

Haryana Public Service Commission

Bays No. 1-10, Block-B, Sector-4, Panchkula

ANNOUNCEMENT

The Commission had uploaded the syllabus of 19 subjects, for the post of Post Graduate Teachers (PGTs), on its website in December, 2022 in respect of advertisement No. 31 & 32 of 2022. In supersession of the said announcement, it is hereby announced for the general information of all candidates that minor changes have been made in the syllabus of the following subjects and it has been uploaded on the Commission's website.

1. Sociology
2. Urdu
3. Geography
4. Home Science
5. Physics
6. Commerce
7. English

Dated: 06.04.2023


Dy. Secretary
Haryana Public Service Commission
Panchkula

REVISED SYLLABUS FOR WRITTEN EXAMINATION FOR PGT (SOCIOLOGY)

1. Development of Sociology
2. The Meaning of Sociology
3. Subject matter of sociology
4. Sociology and Social Sciences
5. Society – Meaning, characteristics, Types of Society.
6. Community – Meaning, Characteristics
7. Social Group – Meaning and Types (Primary and Secondary)
8. Family – Meaning, Features, Types
9. Concept of Religion and Magic – Meaning, Characteristics and Types of Magic
10. Marriage – Meaning, Aims, and Types of Hindu Marriage
11. Indian Social Problems – Regionalism, Casteism, Communalism, Corruption, Gender, Age
12. Social Change – Meaning, Characteristics, Factors
13. Institution – Meaning, Features and Types
14. Association – Meaning, Features and Types, Difference between Association and Institution.
15. Culture – Definition, Characteristics, Elements of Culture
16. Sociological Perspective – Scientific and Humanistic Orientations to Sociological Study
17. Social Structure – Meaning and Characteristics
18. Status and Role – Definition, Characteristics, Types and Relation between Status and Role
19. Socialization – Meaning, Characteristics, Stages and Agencies, Theories (Cooley, Mead, Freud)
20. Social Control – Meaning, Characteristics, Types and Agencies
21. Social Stratification and Mobility – Meaning, Forms and Theories of Stratification
22. Social Process – Meaning, Characteristics and Types (Co-operation, Competition and Conflict)
23. Kinship – Meaning, Features, Kinship Usages
24. Problems of Scheduled Caste, Scheduled Tribes, Women and Minorities
25. Population Profiles and related issues – Explosion, Consequences
26. Crime and Juvenile Delinquency – meaning, Types of Crimes, Factors and Consequences, causes
27. Social Research – Meaning, Stages and Types
28. Sampling – Meaning, Features and Types of Sampling

29. Tools of Data Collection – Observation, Interview, Schedule and Questionnaire
30. Basic statistics.
31. Emergence of Social Thought – Comte-Positivism, Spencer-Social Darwinism, Super Organic Evolution
32. Durkheim – Division of Labour, Suicide, Social Fact
33. Maxweber – Social Action, Ideal Type, Views on Religion, Bureaucracy
34. Karl Marx – Class and Class Conflict, Views on Social Change, Dialectical Materialism, Alienation
35. Process of Social Change – Sanskritization, Westernization, Modernization
36. Post Modernism – Meaning and Features
37. Liberalization and Globalization – Meaning, Features and Impact of Liberalization and Globalization on Indian Society

i. Educational Psychology

- Concept, scope and functions of educational psychology.
- Physical, cognitive, social, emotional and moral developmental characteristics of adolescent learner and its implication for teaching-learning.
- Behavioural, cognitive and constructivist principles of learning and its implication for senior secondary students.
- Concept of mental health & adjustment and adjustment mechanism.
- Emotional intelligence and its implication in teaching learning.

ii. Pedagogy and Teaching Learning Material (Instructional Strategies for Adolescent Learner)

- Communication skills and its use.
- Teaching models- advance organizer, concept attainment' information Processing, inquiry training.
- Preparation and use of teaching-learning material during teaching.
- Cooperative learning.

iii. General

- General Awareness including Questions related to Haryana.
- General Mental Ability including Basic numeracy & data interpretation
- Logical Reasoning & Analytical Ability
- Decision making & problem solving

REVISED SYLLABUS FOR WRITTEN EXAMINATION FOR PGT (URDU)

Prose

Dastaan

Meeraman: Sarguzisht Azad Bakht Badshahki

Drama

Amanat: Inder Sabha (Manzoom Drama)

Novel

Premchand: Bewa

Short story

Quratulain Haider: Photographer

Balwant Singh: Lamhe

Surendra prakash: Bajooka

Iqbal Majeed: Sukoon Ki Nind

Inshaiya

Khwaja Hasan Nizami: Machhar

Ehtsham Hussain : Khuji

Khaka

Ahmed Jamal Pasha, Kaleemuddin Ahmed,
Shahid Ahmed dehlvi, Meer Baqar Ali Dastan go

Rhetorics

Tashbeeh, Isteara, Mubaligha, Tajhul-E-Arifana

Various forms of poetry and prose:

Ghazal : Qasida, Marsiya

Novel : Afsana, Khaka

Poetry

Ghazaliyat : Walidakkani, Meer Taqi Meer, Meer Dard Mohi Ahsan Jazbi, Nasir Kazmi, Jan Nisar
Akhtar

