



পশ্চিমবঙ্গ উচ্চ মাধ্যমিক শিক্ষা সংসদ  
বিদ্যাসাগর ভবন

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কলকাতা-৭০০০৯১

নং- L/SECY/31/2021

তারিখ: 02/11/2021

বিজ্ঞপ্তি

নির্দেশানুযায়ী সকল বিদ্যায়তনের প্রধানদের জানানো যাচ্ছে যে ২০২২ সালের উচ্চমাধ্যমিকের ব্যবহারিক (Practical) পরীক্ষা আগামী ১৫ ফেব্রুয়ারি ২০২২ থেকে ০৪ মার্চ ২০২২ এর মধ্যে বিদ্যায়তনগুলি নিজ নিজ দায়িত্বে ও ব্যবস্থাপনায় সংসদ প্রেরিত তালিকাভুক্ত বিষয় গুলি থেকে Topic নির্বাচন করে Practical পরীক্ষা সম্পূর্ণ করবেন এবং পরীক্ষান্তে ১৫ মার্চ, ২০২২ তারিখের মধ্যে Practical এর নম্বর ও উত্তরপত্র সংসদে জমা দেবেন। Practical পরীক্ষার বিষয়ভিত্তিক Chapter (Topic) এর তালিকা বিদ্যালয়গুলির অবগতির জন্য নীচে দেওয়া হলো। একাদশ শ্রেণীর বার্ষিক পরীক্ষার ব্যবহারিক পরীক্ষার সূচি পরবর্তী সময়ে জানানো হবে।

সংশ্লিষ্ট সকলের সহযোগিতার আবেদন জানাচ্ছি।

(তাপস কুমার মুখার্জি)

সেক্রেটারি-ইন-চার্জ

পঃবঃউঃমাঃ শিক্ষা সংসদ

## H.S Examination Practical Topics

<b>1. Geography</b>			
UNIT (ALLOTTED MARKS)	SUB-UNIT	PROPOSED TOPICS	PROPOSED QUESTION STRUCTURE
1. Interpretation of Topographical Maps: (Plateau Region) [8 marks]	<ul style="list-style-type: none"> <li>✓ Location, Topography with the help of contours</li> <li>✓ (Draw of Cross section to show the topographical features like valley spur, escarpment, peak (hill top) etc.)</li> <li>✓ Drainage System, Natural Vegetation, Transport and communication and settlement.</li> <li>✓ Co - relation with different physical and cultural elements with the help of Transect Chart.</li> </ul>	<ul style="list-style-type: none"> <li>• Draw of Cross section to show the topographical features</li> <li>• Co - relation with different physical and cultural elements with the help of Transect Chart.</li> <li>• Symbols of Topographical Maps</li> </ul>	<ul style="list-style-type: none"> <li>• Draw of Cross section to show the topographical features [3]</li> <li>• Co - relation between any two elements with the help of Transect Chart. [4]</li> <li>• Symbol of Topographical Maps [1]</li> </ul>
2. Map Projection [ 6 marks ]	<ul style="list-style-type: none"> <li>✓ Cylindrical Equal Area Projection</li> <li>✓ Simple Conical with one standard parallel</li> </ul>	<ul style="list-style-type: none"> <li>• Cylindrical Equal Area Projection</li> </ul>	<ul style="list-style-type: none"> <li>• Calculation and drawing of a projection [5]</li> <li>• VSAQ [1]</li> </ul>
3. Statistics [6 marks]	<ul style="list-style-type: none"> <li>✓ Concept of data: Primary &amp; Secondary Grouped &amp; ungrouped</li> <li>✓ Tabulation &amp; classification of data</li> <li>✓ Frequency Distribution, Histogram Frequency Polygon &amp; Ogive</li> <li>✓ Measures of Central Tendency: Mean Median, Mode (calculation &amp; computation)</li> <li>✓ Standard Deviation &amp; coefficient of variation</li> </ul>	<ul style="list-style-type: none"> <li>• Concept of data: Primary &amp; Secondary Grouped &amp; ungrouped</li> <li>• Tabulation &amp; classification of data</li> <li>• Frequency Distribution, Histogram Frequency Polygon &amp; Ogive</li> </ul>	<ul style="list-style-type: none"> <li>• Prepare a proper table and drawing of any one item from frequency distribution [5]</li> <li>• VSAQ [1]</li> </ul>
4. Project Work [5 marks]	<ul style="list-style-type: none"> <li>✓ People's Biodiversity Register</li> <li>✓ Earthquake &amp; Landslides - Himalayan Region</li> <li>✓ Volcanic Eruption - Japan</li> <li>✓ Drought - Bankura, Purulia</li> <li>✓ Flood - Sunderban</li> </ul>	<ul style="list-style-type: none"> <li>• Any one</li> </ul>	<ul style="list-style-type: none"> <li>• project Report [3]</li> <li>• Viva-voce [2]</li> </ul>
5. Laboratory Note Book [5]	-----	<ul style="list-style-type: none"> <li>• Laboratory Note Book</li> </ul> <p style="text-align: center;"><b>[PREPARED ON THE BASIS OF PROPOSED TOPICS]</b></p>	<ul style="list-style-type: none"> <li>• Laboratory Note Book [3]</li> <li>• Viva-voce [2]</li> </ul>

