. Vilambit Khayal or Maseet Khani Gat in any of the prescribed Ragas of your course of study. **05 marks**
3. Drut Khayal & Razakhani Gat with initial Alap, Tanas or Todas & Jhalla in following Ragas :  
(i) Bhopali                      (ii) Bhairav                      (iii) Kafi **05 marks**
4. Any devotional or patriotic or folk song or folk dun. **02 marks**
5. Playing of the following Talas in single & double Layakaries :  
(i) Ek Taal                      (ii) Tilwara Taal                      (iii) JhapTaal                      (iv) Rupak Taal **05 marks**
6. Viva - Voce . **05 marks**

**Note : Maintenance of the File for Practical work to be included in internal assessment.**



## **SCHEME OF ASSESSMENT :**

<b>04 Long Answer Type Questions</b>	<b>= 04Q x 7 marks</b>	<b>= 28 marks.</b>
<b>05 Short Answer Type Questions</b>	<b>= 05Q x 3 marks</b>	<b>= 15 marks.</b>
<b>04 Very Short Answer Type Questions</b>	<b>= 04Q x 1 marks</b>	<b>= 04 marks.</b>
<b>03 Objective / Multiple Choice Questions</b>	<b>= 03Q x 1 marks</b>	<b>= 03 marks.</b>



# MATHEMATICS

Theory : Marks 100

Time Allowed : 3 hrs.

I.	RELATIONS AND FUNCTIONS	Marks 10
II.	ALGEBRA	Marks 13
III.	CALCULUS	Marks 44
IV.	VECTORS AND THREE - DIMENSIONAL GEOMETRY	Marks 17
V.	LINEAR PROGRAMMING	Marks 06
VI.	PROBABILITY	Marks 10

## UNIT I. RELATIONS AND FUNCTIONS.

### 1. Relations and Functions :

Types of relations : reflexive, symmetric, transitive and equivalence relations. One to one and onto functions, composite functions, inverse of a function. Binary operations.

### 2. Inverse Trigonometric Functions :

Definition, range, domain, principal value branches. Graphs of inverse trigonometric functions. Elementary properties of inverse trigonometric functions.

## UNIT II. ALGEBRA

### 1. Matrices.

Concept, notation, order, equality, types of matrices, zero matrix, transpose of a matrix, symmetric and skew symmetric matrices. Addition, multiplication and scalar multiplication of matrices, simple properties of addition, multiplication and scalar multiplication. Non - commutativity of multiplication of matrices and existence of non - zero matrices whose product is the zero matrix (restrict to square matrices of order 2). Concept of elementary row and column operations. Invertible matrices and proof of the uniqueness of inverse, if it exists; (Here all matrices will have real entries).

### 2. Determinants.

Determinant of a square matrix (up to 3 x 3 matrices), properties of determinants, minors, cofactors and applications of determinants in finding the area of a triangle, Adjoint and inverse of a square matrix. Consistency, inconsistency and number of solutions of system of linear equations by examples, solving system of linear equations in two or three variables (having unique solution) using inverse of a matrix. Cramer's rule and its applications.

## UNIT III : CALCULUS

### 1. Continuity and Differentiability.

Continuity and differentiability, derivative of composite functions, chain rule, derivatives of inverse trigonometric functions, derivative of implicit functions. Concept of exponential and logarithmic functions to the base, e. Logarithmic functions as inverse of exponential functions.

$$\lim_{x \rightarrow 0} \frac{1}{x}, \lim_{x \rightarrow \infty} \frac{1}{x}, \lim_{x \rightarrow \infty} \left(1 + \frac{1}{x}\right)^x, \lim_{x \rightarrow 0} (1+x)^{1/x}, \lim_{x \rightarrow 0} \frac{\log(1+x)}{x}, \lim_{x \rightarrow 0} \frac{e^x - 1}{x}$$

Derivative of logarithmic and exponential functions. Logarithmic differentiation, derivative of functions expressed in parametric forms. Second order derivatives. Rolle's and Lagrange's Mean Value





Theorems (without proof) and their geometric interpretations and simple applications.