Manzooat : Nazeer Akbarabadi, Akbar Allahabadi, Noon Meem Rashid Ismil Merathi, Makhdoom Mohiuddin

Qasida : Sauda, Zauq

Marsiya: Anees, Dabeer

Rubaiyat : Jagat Mohan Lal Rawan, Amjad Haiderabadi

Geet : AkhtarShirani, Meeraji, Salam MachhliShehari, Ahsan Danish

Prose Dastan

Meer Amman : BaghoBahar

Drama

Agha Hashr Kashmiri : Silver King

Krishan Chandra : Darwaze Khol Do

Novel

Premchand : Bewa

Short story

Premchand : Namak Ka Darogha

Bedi : Lajwanti

Minto : Naya Qanoon

Inshaiya:

Sajjad Haider Yaldaram : Mujhe Mere Doston Se Bachao

Pitras Bukhari :Yarbash

Sir Syed : Guzra Hua Zamana

Rhetorics

Majaz, Laffo Nashr, Murattab Wa Ghair Murattab, Talmeeh, Tazad, Mubalilgha, Iham, Husn-e-taleel.

Various forms of prose and poetry

Poetry

Masnavi, Rubai, Qata Jadeed Nazm

Prose : Dastan, Reportage, Inshaiya

Poetry :

Ghazaliyat : Ghalib, Momin, Nasikh, Firaq, Aziz

Manzoomat : Iqbal, Josh, Faiz, Akhtar, Shirani

Qasida :Zauq, MohsinKakorvi

Marsiya :Anees, Zameer

Rubaiyat :Anees, Josh.

Prose:

Dastan

Meer Amman : Bagh-O-Bahar

Drama:

Agha HashrKashmiri : Silver King

Imtiyaz Ali Taj :Anarkali

Novel

Nazeer Ahmed : Tobattunnasuh

Mirzahadiruswa : UmraoJan Ada

Premchand : Godan

Afsana: Premchand : Wardaat

Krishan Chandra : Andata

Proetry

Ghazliyat : Wali, Atish, Daagh, Ali Sardar Jafri

Manzoomat : Iqbal, Josh, Faiz

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REVISED SYLLABUS FOR WRITTEN EXAMINATION FOR PGT (GEOGRAPHY)

Topic I: Geography as a discipline-

Geographical ideas in ancient, medieval & modern periods: the contributions of Varenus, Kant, Humboldt and Ritter. Influence of Richthofen and Darwin. Vidal-de-la Blache, F. Ratzel and Indian geographic.

Contemporary geography: Post Second World War, Environmentalism, Areal Differentiation, spatial organization, Behavioural and perceptual Geography. Positivism in Geography. Humanistic Geography. Marxist Geography and critical social theory. Development in Indian Geography.

Topic-2 Origin and Evolution of the Earth-

Introduction to the solar system,

Motions of Earth: Rotation, Revolution, Occurrence of Day and Night; change of seasons; Latitudes and Longitudes; Finding time.

Earth's Interior: Origin of continents and ocean basins Wegener's Continental drift theory, Theory of Plate Tectonics Earthquakes and Volcanoes, Folding and faulting

Origin of the Earth: Nebular hypothesis (old Theory) and Big-Bang Theory. Evolution of continents, atmosphere and oceans.

Topic-3 Interior of the Earth and Distribution of oceans and continents-

Constitution of Earth's interior (based on Seismic Evidences), origin of the continents and ocean basins. Wegener's theory of Continental drift and Plate Tectonics. Plate movements and interactions- Volcanism and seismicity.

Topic-4 Landforms-

Mineral and rocks- classification of rocks, rock cycle. Important minerals geomorphic process of denudation Endogenic and Exogenic processes. Mass Wasting, Landslide, Work of River, Glacier Wind, Sea Waves etc, processes of soil formation.

Topic-5 Climate:

Atmosphere: Composition and structure. Insolation and temperature, Atmospheric pressure and winds, Atmospheric moisture, cyclones, classification of climate (Koeppen and Thornthwaite Schemes classification). Global climatic changes: Causes and effects.

Topic-6 Water (Ocean)

Geomorphology of the ocean floor, submarine relief features of Atlantic, Pacific and Indian Ocean. -Salinity, temperature.

Movement of ocean water: Currents, tides and waves. Marine deposits and coral reefs.

Topic -7 Life on the Earth

Approaches in environmental Geography, landscape, ecosystem and perception approaches, Man and the Biosphere: Interactive and dynamic relationship. Human impact on biogeochemical cycles.

Topic-8 India:

Geographical basis of Indian State-territory; location, extent, shape and size.

Topic-9

Physiography and Drainage

Structure, Physiographic divisions, Drainage system and its evolution.

Topic-10 Climate, Vegetation and Soil-

Climate: factors controlling climate of India

Origin and mechanism of Indian monsoon; Seasons of India, Classification of climate of India (Koeppen's, Thornthwaite).

Soils: Type and distribution (I.C.A.R.), Soil problems, conservation of soil

Vegetation- Types & Distribution; conservation

Wild Life- its conservation.

Topic-11 Natural Hazards and disasters-

Causes, cases/events Consequences and management in India Environmental Hazards: Floods, droughts, cyclones, earthquakes and landslides; human adjustment to hazards; hazards perception and mitigation; environmental institutions and legislation in India.