## H.S Examination Practical Topics

### 2. Physics

#### PHYSICS PRACTICAL

#### CLASS- XII

#### Evaluation Scheme:-

- 1) Two experiments one from each Section 8+8=16
- 2) Practical record(experiments) --04
- 3) Project with viva - 05
- 4) Viva on experiment 05

Total=30

#### Section A

- 1) To find resistance of a given wire using meter bridge and hence determine the specific resistance of its materials.
- 2) To determine resistance per cm of a given wire by plotting a graph of potential difference versus current.
- 3) To verify the laws of combination series/parallel of resistances using a meter bridge.
- 4) To determine resistance of a galvanometer by half-deflection method and to find its figure of merit.

#### Section-B

- 1) To find the focal length of a convex lens by plotting graphs between u and v between  $1/u$  and  $1/v$ .
- 2) To determine angle of incidence and angle of deviation of a prism.
- 3) To determine refractive index of a glass slab using a travelling microscope.
- 4) To draw the I-V characteristic curve of a p-n junction in forward bias and reverse bias.
- 5) To draw the characteristics curve of a Zener diode and to determine its reverse break down voltage.

### 3. Chemistry

1. Volumetric Analysis (Marks 10)
  2. Salt Analysis (Marks 08)
  3. Content based Experiments (Marks 06)
  4. Class record or /Project Work and Viva-voce (Marks 06)
- A. Chemical Kinetics (Marks 04)
- a) Effect of Concentration and Temperature on the rate of reaction between Sodium Thiosulphate and Hydrochloric Acid
- OR
- b) Study of reaction rates of the reaction of Iodide ion with Hydrogen Peroxide at room temperature using different concentration of iodide ions.
- OR
- B. Electrochemistry (Marks 04)
- Variation of Cell Potential in  $Zn | Zn^{2+} || Cu^{2+} | Cu$  with change in concentration of Electrolytes [ $CuSO_4$  Or  $ZnSO_4$ ] at room temperature.
- C. Tests for functional groups present in organic compounds (Any One) (Marks 02)
- Alcoholic(-OH), Aldehydic (-CHO), Ketonic ( $>C=O$ ), Carboxylic (-COOH) groups.
- D. Determination of concentration/ Molarities of  $KMnO_4$  solution by titrating it against a standard solution of (Any one experiment only) (Marks 10)
- i) Oxalic Acid
  - ii) Ferrous Ammonium Sulphate