## 2. Applications of Derivatives.

Applications of derivatives : rate of change, increasing / decreasing functions, tangents & normals, approximation, maxima and minima (first derivative test motivated geometrically and second derivative test given as a provable tool). Simple problems (that illustrate basic principles and understanding of the subject as well as real-life situations).

## 3. Integrals.

Integration as inverse process of differentiation. Integration of a variety of functions by substitution, by partial fractions and by parts, only simple integrals of the type to be evaluated.

$$\int \frac{dx}{x^2 \pm a^2}, \int \frac{dx}{\sqrt{x^2 \pm a^2}}, \int \frac{dx}{\sqrt{a^2 - x^2}}, \int \frac{dx}{ax^2 + bx + c}, \int \frac{dx}{\sqrt{ax^2 + bx + c}}$$
$$\int \frac{(px + q)}{ax^2 + bx + c} dx, \int \frac{(px + q)}{\sqrt{ax^2 + bx + c}} dx, \int \sqrt{a^2 \pm x^2} \cdot dx, \int \sqrt{x^2 - a^2} dx,$$
$$\int \sqrt{ax^2 + bx + c} dx, \int \frac{dx}{a + b \cos x}, \int \frac{dx}{a + b \sin x}, \int (px + q) \sqrt{ax^2 + bx + c} dx$$

Definite integrals as a limit of a sum, Fundamental Theorem of Calculus (without proof), Basic properties of definite integrals and evaluation of definite integrals.

## 4. Applications of the Integrals.

Applications in finding the area under simple curves, especially lines, area of circles / parabolas / ellipses (in standard form only), area under the curve  $y = \sin x$ ,  $y = \cos x$ , area between the two above said curves (the region should be clearly identifiable).

## 5. Differential Equations.

Definition, order and degree, general and particular solutions of a differential equation. Formation of differential equation whose general solution is given. Solution of differential equations by method of separation of variables, homogeneous differential equations of first order and first degree. Solutions of linear differential equation of the type :

$$\frac{dy}{dx} + py = q, \text{ where } p \text{ and } q \text{ are functions of } x \text{ and}$$

$$\frac{dx}{dy} + px = q, \text{ where } p \text{ and } q \text{ are functions of } y.$$





## UNIT IV : VECTORS AND THREE – DIMENSIONAL GEOMETRY

### 1. Vectors.

Vectors and scalars, magnitude and direction of a vector. Direction cosines / ratios of vectors. Types of vectors (equal, unit, zero, parallel and collinear vectors), position vector of a point, negative of a vector, components of a vector, addition of vectors, multiplication of a vector by a scalar, position vector of a point dividing a line segment in a given ratio. Scalar (dot) product of vectors, projection of a vector on a line. Vector (cross) product of vectors. Scalar triple product.

### 2. Three –dimensional Geometry.

Direction cosines / ratios of a line joining two points. Cartesian and vector equation of a line, coplanar and skew lines, shortest distance between two lines. Cartesian and vector equation of a plane. Angle between (i) two lines (ii) two planes (iii) a line and a plane. Distance of a point from a plane.

## UNIT V : LINEAR PROGRAMMING

### 1. Linear Programming.

Introduction, definition of related terminology such as constraints, objective function, optimization, different types of linear programming (L.P) problems, mathematical formulation of L.P. problems, graphical method of solution for problems in two variables, feasible and infeasible regions, feasible and infeasible solutions, optimal feasible solutions (up to three non-trivial constraints).

## UNIT VI : PROBABILITY

### 1. Probability.

Multiplication theorem on probability. Conditional probability, independent events, total probability. Baye's Theorem, Random variable and its probability distribution, mean and variance of random variable. Repeated independent (Bernoulli) trials and Binomial distribution.

### Suggested Textbook :

- 1) Mathematics Textbook for Class XII, NCERT, Publication.



# STATISTICS

Max. Marks : 100

Theory : 70 Marks

Time Allowed : 3 hrs

## Unit I : Probability - I

( 08 marks )

Random experiment, trial, sample space, sample point, event, impossible event, exhaustive events, equally like and mutually exclusive events. Independent & dependent events. Classical / mathematical and statistical definition of Probability. Axioms of Probability. Law of addition for two event. Multiplication law for two events. Concept of conditional probability. Statement of Baye's Theorem (without proof) and examples.