Topic -12 People (World and India)

Trends and patterns of population growth: determinants and patterns of population distribution and density of Population, demographic transition; Human migration, Patterns of human development.

Topic-13 Human Activities: (World and India)

Primary: - Hunting, gathering, Herding (Nomadic & Commercial) fishing, mining and agriculture; Agricultural practices; some major crops.

Secondary: - Industries: Classification, Theories of localization, major Industries, recent trends in industries, world comparisons.

Tertiary:-(Services)

Quaternary-Quinary activities

Planning in India: target area planning, idea of sustainable development

Topic-14 Transport, Communication and Trade (World and India)

Transport and communication Roads, railways, waterways and airways; oil and gas pipelines, national electric grids. Communication networking-radio, television, satellite and Internet.

International Trade-Basis and components, trade balance, major trading organizations, changing pattern of India's foreign trade, sea-routes, in land water-ways, sea ports and their hinter-land.

Topic-15 Human settlements (World and India)

Temporary and Permanent settlements, rural settlements: origin, types and patterns; Urban settlements: Origin and growth of towns; functional classification of towns. Problems of urbanization in the world; urbanization in India; Urban slums and squatters. Morphology of cities; distribution of Mega-cities, problems of human settlements in Developing countries.

Topic -16 Geographical perspective on selected issues and problems

Environmental pollution-Land, Water, Air, Noise, Global Warming, Poverty, Food Security.


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REVISED SYLLABUS FOR WRITTEN EXAMINATION FOR PGT (HOME SCIENCE)

- Home Science - Education meaning, definition, scope, objectives and history.
- Changing concept of different areas of Home Science.
- Definition, functions and classification of foods.
- Nutrients and their composition, sources and functions.
- Balanced Diet.
- Methods of cooking.
- Home Management definition.
- Motivating Factors- value, goals and standard.
- Resources- classification and characteristics.
- Income- definition, meaning and types.
- Budget- steps.
- Saving and Investment
- Fibre- types and properties- Natural and Man-Made
- Yarn construction
- Weaving- types.
- General principles of clothing construction
- Definition of Child Development, Human Development
- Scope of Human Development.
- Principles of growth and Development.
- Role of Heredity and environment.
- Life span stages.
- Types of Development


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- Definition of Developmental tasks and different tasks, different stages of human development.
- Characteristics of different age groups and their physiological and behavioral problems.
- Meaning, concepts and scope of special education and classification of children with special needs.

(2) Knowledge of Subject concerned:

- Changing concepts of Home Science.
- Areas of Home Science- objectives and scope of each area.
- Professional organizations and Research Institutes, contributing to different areas of Home Science.
- Formal, Non-formal and Informal education.
- Programme planning, Implementation and Evaluation.
- Government and NGO's Development Programmes.
- Meaning, definition, principles and basic elements of extension education.
- Extension teaching methods.
- Communication concepts and meanings.
- Different types of communication Aids.
- Nutrients- their composition and sources.
- Recommended dietary allowances and deficiencies.
- Nutritive value of important cereals, pulses, vegetables, fruits, milk and milk products, eggs, meat and fish.
- Methods of cooking- their effects on nutrients and methods of enhancing the nutrients value of foods.
- Selection, purchase and storage of foods.
- Food spoilage.
- Food preservation- importance, principles and methods.


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- Food adulteration- causes, identification, preventive and control measures, food laws and standards, labels, etc.
 - Changing trends in food consumption- fast foods, junk foods etc.
 - Nutritional status- concept, assessment methods.
 - Principles of meal planning.
 - Diets of normal individual of different ages, sex, profession and physiological condition.
(Pregnant and lactation)
 - Dietary management during different diseases.
 - Concept and type of community health and community nutrition.
 - Nutrition problems of community and implication for public health.
 - Current situation in India.
 - Nutritional Assessment and Surveillance.
 - Nutrition and health communication.
 - Management Process- Planning, controlling and evaluation.
 - Decision Making.
 - Management of Resources- Time, money and energy.
 - Work simplification- meaning, importance and its application in various household activities.
 - Introduction of foundation of art- design, elements and principle of design.
 - House planning/space designing.
 - Selection and types of furniture and furnishing.
 - Financial and legal consideration- availability of funds for having housing.
 - Interior designing and Principles of arrangements.
- (3) **Definition, meaning and need of consumer.**
- Market, consumer education methods, contents and sources.