### 4. Home Management & Family Resource Management

#### ১। চার্ট প্রস্তুতি:

(ক) বাড়ির বাইরে কর্মরতা এবং বাড়ির বাইরে কর্মরতা নন এরকম গৃহিনীর সারাদিনের কর্মসূচি।

(খ) শিক্ষার্থীর দৈনিক ও সাপ্তাহিক সময়সারণি।

২। অ্যাকাউন্ট খোলার ফর্ম (সেভিংস অ্যাকাউন্ট, কারেন্ট অ্যাকাউন্ট, রেকারিং ডিপোজিট), পে-ইন-স্লিপ সংগ্রহ এবং পূরণ করা শেখা।

৩। বিভিন্ন আয়ের শ্রেণিভুক্ত পরিবারের বাজেট প্রস্তুতি।

৪। পরীক্ষাগারে পাঠের সামগ্রী প্রস্তুতি – বর্ণমালার বই, সংখ্যা গণনার বই, ছড়ার বই (যে কোন একটি)।

৫। বস্ত্র থেকে দাগ অপসারণ।

৬। বসার ঘর, খাবার ঘর, শোবার ঘর, স্নানাগার এবং রান্নাঘরের মেঝেতে আসবাবপত্রের বিন্যাস।

৭। বিভিন্ন প্রকার প্রস্তুত খাদ্যের লেবেল সংগ্রহ করে বিশ্লেষণ করো।

#### 1. Chart Preparation:

## H.S Examination Practical Topics

- i) Activities carried out in a day by a working and non-working home maker.
- ii) To prepare a daily and weekly time schedule for self.
2. To collect account opening forms (Savings, Current, Recurring) and pay-in-slips and to learn filling up process.
3. To prepare family budget of different income group.
4. Preparing reading materials: alphabet books, counting books, nursery rhyme books (any one) in the laboratory.
5. Removal of stains from fabrics.
6. Making furniture/floor layout for living room, dining room, bedroom, bathroom and kitchen.
7. Collect and analyze labels of various food products.

### 5. Biological Science

#### I) List of Experiments are to be done:

1. Study pollen germination on a slide.
2. Study of plant population density by quadrat method.
3. Study of plant population frequency by quadrat method.
4. Prepare a temporary mount of onion root tip to study mitosis.
5. To study the effect of the different temperatures and three different PH on the activity of salivary amylase on starch.

#### II) Spottings are to be done:

1. Flowers adapted to pollination by different agencies (wind, insect) - any one type with two features.
2. Meiosis in onion bud through permanent slides.
3. Two plants found in xerophytic conditions - comment upon their morphological adaptations.
4. Plant found in aquatic conditions - comment upon their morphological adaptations.
5. Identification of stages of gamets development i.e. T.S. of testis and ovary through permanent slides (from any mammal) any one.
6. T.S. of blastula through permanent slides.
7. Identification of common disease causing organisms like Ascaris, Entamoeba, Plasmodium, ringworm through permanent slide or specimens. Comment on the symptoms of diseases that they cause - any one.
8. Animals found in aquatic conditions. Comment upon their morphological adaptations (any one animal)

## H.S Examination Practical Topics

### 6. Nutrition

- Detection of carbohydrate , protein ( albumin ) and fat in food.
- Preparation of nutritious snacks for school tiffin based on locally available food
- Prepare a day's diet for an average adult woman , allowances for pregnant and nursing mother

### 7. Computer Science

#### Discarded Topics in Computer Science Practical

- SQL- Database Management System
- C Programming – Command Line , Argument , File operations , I/O File Handling ,2D Array