## Unit II : Probability - II

( 08 marks )

Random variable, Discrete & continuous random variable. Distribution function. Discrete & continuous Discrete function. Probability mass function, probability density function. Examples on distribution function, probability mass function & probability density function. Definition of Bernoulli, Binomial & Poisson distributions and their applications.

## Unit III : Regression Analysis

( 10 marks )

Concept of Regression. Regression lines, Regression coefficients. Properties of Regression coefficients. Angle between two Regression lines. Examples on Regression Analysis.

## Unit IV : Theory of Attributes

( 08 marks )

Introduction, Dichotomy, Notations, Manifolds Classifications. Class frequencies. Order of class frequencies. Ultimate Class Frequency. Consistency of Data. Criteria for checking independence & association between two attributes. Yule's Coefficient of association.

## Unit V : Index Numbers

( 10 marks )

Introduction, Characteristics of Index numbers, Uses of Index numbers, Problems in the construction of Index numbers. Price relatives. Methods of constructing Index Numbers. Simple or unweighted Index numbers and its limitations. Simple average of price relatives, its merits and demerits. Weighted Index numbers. Method of Laspeyer's Paasche's and Fisher's ideal index numbers. Time and factor reversal tests.



## **Unit VI : Vital Statistics**

**( 08 marks )**

Meaning and nature of Vital Statistics. Its uses. Vital events, rates of Vital events. Measurements of population, mean population, measures of fertility and mortality. Crude birth rate, specific birth rate, standardized birth rate. Crude death rate, specific death rate, standardized death rate.

## **Unit VII : Sampling Theory**

**( 08 marks )**

Meaning and objectives of Sampling. Concept of Statistical population and Sample. Requisites of a good sample. Complete enumeration of population, advantages & disadvantages of complete enumeration over sample survey. Concept of Sampling and non Sampling errors. Types of Samples. Methods of Sampling. (Simple Random Sampling, stratified random Sampling and systematic Sampling), advantages and disadvantages of these methods.

## **Unit VIII : Time Series and Computers.**

**( 10 marks )**

Introduction and importance of Time Series. Components of Time Series (secular trend, seasonal variation. Cyclic variation and irregular movements). Measure of trend ( free hand graphical methods and semi average method).

Computers :-Introduction to operating systems (OS), functions of operating systems, graphical representation of data charts through Excel. Calculation of measures of central tendency through Excel. Concept of Internet & its applications.

## **PRACTICAL WORK :-**

**(30 marks )**

1. Practical's based on Baye's Theorem.
2. Calculation of two Regression lines.
3. Construction of Index numbers ( Laspyer's , Paasche's and Fisher's method ).
4. Practical's based on measures of fertility and mortality.
5. Estimate of Trend values by free hand and semi average method.
6. Drawing of Charts through Excel.
7. Measures of central Tendency through Excel.

## **BOOKS SUGGESTED :-**

1. Fundamentals of Mathematical Statistics by S. C. Gupta and V. K. Kapoor ( S. Chand, New Delhi ).
2. Fundamentals of Applied Statistics by S. C. Gupta & V. K. Kapoor ( S. Chand, New Delhi ).
3. Practical Statistics by S. C. Gupta ( Himalayan Publishing House, New Delhi ).
4. Mathematical Statistics by H. C. Saxena ( S. Chand, New Delhi ).
5. Introduction to Mathematical Statistics by Robert V. Hogg & Allen. T Craig ( Macmillan International Publishers Co. Ltd ).





## BUSINESS MATHEMATICS

Max. Marks: 100

Time: 3 hrs

### Unit 1st:- Matrices and determinants

(15 marks)

Definition of a matrix, various types of matrices. Addition and multiplication of matrices. Transpose of a matrix and its properties (without proof).

Determinants of order not exceeding order three. Minors and cofactors of the elements of a determinant. Properties (without proof) of determinants and their applications. Solution of a system of linear equations using determinants (Cramer's Rule). Singular and non-singular matrices. Adjoint of a matrix, inverse of a matrix, solution of linear equations with the help of matrices having two and three variables.