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- Consumer Aids and consumer protection.
 - Taxation- need, types, effect of tax on work and saving.
 - Wills and trusts.
 - Early identification, treatment, prevention and rehabilitation of each category of children with special needs.
 - Meaning, importance and objectives of Early Childhood care and Education.
 - Different types of Early Childhood Care and Education Centers.
 - Meaning and concept of developmentally appropriate programme/practice (DAP). Planning, Implementation and Evaluation of Early Childhood Programme.
 - Concept of adolescent and adolescence stage and problems of adolescence stage. •Meaning and definition of marriage, types and functions of marriage, factors of mate selection. •Meaning and definition of family, types of family •Population education and dynamics. •Yarn making, weaving and other methods of fabric construction and their effect on appearance, durability and maintenance of garments. •Different types of finishes. •Selection, care and storage of different types of clothes including readymade garments. •Importance of clothing, social and psychological aspects of clothing. •Functions of clothing construction drafting and making of paper patterns. •Body measurement- importance of taking body measurements and its relation to sizes and different types of garments. •Preparation of fabric cutting- layout, pinning, marking and cutting. •Wardrobe planning. •Selection of fabrics and garments for adolescent, men and women. •Selection and buying fabrics for various users. •Elements, principles of design in clothing. •Traditional Textile of India. • Fashion Terminology and fashion cycle. 3. Knowledge of Subject Concerned: PG Level • Extension Management and Administration. •Extension Programme Management. •Participating Extension Approaches – RRA, PRA and PLA.
 - Participating Communication.
 - Extension Planning methods. •Communication Strategy. • Print and Oral Communication.
- (4) • Women Empowerment. •Entrepreneurship. •Different methods of enhancing the nutritive value of foods – fortification. • Food adulteration – causes, identification preventive and control measures. •Inter-relationship of agriculture, food, nutrition, health and population. • Energy needs, basal metabolism and total energy requirement. •Digestion, absorption and utilization of major nutrients.

- Nutritional Status.
 - Nutritional problems in the country .
 - Dietary management during different diseases.
 - Nutrition Policy in India.
 - Nutrition Problems of community and implication for public health. •Different organizations / Programmes working for children with special needs. •Administration and Supervision of Early Childhood Care and Education Centres / institutes. • Need of Guidance and Counseling at each life span stage of development. •Marital adjustment, legal aspects of marriage. Role of mother and father in the family. Functions (Traditional and Modern) of the family and factors affecting family functions.
 - Meaning and stages of family life-cycle. •Family welfare organizations (Government and Non Government) in India. •Parenting Styles and impact of these styles on the children. • Family planning measures, Reproductive Health. •Family disorganization. •Factors influencing residential planning. •Space designing according to various activities and family needs. • Kitchen – Types and Storage ergonomics. •Illumination – purpose, Types, Lightening – types – unit of measurement, glare, Fixtures – types & selection. • Furniture – types & selection. •Furnishing & accessories - types & selection. • Work ergonomics – Meaning & Concept. • Work Physiology – Introduction, definition & types of work static and dynamic. •Physiological factors influencing. •Working environment. • Fashion terminology, sources, fashion cycle and season.
 - Factors favouring of fashion cycle and season, Consumer demand and fashion marketing and fashion change.
 - Paper pattern – basic designing
 - Draping
 - Readymade Garment need and Criteria.
 - Future trends in fashion technology.
- (5) • Dyes and their effects. (Educational Psychology, Pedagogy, Teaching Learning Material, Use of computers and Information Technology in Teaching Learning) 1. Importance of Psychology in Teaching-Learning : • Learner, • Teacher, • Teaching-learning process, • School effectiveness. 2. Development of Learner • Cognitive, Physical, Social, Emotional and Moral development patterns

and characteristics among adolescent learner. 3. Teaching – Learning :• Concept, Behavioural, Cognitive and constructivist principles of learning and its implication for senior secondary students.

- Learning characteristics of adolescent and its implication for teaching.

4. Managing Adolescent Learner :

- Concept of mental health and adjustment problems.

- Emotional Intelligence and its implication for mental health of adolescent.

- Use of guidance techniques for nurturing mental health of adolescent. 5. Instructional Strategies for Adolescent Learner :

- Communication skills and its use.

- Preparation and use of teaching-learning material during teaching.

- Different teaching approaches: Teaching models- Advance organizer, Scientific enquiry, Information, processing, cooperative learning.


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REVISED SYLLABUS FOR WRITTEN EXAMINATION FOR THE POST OF PGT (PHYSICS)

1. **Physical world and measurement** - Fundamental and derived units, systems of units, dimensional formula and dimensional equations, Accuracy and error in measurement.
2. **Description of motion** - motion in one dimension, uniformly accelerated motion, motion with uniform velocity/ Acceleration in two dimensions, motion of an object in three dimensions, relative velocity.
3. **Vectors** - Scalar and vector quantities, unit vector, addition and multiplication.
4. **Laws of motion** - first, second and third law of motion, impulse, momentum, conservation of linear momentum.
5. **Friction** - Types of friction, laws of friction, lubrication.
6. **Work, Energy and Power** - Work done by a constant / variable force, K.E., P.E., Elastic collision in one and two dimensions, gravitational P.E., P.E. of a spring, conservation of energy, conservative and non-conservative forces, power.
7. **Rotational motion** - Centre of mass, its motion, rotational motion, Torque, angular momentum, centripetal force, circular motion, moment of inertia, theorems of M.I., Rolling motion.
8. **Oscillatory motion** - Periodic motion, S.H.M. its equation, K.E. and P.E., concept of free, forced and damped oscillations, simple pendulum, oscillation of a loaded spring.
9. **Gravitation** - Universal law of gravitation, variation of g , orbital and escape velocity, planetary motion, Kepler's law.
10. **Elasticity** - Hook's law, young's modulus, bulk modulus and shear modulus of rigidity. Applications of elastic behaviour of matter.
11. **Surface tension** - Fluid pressure, Pascal's law, Archimedes principle, molecular theory of surface tension, Excess of pressure inside a drop and soap bubble, angle of contact, Capillarity, Detergents.
12. **Liquids in motion** - Type of flow of liquid, Critical velocity, Coefficient of viscosity, Terminal velocity, Stoke's law, Reynold's number, Bernoulli's theorem - its applications.
13. **Kinetic theory of gases** - Laws for gases, Ideal gas equation, Assumptions of Kinetic theory of gases, Pressure exerted by a gas, Law of equipartition of energy, Degree of freedom, Specific heats of gases and solids, Mean free path.
14. **Heat and thermodynamics** - Concept of Heat and temperature, Temp. Scales, Thermal expansion of solid, liquid and gases, specific heat, change of state, latent heat, Thermal capacity, Zeroth & first law of thermodynamics, thermodynamic process, second law of thermodynamics, Carnot engine.

