// CIRCULAR //

Sub: Mock Test / Practice Test for Class XII (2013-14).

All the Heads of Government Schools of Directorate of Education are hereby informed that a Mock Test in the following subjects will be conducted for students of Class XII as per following schedule and syllabus. The test will be conducted separately for morning and evening shift schools. The test will be of duration of 1½ hours and the subject wise weightage shall be of 50% of the Annual Examination.

Further, class XII shall function as usual prior to the conduct of the test on all test days. During this time the difficulties of students should be tackled / discussed by the teacher.

The question papers in each subject shall be provided by the Examination Branch of the Directorate of Education at each Zonal Distribution Centre. All District DDEs are directed to depute one responsible Officer to collect sealed cartons of test Question Papers at all Zonal Distribution Centres between 7:30 a.m. to 8:00 a.m. as per Time Table. All EOs/DEOs are directed to conduct surprise visits to schools during the conduct of the test.

**DATE-SHEET FOR MOCK TEST 2013-2014**

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Date &amp; Day</th>
<th>Subject</th>
<th>Timing</th>
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<tbody>
<tr>
<td></td>
<td><strong>Date</strong></td>
<td><strong>Day</strong></td>
<td><strong>Morning</strong></td>
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<tr>
<td>1</td>
<td>13.12.2013</td>
<td>Friday</td>
<td>11:00 a.m. to</td>
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<td>(Friday)</td>
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<td>12:30 p.m.</td>
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<td>2</td>
<td>16.12.2013</td>
<td>Monday</td>
<td>11:00 a.m. to</td>
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<td>(Monday)</td>
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<td>12:30 p.m.</td>
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<td>3</td>
<td>17.12.2013</td>
<td>Tuesday</td>
<td>11:00 a.m. to</td>
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<td>(Tuesday)</td>
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<td>12:30 p.m.</td>
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<td>4</td>
<td>18.12.2013</td>
<td>Wednesday</td>
<td>11:00 a.m. to</td>
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<td>12:30 p.m.</td>
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<td>5</td>
<td>19.12.2013</td>
<td>Thursday</td>
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<td>12:30 p.m.</td>
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<td>6</td>
<td>21.12.2013</td>
<td>Saturday</td>
<td>11:00 a.m. to</td>
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<td>7</td>
<td>23.12.2013</td>
<td>Monday</td>
<td>11:00 a.m. to</td>
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<td>12:30 p.m.</td>
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<td>S.No.</td>
<td>Subject</td>
<td>Content</td>
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<td>1</td>
<td>Accountancy</td>
<td>a) Accounting for Partnership Firms - Fundamentals Partnership&lt;br&gt;Provisions of Indian Partnership Act, 1932 in the absence of partnership deed&lt;br&gt;b) Accounting for Partnership Firms - Reconstitution and Dissolution Change in the profit sharing ratio among the existing partners&lt;br&gt;Admission of a Partner&lt;br&gt;Retirement and death of a partner&lt;br&gt;Dissolution of partnership firms&lt;br&gt;c) Accounting for Share Capital&lt;br&gt;Accounting for Share Capital&lt;br&gt;d) Accounting for Debentures&lt;br&gt;Issue of Debentures&lt;br&gt;e) Analysis of Financial Statements&lt;br&gt;Tools for Financial Statement Analysis&lt;br&gt;Profitability Ratios&lt;br&gt;Activity Ratios&lt;br&gt;Solvency Ratios&lt;br&gt;f) Cash Flow Statement&lt;br&gt;Preparation of Cash Flow Statement</td>
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<td>2</td>
<td>Mathematics</td>
<td>1) Relation and Functions – Binary Operations, Types of Relations, Equivalence Relation.&lt;br&gt;2) Inverse Trigonometric Functions – Principal Value, Properties of Inverse Trigonometric Functions.&lt;br&gt;3) Matrices – Symmetric and skew-symmetric matrices, elementary transformation of matrix, invertible matrix.&lt;br&gt;4) Determinants – Properties of determinants, minors and co-factors, adjoint, and inverse of a matrix, application of determinants and matrices.&lt;br&gt;5) Continuity and Differentiability – Logarithmic differentiation, differentiation of inverse trigonometric functions, Mean Value Theorem.&lt;br&gt;6) Application of Derivatives – tangents and normals, increasing and decreasing functions.&lt;br&gt;7) Integrals – Methods of integration, integration by partial fraction, integration by parts, definite integral, integration as limit of sum.&lt;br&gt;8) Differential Equations – Order and degree of the differential equation, Methods of solving first order, first degree differential equations.&lt;br&gt;9) Vector Algebra – Types of vectors, product of two vectors.&lt;br&gt;10) Three Dimensional Geometry – Equation of a line in vector and cartesian form, Shortest distance, plane passing through the intersection of two given planes, distance of a point from a plane, equation of a plane passing through three non-collinear points, angle between a line and a plane.&lt;br&gt;11) Linear Programming – different types of linear programming problems.&lt;br&gt;12) Probability – Bayes' theorem, independent events, Random Variables and its probability distribution.</td>
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<td>3</td>
<td>Chemistry</td>
<td>Unit I: Solid State – Calculation of density of unit cell, point defects, Semiconductors, n &amp; p type semiconductors.&lt;br&gt;Unit II: Solutions – Colligative properties – relative lowering of vapour pressure, Raoults law, elevation of boiling point, depression of freezing point, osmotic pressure, determination of molecular masses using colligative properties. Abnormal molecular mass, van’t Hoff factor.&lt;br&gt;Unit III: Electrochemistry – Specific and molar conductivity, variations of conductivity with concentration, Kohlrausch's Law, electrolysis, Galvanic cells, EMF of a cell, Nernst equation and its application to chemical cells, Relation between Gibbs energy change and emf of a cell, fuel cells corrosion.&lt;br&gt;Unit IV: Chemical Kinetics – factors affecting rate of reaction, rate law and specific rate constant, integrated rate equations and half life (only for zero and first order reactions), activation energy, Arrhenius equation.&lt;br&gt;Unit V: Surface Chemistry – Colloidal state distinction between true solutions, colloids and suspension, lyophilic, lyophobic multimolecular and macromolecular colloids; properties of colloids; Tyndall effect, Brownian</td>
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movement, electrophoresis, coagulation.