### Unit 2<sup>nd</sup> Limits and continuity of a function

(10 marks)

Definition of limit of a function, algebra of limits, Fundamental limits

$$\lim_{x \rightarrow a} \frac{x^n - a^n}{x - a}, \lim_{\theta \rightarrow 0} \frac{\sin \theta}{\theta}, \lim_{x \rightarrow 0} \frac{a^{mx} - 1}{x}, \lim_{n \rightarrow \infty} \left(1 + \frac{1}{n}\right)^n,$$
$$\lim_{x \rightarrow 0} \frac{\log(1+x)}{x}$$

and their applications. Continuity of a function.

### Unit 3<sup>rd</sup> Derivative

(15 marks)

Derivative of a function, its geometrical and physical significance, derivative of some simple functions by first principle method ( $x^3$ ,  $(ax + b)^n$ ,  $\sin x$ ,  $\cos x$ ,  $\tan x$ ,  $\log x$ ,  $a^x$ ), derivative of sum, product and quotient of two functions. Derivative of inverse trigonometric functions (without proof) with applications.

### Unit 4<sup>th</sup> Integration

(15 marks)

Integration as inverse of differentiation. Integration of various functions by substitutions, partial fractions & by parts. Evaluation integrals of the type

$$\int \frac{dx}{x^2 \pm a^2} dx, \int \frac{dx}{a^2 - x^2}, \int \frac{dx}{\sqrt{a^2 - x^2}}, \int \frac{dx}{\sqrt{x^2 \pm a^2}},$$
$$\int \frac{dx}{ax^2 + bx + c}, \int \frac{(px + q)dx}{ax^2 + bx + c}, \int \sqrt{x^2 \pm a^2} dx, \int \sqrt{a^2 - x^2} dx,$$
$$\int \frac{dx}{\sqrt{ax^2 + bx + c}}; \int \frac{(px + q)dx}{\sqrt{ax^2 + bx + c}}$$





**Unit 5<sup>th</sup> Differential equation**

**(15 marks)**

**Differential equations :-** Order and degree of differential equations. Solution of differential equations (variable separable method, homogenous differential equations. First order linear differential equations)

**Unit 6<sup>th</sup> Applications of Integration**

**(10 marks)**

Definite integrals as a limit of a sum, Fundamental theorem of calculus (without proof) Properties of definite integrals and evaluation of definite integrals using properties.

**Unit 7<sup>th</sup> Application of calculus in commerce and economics**

**(10 marks)**

Average cost and marginal costs. Total revenue, average revenue and marginal revenue. Break even analysis, maximization of total revenue and total profits. Maximization of average costs.

**Unit 8<sup>th</sup> Computing**

**(10 marks)**

What are computers, what they can perform and what they can't perform. Role and use of computers in modern society, meaning of a problem- algorithm, a detailed and precise step by step method of solution of the problem illustrated by means of simple day to day problems. Problems (like buying of an article, multiplication, compound interests, discount, L.C.M and H.C.F with easy exercises.



## COMPUTER SCIENCE

**Maximum Marks=100**

**Theory=70 Marks**

**Practical=30 Marks (Internal=10: External=20)**

**Time 03 : hours**

1. Object Oriented Programming in C++	15 marks
2. Constructors and destructors	05 marks
3. Inheritance	05 marks
4. Pointers	05 marks
5. Data structures	10 marks
6. Database and SQL	10 marks
7. Boolean Logic	10 marks
8. Networking and Cyber security	10 marks

### UNIT 1: Object Oriented Programming in C++

- Advantages of OOPs
- Basic elements of OOPs: Class, Object, Data hiding, Data abstraction, Data encapsulation, Polymorphism, Inheritance.
- Implementation of Polymorphism using function overloading.
- Implementation of OOP in C++
  - Defining a Class
  - Members of a Class(Data members and Member functions)
  - Defining an Object
  - Array of Objects
- Access Specifiers
- Concept of Scope resolution operator
- Member function definition (Inside and Outside a Class)

### UNIT 2 Constructors and Destructors

- Constructors:
  - Special characteristics
  - Declaration and Definition of Constructors
  - Types of constructors (Default constructor, Parameterized constructor)
- Destructors
  - Special characteristics
  - Declaration and Definition of destructors