15. **Radiation** - Modes of transmission of heat, thermal conductivity, Thermal radiations, Perfect blackbody, Newton's law of cooling.
16. **Waves** - Type of waves, wave equation, speed of a progressive wave, superposition principle, beats, stationary waves and normal modes, Doppler's effect.
17. **Ray optics and optical instruments** - Laws of reflection, Reflection by plane and curved mirrors, Laws of refraction, total internal refraction - applications, Lenses, Image formation by lenses, Dispersion by prism, Sattering of light, Eye, Defects of vision, Microscopes, Telescopes.
18. **Electrostatics** - Coulomb's law, electric field and potential due to a point charge and Dipole, concept of Dielectric, Gauss theorem - its applications, Electric lines of force, Force and torque experience by a dipole in uniform electric field, potential energy of a system of charges, equipotential surfaces
19. **Capacitance** - Capacity of an isolated spherical conductor, capacitor - principle, Parallel plate capacitors, effect of dielectric on capacitance, series and parallel combinations of Capacitors, Energy of a Capacitor, van de graff generator.
20. **Current Electricity** - Ohm's Law, Temperature dependence of resistance, colour code of resistors, series and parallel combination of resistors, resistivity, primary and secondary cells and their combination in series and parallel, Kirchoff's laws, wheat stone bridge and potentiometer - their applications, electrical energy and power.
21. **Magnetism and magnetic effect of current** - Natural and manmade magnet, magnetic lines of force, Bar magnet, magnetism and gauss law, magnetic moment, Torque on a magnetic dipole, magnetic field, magnetic induction, magnetic intensity, permeability, susceptibility & Intensity of magnetisation - their relations. Curie Law, Hysterisis, B-H curve. Classification of magnetic materials. Magnetic force, motion in the magnetic field, Biot - Savarts law, magnetic field by a straight Conductor & Circular Current Carrying Coil, Ampere's Circuital law, Solenoid, Toroid, Moving Coil Galvanometer, Ammeter, Voltmeter.
22. **Electromagnetic Induction** - Faraday's Law, Lenz's Law, Self Induction, Mutual Induction, Electric Generators.
23. **Alternating Current** - Mean and rms value of A.C., A.C. Circuit Containing resistance, Inductance and Capacitance, Series resonant Circuit, Q factor, Average power in A.C., Wattless Current, L C oscillations, transformer.
24. **Wave Optics** - Huygen's principle - reflection and refraction, Interference of light, young's double slit experiment, Diffraction of light, Single slit diffraction, resolving power of optical instruments, polarisation of light, law of malus. Polarization by reflection and scattering.
25. **Photoelectric effect and matter waves** - Einstein's Photoelectric equation, Photocell,

matter waves, Debroglie's hypothesis, Davison and Germer's experiment.

26. **Nuclear Physics and Radioactivity** – Nucleus, size, Mass defect, Binding energy, Nuclear fission and fusion, Nuclear reactor, Radioactivity, laws of disintegration and decays.
27. **Solids and semi conductor devices** - Energy band in solids, Semi conductor, P-N Junction, Diodes, Diode as an rectifier, Special purpose p-n junction diodes, Junction transistor, Logic gates, integrated circuit.
28. **Electromagnetic Waves and Communication** – Displacement current, Electromagnetic Waves-Source, nature. Electromagnetic spectrum, Elements of a communication system, Bandwidth of signals and transmission medium, Sky and space wave propagation, Need for modulation, Production and detection of an AM wave.
29. **MECHANICS:** Inertial frames, Galilean transformation, Non-inertial frames, fictitious forces, rotating co- ordinate systems, Coriolis force and its applications, postulates of special theory of relativity, Lorentz transformations, relativistic addition of velocities, length contraction, time dilation, Variation of mass with velocity, mass energy relation.

System of particles, concept of reduced mass, single stage and multistage rocket, Analysis of collision in centre of mass frame. Angular momentum of a system of particles, equation of motion of a rotating body, inertial coefficients, kinetic energy of rotation and idea of principles axes, Euler's Equations.

Elasticity, relation between elastic constants. Theory of bending of beams and Cantilever, Torsion of a cylinder, Bending moments and Shearing forces.

30. **WAVES & OSCILLATIONS:** Potential well and periodic oscillations. Damped harmonic oscillators, Power dissipation, Quality factor, Driven harmonic oscillator, Transient and steady state, Power absorption, Motion of twocoupled oscillators, normal modes.

Waves in media, speed of longitudinal waves in a fluid. energy density and energy transmission in Waves, , Group velocity and phase velocity, their measurements.