### 8. Computer Application

Sl.No.	Section	Unit	Topic may cover	Marks	Total
1.	Group-A	MS Excel	1. Difference Formula 2. Use of Functions 3. Graphs & Charts 4. Excel Sheet Creation	10	30
2.	Group-B	HTML	1. Creating HTML Pages 2. Use of Different Tabs 3. Order, Unordered List Tags. 4. Hyperlink Web pages 5. Image Insert Tag.	5	
3.	Group-C	Protect Lab Copy	As per revised syllabus in unavoidable situation. Hard Copy (Print Out or Handwrite)	10	
4.	Group-D	Viva voce	Question on Practical	5	



## H.S Examination Practical Topics

### 9. Health & Physical Education

#### Practical - 60 Marks

**GROUP - A : FORMAL ACTIVITIES MARCHING, BROTOCHARI AND CALLISTHENICS (ANY ONE) (10 MARKS)**

1. Marching :
2. Brotochari
3. Calisthenics :

**GROUP - B: ATHLETICS (ANY ONE EVENT) (10 Marks)**

**GROUP - C: YOGASANA /GYMNASTICS / TEAM GAME(Only individual skill test ) (ANY ONE ) (20 MARKS)**

**GROUP - D : ACTIVITY-BASED PROJECT REPORT (20 Marks)**

The students will be required to submit activity-based project report on Kanyashree or BMI & Physical Fitness as per format given in the Health & Physical Education book published by the West Bengal Council of Higher Secondary Education.

**Total Marks of the Project : 20 Marks**

### 10. Agronomy

1. Identification of different manures and fertilizers. Acquaintance with different methods of fertilizer application. Study of the effect of fertilizers and other agricultural chemicals on crop growth and yield.
2. Familiarity with different crop production operations (seedling raising, transplanting etc) in the important crops consistent to the theory course.
3. Identification of different farm weeds, important diseases, insect pests and their damages, handling of hand sprayer and duster.
4. Construction of manure pit. Raising of green manure crops for green manuring.
5. Acquaintance with the cultivation of important crops according to the theory course.
6. Students' practice of budding, inarching & Goote making.

### 11. Statistics

- Correlation and Regression
- Time Series
- Theoretical distributions

## H.S Examination Practical Topics

### 12. Psychology

- Leadership Potential by following sociometric method
- Personality assessment by KNPI or KIEI
- Measurement of health status by GHQ

### 13. Music

Practical –

Group A : 21 M

Group B : 12 M

Group C : 12 M

Viva Voce : 10 M

Group A :

1. Khayal-

Both Vilambit and Drut in Ektal and Trital respectively in anyone of the following Ragas- Kedar , Malkaus , Bagesri or Jaunpuri [ 8+6=14 M ]

2. Anyone Dhrupad with dwigun laya in the above mentioned Ragas [ 7 M ]

Group B :

Rabindra Sangeet [ 6 + 6 ]

a. Types – Kirtan , Bhanusingher padabali

b. Talas – Ektal , Teora , Kaharba , Ruparka

c. Paryas – Puja , Prem , Anusthanik

Group C :

Other types of music ( may use harmonium )

a. Atulprasadi or Nazrulgeeti [ 4 M ]

b. Any one Regional folk song or Kirtan ( in any tal ) [ 4 M ]

c. Songs of Jatra or Song of Salil Chowdhury [ 4 M ]

Viva Voce :

a. Notation Reading [ 4 M ]

b. Identification of Raga [ 3 M ]

c. Identification of Tala [ 3 M ]

### 14. Visual Arts

Group A :

Painting [ 20 M ]

Composition of a Painting depicting a street corner or a shop with at least three human figures using pencil , pen & ink , oil pastels , water colour or poster colour or mixed media on paper

Drawing [ 15 M ]

a. Drawing from architectures ( buildings , houses etc ) showing perspectives with soft pencil on paper

Or

b. Drawing from nature , landscapes , people , animals , birds etc with soft pencil on paper

Group B :

Sculptures [ 20 M ]

Bas relief composition with moulding and casting in plaster of paris

OR

Design/Creative Handicrafts

a. Decorative design for various motifs in colour for textile

Or

b. Painting pottery with poster colour