Unit VI: General Principles and Processes of Isolation of Elements -
Principles and methods of extraction – concentration, oxidation, reduction- electrolytic method and refining.

Unit VII: P-Block Elements –
Group 15 Elements: General introduction, electronic configuration, trends in physical and chemical properties; Phosphorus- compounds of phosphorus: preparation and properties of phosphine. Oxocids (elementary idea only)
Group 16 Elements: General introduction, electronic configuration, trends in physical and chemical properties; Dioxide: Oxocids of sulphur (Structures only)
Group 17 elements: General introduction, electronic configuration, trends in physical and chemical properties; Preparation, properties and interhalogen compounds, oxocids of halogens (structures only)
Group 18 elements: General introduction, electronic configuration, trends in physical and chemical properties.

Unit VIII: d and f Block Elements –
General introduction, electronic configuration, characteristics of transition metals, general trends in properties of the first row transition metals- metallic character, oxidation states, colour, catalytic property, magnetic properties, alloy formation preparation and properties of \(\mathrm{K}_2\mathrm{Cr}_2\mathrm{O}_7\) and \(\mathrm{KMnO}_4\).

Lanthanoids- Electronic configuration, oxidation states, and lanthanoid contraction and its consequences.

Actinoids- Electronic configuration oxidation states and comparison with lanthanoids.

Unit IX: Coordination Compounds –
IUPAC nomenclature of mononuclear coordination compounds. VBT, and CFT: structure, importance of coordination compounds (in qualitative inclusion, extraction of metals and biological system).

Unit X: Haloalkanes and Haloarenes -
Haloalkanes: Nomenclature, nature of C-X bond, physical and chemical properties, mechanism of substitution reactions.
Haloarenes: Nature of C-X bond, substitution reactions (Directive influence of halogen in mono substituted compounds only)

Unit XI: Alcohols, Phenols and Ethers –
Alcohols: Nomenclature, methods of preparation, physical and chemical properties (of primary alcohols only), identification of primary, secondary and tertiary alcohols. Mechanism of dehydration.
Phenols: Nomenclature, methods of preparation, physical and chemical properties, acidic nature of phenol, electrophilic substitution reactions.
Ethers: Nomenclature, methods of preparation, physical and chemical properties.

Unit XII: Aldehydes, Ketones and Carboxylic Acids –
Aldehydes and Ketones: Nomenclature, nature of carbonyl group, methods of preparation, physical and chemical properties, mechanism of nucleophilic addition, reactivity of alpha hydrogen in aldehydes.
Carboxylic Acids: Nomenclature, acidic nature, methods of preparation, physical and chemical properties.

Unit XIII: Organic compounds containing Nitrogen –
Amines: Nomenclature, methods of preparation, physical and chemical properties, identification of primary, secondary and tertiary amines.
Diazonium salts: Preparation, chemical reactions and importance in synthetic organic chemistry.

Unit XIV: Biomolecules –
Proteins: Elementary idea of amino acids, peptide bond, polypeptides, proteins.
Nucleic Acids: DNA and RNA.

Unit XV: Polymers –
Classification – (addition and condensation ), copolymerization, some important polymers: natural and synthetic like polythene, nylon polyesters, bakelite, rubber.