Noise and Music: The human ear and its responses: limits of human audibility. Intensity and loudness, bel and decibel, the musical scale. Temperament and musical instruments. The acoustics of halls. Reverberation period.

31. **ELECTROMAGNETISM** : Concept of multi poles, Electrostatic energy of uniformly charged sphere, classicalradius of an electron. Screening of E field by a conductor.

Electric field in matter: atomic and molecular dipoles, , dielectrics, polarisability, polarization vector, electric displacement, electrostatic energy of charge distribution in dielectric, Lorentz local field and Clausius Mossotti equation. Electrostatic field – conductors in electric field, Boundary conditions for potential and field at dielectric surface, uniqueness theorem, Poisson's and Laplace's equations in Cartesian cylindrical and spherical polar

coordinates, solutions of Laplace's equations in Cartesian coordinates.

Maxwell's equations (integral and differential form) and displacement current. E as an accelerating field: Electron gun, case of discharge tube, linear accelerator, E as deflecting field, CRO.

32. **THERMODYNAMICS AND STATISTICAL PHYSICS:** Maxwell velocity distribution, Transport Phenomenon: Mean free path, Coefficients of viscosity, thermal conductivity, diffusion and their interrelation. Clausius-Clapeyron equation, vapor pressure curve. Maxwell relations and their applications.

Production of low temperatures, Joule Thomson expansion and J.T. coefficients for ideal as well as van der Waals gas, , Temperature inversion, Regenerative cooling, Cooling by adiabatic demagnetization, Liquid Helium, He-I and He-II, Super fluidity, Nernst heat theorem.

Phase space, Micro and Macro states thermodynamic probability, relation between entropy and thermodynamic probability. Specific heat capacity of solids, Bose Einstein statistics and its distribution function, Planck distribution function and radiation formula, Fermi Dirac statistics and its distribution function.

33. **ELECTRONICS and CIRCUIT ANALYSIS:** Four terminal networks : current voltage conventions, open, close and hybrid parameters of any four terminal network, Input, output and mutual independence for an active four terminal network. Various circuits theorems: Superposition, Thevenin, Norton, reciprocity, maximum power transfer Theorems.

Rectifiers- Half wave, full wave and Bridge rectifier, calculation of ripple factor, efficiency and regulation. Filters, Series inductor shunts capacitor, L section and π section filters. Voltage regulation and voltage stabilization by Zener diode.

Analysis of transistor amplifiers using hybrid parameters and its gain frequency response. basic idea of R-C coupled amplifiers.

Transistor biasing - stability factors, various types of bias circuits for thermal bias stability. Amplifier with Feed back : positive and negative feed back. Voltage and current feed back circuits. Advantages of negative feed back.

Oscillators : Criteria for self excited and self sustained oscillators circuit requirement for build-up of oscillation. Basic transistor oscillator circuit and its analysis; colpitts and Hartley oscillators. R-C Oscillators.

Junction Field effect transistor (JFET), circuit symbols, biasing and volt-Ampere relations.

34. **OPTICS:** Interference of a light, coherence requirements of the sources, optical path retardations, lateral shift of fringes, thin films, Newton's ring, Michelson interferometer, Fabry Perot interferometer and etalon. Fresnel diffraction: Half periods zones, circular aperture, Circular disc, straight edge, Fraunhofer diffraction: double slit, n slit, Plane diffraction grating, reflection grating, concave grating.

Lasers and Holography : Spontaneous and stimulated emission, density of states, Einstein's A and B coefficients, Energy density of radiation as a result of stimulated emission and absorption, Condition for amplification, Population inversion, Methods of optical pumping, Energy level schemes of He-Ne and Ruby lasers, working of a laser source, Special features of a laser source and their origin.

35. **QUANTUM MECHANICS AND SPECTROSCOPY:** Failure of classical Physics, Uncertainty principle and its consequences, Application of uncertainty principle.

Schrodinger equation – time dependent and time independent form, Physical significance of the wave function, probability current density, operators in quantum mechanics, Expectation values of dynamical variables, postulates of quantum mechanics, eigen function and eigen value, degeneracy, commutation relations. Ehrenfest theorem.

Time independent Schrodinger equation and stationary state solution, particle in one dimensional box, extension of results for three dimensional case and degeneracy of levels. Potential step and rectangular potential barrier coefficient, square well potential problem. Bound State Problems - Particle in one dimensional infinite potential well and finite depth potential well, simple harmonic oscillator (one dimensional), Schrodinger equation for a spherically symmetric potential, Orbital angular momentum and its quantisation, spherical harmonics, energy levels of H-atom.

Elementary Spectroscopy: Quantum features of one electron atoms, Frank-Hertz experiment, Stern and Gerlach experiment, Spin and Magnetic moment, Spin Orbit coupling and fine structure. Atoms in a magnetic field, Zeeman effect. molecular spectroscopy, Rigid rotator, diatomic molecules, Rotational spectra, Vibrational spectra, Vibrational Rotational spectra, Raman effect.

36. **NUCLEAR PHYSICS :** Quadrupole Moment and Nuclear Ellipticity, Nuclear Spin, Parity and Orbital Angular Momentum, Nuclear Mass and Mass Spectroscopy, Proton-Neutron Hypothesis, The Nuclear Potential, Mass Defect and Binding Energy, Nuclear Forces, The Liquid Drop Model.

Accelerators -Linear Accelerators, Cyclotron, Synchrocyclotron, Betatron: The

Electromagnetic Induction Accelerator, Electron Synchrotron, Proton Synchrotron.

Particle and Radiation Detectors : Ionisation Chamber, Region of Multiplicative Operation, Proportion Counter, Geiger-Muller Counter, Scintillation counter, Cloud Chamber.

37. **SOLID STATE PHYSICS:** Crystal Binding and Crystal Structure: Bravais Lattice, Miller Indices and Crystal Structure, X-ray Diffraction and Bragg's Law, Laue equation of X-ray diffraction.

Thermal Properties of the Solids : Various Theories of Lattice Specific Heat of Solids: The Einstein Model, Debye Model, Electronic Contribution of the internal Energy hence to the Specific Heat of Metals, Thermal Conductivity of the lattice. Band Theory of Solids : Wave Function in a Periodic Lattice and Bloch Theorem, Effective Mass, Momentum, Crystal Momentum .

Electrical Conductivity: Sommerfield Theory of Electrical Conductivity, Mathiessen's Rule, Thermal Conductivity and Wildemann-Franz's Law, The Hall Effect.

Superconductivity: Experimental Features of Superconductivity, The Isotope Effect, Special Features of Superconducting Materials, Flux Quantisation, BCS Theory of Superconductivity: Cooper Pairs, High Temperature Superconductors (Basic Ideas

38. **Mathematical Physics and Classical Mechanics :** Tensors, Matrices, Fourier and Laplace transforms. Bessel and Legendre functions. String formula, basic group theory. D'Alembert's Principle, Lagrangian and Hamiltonian formalism, canonical transformation, Poisson bracket and Poisson theorem, Hamiltonian Principle and Jacobi equation.
39. **Electricity and Magnetism :** Radiation from moving charge and radiation from dipole, concepts of wave guides, Retarded potentials, Lienard-Wiechart potential, Bremsstrahlung and Synchrotron radiation, reaction force of e.m.w.
40. **Thermodynamics and Statistical Physics:** Einstein Statistics, properties of ideal Bose and Fermi Gases, Bose-Einstein condensation. Gibbs' paradox, Liouville's theorem, Landau theory of phase transitions. Langevin theory, Fokker-Planck equation.
41. **Quantum Physics:** Elementary theory of scattering in a central potential, partial wave and phase-shift analysis, Identical particle and spin statistics, WKB Method and its applications.
42. **Electronics:** Clipping and clamping circuits of operational amplifiers and its applications, inverting and non-inverting amplifiers, adder, integrator differentiator, Half and Full adder circuits, Flip-Flops, counters and registers.
43. **Atomic, Molecular and Solid State Physics :** Quantum states of an electron in an atom,

hydrogen atom spectra, Pauli's Principle, Spin-Orbit interactions, Zeeman effect, Paschen-Back effect, Stark effect, LS and JJ coupling, Hyperfine structure.

Semiconductors statistics of pure and impure semi conductors, Electrical conductivity and its temperature dependence, Recombination mechanisms, Photo conductivity, NMR, ESR and Mossbauer effect.

44. **Nuclear and Particle Physics:** Nuclear shell model, Collective model, Interaction of charged particles and electromagnetic waves with matter. Meson theory of Nuclear force, Nuclear scatter theory: p-p and n-p. Breit- Wigner scattering formula, Fermi theory of β -decay, Gamov theory of alpha decay.


Deputy Secretary
Haryana Public Service Commission

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- Concept, scope and functions of educational psychology.
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- Emotional intelligence and its implication in teaching learning.

ii. Pedagogy and Teaching Learning Material (Instructional Strategies for Adolescent Learner)

- Communication skills and its use.
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iii. General

- General Awareness including Questions related to Haryana.
- General Mental Ability including Basic numeracy & data interpretation
- Logical Reasoning & Analytical Ability
- Decision making & problem solving


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REVISED SYLLABUS FOR WRITTEN EXAMINATION FOR PGT (COMMERCE)

BUSINESS STUDIES AND MANAGEMENT

- Introduction to Business– Concepts, characteristics, objectives. Classification of business as industry and commerce. Distinctive features of business- Business, profession and employment. Choice of Form of Organization. Large Scale and Small Scale Business-. Assistance by Government to Small Scale Sector.
- Form of Business Organization– Sole Proprietors, Joint Hindu Family, Partnership, Joint Stock Company and its formation, Cooperative organization.
- Business ownership– Private, public and Joint sector. Public Enterprises, Role-dynamics of Public Sector, Global Enterprises (Multinational Companies), Joint Ventures.
- Business Services – banking, insurance, transportation, warehousing, communication, Impact of Technology on Business Services.
- Trade: Internal Trade Retail and Wholesale trade, Emerging modes of business-franchisee, E-business and Outsourcing. International Business–Export-Import–Procedure and documentation, EPZ/SEZ. International Trade Institutions and Agreements–WTO, UNCTAD, World-Bank, IMF.
- Business Finance: Sources– owners and borrowed fund, Sources of raising finance, Equity and preference Shares, GDR, ADR, Debentures, Bonds – Retained Profit, Public Deposits, Loan from Financial Institutions and commercial banks, Credit-rating and rating agencies, Trade credit, Micro-credit.
- Social Responsibility of Business, Business Ethics, Environment protection.
- Management–concept, objectives, nature of management as Science, Art and Profession, levels, Principles of Management general and scientific.
- Business Environment– meaning, importance, dimensions, changing business environment–special reference to liberalization, privatization and globalization, Business- a Futuristic vision.
- Management Function– Planning, organizing, staffing, directing, controlling and coordination
- Business Finance: Financial Management–meaning, scope, role and objectives, financial planning, Capital structure, leverage, Fixed and working capital–meaning and factors affecting its requirements.
- Financial Market – Money Market-nature, instruments, Capital Market- Primary and secondary, Stock exchange, NSEI, OTCEI, Procedures, SEBI.
- Human Resource Management–meaning, importance, man-power estimation, Recruitment and selection, Training and development, Compensation, Performance Evaluation
- Marketing – meaning, functions and role, Levels of Marketing, Changing facets of marketing, Product-mix, Models of Marketing.
- Organizational Behaviors: Individual behaviors, Motivation–concepts and applications,