Unit XVI: Chemistry in Everyday life –
Chemicals in medicines - analgesics, antiseptics, disinfectants, antifertility drugs, antibiotics, antacids.
Chemicals in food - preservatives, elementary idea of antioxidants.
Cleansing agents - soaps and detergents. Cleansing action.
| 4 | Business Studies | 1) Introduction to Management  
2) Principles of Management  
3) Planning  
4) Organizing  
5) Staffing  
6) Directing  
7) Controlling |
|---|---|---|
| 5 | Biology | a) Sexual Reproduction in Flowering Plants  
b) Human Reproduction  
c) Molecular Basis of Inheritance  
d) Human Health and Diseases  
e) Biotechnology - Principles and Processes  
f) Ecosystem |
| 6 | Economics | Part-A (Micro economics)  
Unit-I: Introduction  
Unit-II: Consumer Equilibrium and demand  
Unit-III: Producer Behaviour and Supply  
Part-B (Macro economics)  
Unit-VI: National Income and Related Aggregates  
Unit-VII: Money and Banking  
Unit-VIII: Determination of Income and Employment |
| 7 | English Core | Note making  
Notice, Advertisement (Situation vacant/wanted, sale/purchase, lost/found)  
Letter writing (Letter to Editor, Complaint letter, letter to school authority)  
Poem:  
A Thing of Beauty, Aunt Jennifer’s Tigers  
Flamengo: Indigo Going Places  
Vistas: On the face Evans tries an O Level. Memories. Novel; Chapter 9-15 |
| 8 | Political Science | PART A : Contemporary World Politics  
I) U.S. Dominance Hegemony in World Politics  
II) Alternative Centre of Power  
III) International Organisations  
IV) Politics of Planned Development  
V) India’s External Relations  
VI) Regional Aspiration  
VII) Challenge to and Restoration of the Congress System |
| 9 | Geography | Part A – Fundamentals of Human Geography  
Chapter 1 – Human Geography : Nature and scope  
Chapter 4 – Human development  
Chapter 5 – Primary Activities  
Chapter 6 – Secondary Activities  
Chapter 7 – Tertiary-------  
Chapter 8 – Transport & Communication  
Chapter 9 – International Trade  
BOOK II - India : People and Economy  
Unit-I Lesson 2 – Migration  
Unit-II Lesson 4 – Human Settlement  
Unit-III Lesson 8 – Manufacturing Industries |
| 10 | Physics | a) Coulomb's Law And Numericals.  
Electrical field lines.  
Electric dipole, electric field due to dipole. Field intensity at axial and equatorial point.  
Gauss law and its application to find field due to uniformly charged thin spherical shell (field inside and outside).  
Capacitance of a parallel plate Capacitor energy stored in a capacitor.  
Vande Graaff Generator.  
b) Ohm’s law, electrical resistance, V = I characteristics, Wheat stone bridge, meter bridge. Potentiometer  
c) Biot savart law and its application magnetic field due to a circular current loop at axial point.  
Torque experienced by a current loop in a uniform magnetic field. moving coil galvanometer |
Force between two parallel current carrying conductors, definition of ampere.
Cyclotron
Earth's Magnetic field and magnetic elements.
Paramagnetic diamagnetic, ferromagnetic substances with examples, hysteresis.

\textbf{d)} Numerical based on $I_w$ and $I_{rms}$

- LCR series circuit, resonance frequency, power factor impedance.

Transformer

\textbf{e)} Electromagnetic waves and their characteristics, uses of (radio waves, microwaves, infrared, ultraviolet rays, X-rays)

- Refraction through spherical surfaces.
- Lens maker's formula.
- Numerical based on focal length power of lens.
- Dispersion of light through a prism.
- Labeled diagram of telescope (i) normal adjustment (ii) near point.
- Microscope and expression for magnifying power.
- Young's double slit experiment and expression for fringe width, coherent sources and sustained interference of light. Diffraction due to a single slit, width of central maxima.
- Plane polarized light, Brewster's law, uses of plane polarized light and polaroids.

\textbf{f)} Einstein's photoelectric equation Davisson Germer experiment.

- Bohr Model, energy levels, Hydrogen spectrum
- Radioactivity, alpha, beta and gamma particles/rays and their properties, radioactive decay law.
- Binding energy per nucleon and its variation with mass number.

\textbf{g)} Semiconductors junction diode, I – V characteristics in forward biasing and reverse biasing, diode as rectifier.

- Zener diode as voltage regulator, transistor as a switch and an amplifier, (CE configuration)
- Logic gates (OR, AND, NOT, NAND, AND NOR)

\textbf{h)} Elements of communication system (block diagram), sky and space wave propagation. Need for modulation, production and detection of an amplitude modulated wave.

\textbf{(DR. SUNITA S. KAUSHIK)}
Addl. DE (Exam)

\textbf{All Heads of Schools through Del E}

\textbf{Copy to:}
1. P.S. to Secretary (Education).
2. P.S. to Director (Education).
3. All District DDEs/EOs/DEOs through Del E.
4. ADE (IT) to place it on website of Dte. of Education.
5. Guard File.

\textbf{(SAVITA YADAV)}
ADE (Exam)