Personality perception, Learning and attitude, Leadership and its approaches, Communication, Group dynamics.

- Emerging Trends in Management – Business Process Reengineering, Total Quality Management, Quality Circles, Benchmarking, Strategic Management, Knowledge Management, Business Standardization and ISO.
- Consumer Protection– Meaning, importance, consumers' rights, Consumers' responsibilities, Consumer awareness and Legal redressal with special reference to consumer Protection Act, Role of consumer organization and NGOs.

FINANCIAL ACCOUNTING AND FINANCIAL STATEMENT ANALYSIS

- Accounting: Meaning, objectives, qualitative characteristics of Accounting information, Accounting Principles, Accounting concepts, Accounting standards, Cash and Accrual Basis of Accounting.
- Process of Accounting: Voucher, transaction, Accounting Equation, Rules of Debit and Credit, Book of original entry-Journal and Special Purpose Books, Ledger, posting from Journal and subsidiary books, Balancing of Accounts, Trial Balance and Rectification of Errors. Bank Reconciliation Statement.
- Accounting for depreciation, Provisions and Reserves, Bills of Exchange, Non-Profit Organization, Partnership Firms-Reconstitution of Partnership (Admission, Retirement, Death and Dissolution), Account of Incomplete Records, Consignment and Joint ventures.
- Accounting of Joint stock Companies: Share capital types of shares, accounting for issue, allotment forfeiture and re-issue of shares. Debentures –types, issue and method of redemption Final Accounts of Sole proprietor and Joint Stock Companies. Emerging trends of presentation of Final Accounts. Accounting for liquidation.
- Financial Statement Analysis: Meaning, significance, limitation. Tools for Financial Statement Analysis-comparative statements, common size statements, Trend analysis, accounting ratios.
- Fund Flow Statement and Cash Flow Statement: Meaning, objectives, preparation as per revised standard issued by ICAI.
- Cost Accounting- Nature, functions. Job costing, Process costing, Marginal costing, Cost-volume-profit relationship. Cost control and cost reduction techniques
- Computers in Accounting: Introduction to Computers and Accounting Information System, Application of Computers in Accounting, Automation of Accounting process, designing accounting reports, MIS reporting, data exchange with other information system. Readymade, customized and tailor made Accounting Systems.
- Accounting and Database Management System –meaning, concept of entity and relationship in an accounting system, Data Base Management System (DBMS) in accounting.
- Inflation accounting and Accounting for Human Resource of an Organization and Social Responsibility.

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Deputy Secretary
Haryana Public Service Commission

REVISED SYLLABUS FOR WRITTEN EXAMINATION FOR PGT (ENGLISH)

Topics	Syllabus
Reading Comprehension	Ability to comprehend, analyze and interpret unseen texts. Three/four unseen reading passages may be set.
Writing Ability	One out of two tasks such as a factual description of any event or incident, a report or a process. Writing one formal letter. Letter types include writing personal opinion /views/stand in an article/ debate/speech etc on a given socio-cultural issue—in a style /register suitable to the task set. Issues could relate to (a) environment (b) education (c) gender discrimination (d) economic disparity etc.
Grammar and Usage	Ability to apply the knowledge of syntax and grammatical items & use them accurately in the context provided. 1. Determiners 2. Tenses 3. Clauses 4. Modals 5. Voice 6. Determiners 7. Tenses 8. Transformations: (i) Direct – Indirect (ii) Active – Passive (iii) Negatives, Interrogatives (iv) Simple to compound and complex 9. Auxiliaries 10. Prepositions 11. Phrasal verbs and Idioms 12. Reading comprehension 13. Precis writing 14. Letter writing 15. Report Writing
Literature	Shakespeare's works. <ul style="list-style-type: none"> · Romantic period (e.g. Shelley, Wordsworth, Keats, Coleridge etc) · 19th and 20th Century American and English Literature (e.g. Robert Frost, Hemmingway, Whitman, Hawthorne, Emily Dickinson, Bernard Shaw, Arthur Miller etc.) · Modern Indian Writing in English (e.g. Anita Desai, Vikram Seth, Nissin Ezekiel, K N Daruwala, Ruskin Bond, R K Narayan, Mulk Raj Anand, Khushwant Singh etc)

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