Name : _____

The Ideal New Star English School
Varanasi
Homework for Summer Holidays
Session : 2025-26
Class – XI (Mathematics & Biology)

Kids, the much awaited holidays are here and it's time to play and have fun!! We have planned some work for you to make the optimum use of your energy and give a vent to your creativity so that you continue learning during the holidays.

- ❖ Parents are requested to encourage their ward to do the homework independently.
- ❖ They can help the child if he/she needs help.
- ❖ Creativity and originality of the work will be appreciated.
- ❖ Complete the homework of each subject in a thin notebook, separate report file, stick file or scrapbook as per requirement of the subject and the activity.

Subject – English Core

Instruction:
- All answers must be written in a Separate File page.
- Decorate the cover page creatively.
- Use diagrams, mind maps or drawings whenever possible.
- Be original and thoughtful in your responses.

Part A : Literature

1. Prose : "The Portraits of a Lady"
   - Task 1 : Write a character sketch of the grandmother in 150-200 words.
   - Task 2 : Identify and explain three important themes from the story.
   - Task 3 : Prepare a mindmap of the story showing Key Events in Sequence.
2. Poem : "A Photograph"
   - Task 1 : Write the Summery of the Poem in your own words. (100-150 words)
   - Task 2 : Pick out poetic devices used in the poem and give examples.
   - Task 3 : Reflect on the theme of loss and memory in a paragraph. (100 words)
3. Supplementary – "The Summer of the Beautiful White Horse."
   - Task 1 : Write a diary Entry from Aram's perspective the night after he saw the horse.
   - Task 2 : Describe the bond between Aram and Mourad in 100-150 words.
   - Task 3 : Do a comparative study of the values of the two boys and their uncle Khosrove.

Part – B : Writing Section

4. Notice Writing.
   Draft a notice informing students about an inter-house English debate Competition.
5. Poster Making
   Create a poster on "Say No to Plastic" for display on your School Notice Board.
6. Letter Writing
   Write a letter to the Editor of a National Newspaper. Expressing concern over rising causes of cyber bullying among teenagers.
7. Speech
   Prepare a speech on the topic "Role of Youth in Nation building." (150-200 words)

8. Write/Compose a short poem (8-10 lines) on the theme of Childhood memories.

Mathematics

1. Do exercise 1.3, 1.4 and 1.5 from NCERT textbook.
2. Define identity function, constant function, modulus function, signum function and greatest integer function and draw their graphs.
3. Do miscellaneous exercise on chapter 2 from NCERT textbook.

Biology

Section – A

1. Differentiate between species & genus with suitable examples.
2. What is the role of ICBN and ICZN?
3. Explain the term taxonomy and systematics.
4. Explain the role of fungi in the environment.
5. Describe the structure and significance of viruses.
6. Define lichens. What is their ecological significance?

Section – B

7. Research the contributions of Carolus Linnaeus in the field of Taxonomy and write a short Biography.
8. Prepare a short report on how classification helps in understanding biodiversity.
9. Prepare a report on Viruses vs Viroids on the basis of their structure. Mode of nutrition and reproduction.

CROSSWORDS PUZZLE

ACROSS
1. The branch of science dealing with classification.
2. Group of individuals capable of interbreeding.
3. The kingdom that includes Bacteria.
4. Binomial nomenclature was proposed by this scientist.
5. Bacteria that live in extreme environments.

DOWN
6. The basic unit of classification.
7. The kingdom that includes unicellular eukaryotes.
8. A group of organisms with secular characteristics.
9. Lichens are a symbiotic association between algae and ……………. .
10. Protein coat of a virus.

Concept – Based Questions
1. Explain how the five – kingdom classification by Whittaker is more advanced than the previous systems.
2. Describe the unique features of fungi that differentiate them from plants.
3. How do slime moulds exhibit characteristics of both animals and fungi?
4. Why are viruses not placed in any of the five kingdoms? Give reasons based on their structure and reproduction.
5. Explain the role of Cyanobacteria in nitrogen fixation. How do they benefit agriculture.

Physics

Chapters Covered: Units and Measurement, Error Analysis, Motion in a Straight Line

Instructions: Solve all the questions in your Physics notebook. Show all calculations and reasoning clearly.

Units and Measurement

1. The radius of a circle is measured as (7.0 ± 0.2) cm. Calculate the percentage error in the area of the circle.

2. Explain how dimensional analysis can be used to check the correctness of a physical equation. Verify the correctness of the equation $s = ut + \frac{1}{2}at^2$ using dimensional analysis.

3. Convert a speed of 90 km/h into m/s and express it in SI units using scientific notation.

4. The time period T of a simple pendulum is given by $T = 2\pi\sqrt{(l/g)}$. If the measured length is $l = 100.0 \pm 0.2$ cm and $g = 9.8 \pm 0.1$ m/s², calculate the maximum percentage error in the time period.

5. Using dimensional analysis, derive a formula for the escape velocity ve of a planet in terms of its mass M and radius R. Escape velocity depends on universal gravitational constant G, mass of earth (M) and radius of earth (R).

Error Analysis

6. A physical quantity Q is given by $Q = (A^2B)/(C^3)$. If the percentage errors in A, B, and C are 2%, 1%, and 3% respectively, calculate the percentage error in Q.

7. Two measurements of length are 1.50 ± 0.01 m and 2.00 ± 0.02 m. Find the error in their sum and their product.

8. A student plots a graph of distance vs. time for an object in uniform motion. Explain how the slope and uncertainty in slope can be used to analyze the error in velocity measurement.

9. Explain the difference between systematic error and random error with examples. How can each type be minimized?

10. The mass of an object is measured as 10.2 ± 0.1 kg and its volume as 1.8 ± 0.02 m³. Calculate the density and its absolute error.

Motion in a Straight Line

11. An object starts from rest and accelerates uniformly at 2 m/s². Find the distance covered in 5 seconds.

12. Differentiate between average speed and average velocity. A car travels 60 km north and then 40 km south in 2 hours. Calculate both average speed and average velocity.

13. A ball is thrown vertically upward with a speed of 20 m/s. Calculate the time to reach the highest point, the maximum height, and the total time of flight. (Take g = 9.8 m/s²)

14. Sketch a position-time graph for: (a) An object at rest, (b) Uniform motion, (c) Uniformly accelerated motion. Explain the shape of each.

15. A train accelerates from rest at 1 m/s² for 1 minute. Then it travels at constant speed for 2 minutes and decelerates at 2 m/s² until it stops. Calculate: (a) Maximum speed attained, (b) Total distance covered, (c) Total time taken.

Chemistry

1. Define mole and molar mass. Give an example for each.

2. State the law of conservation of mass with a suitable example.

3. What is limiting reagent? Give an example.

4. Calculate the number of molecules in 4.4 g of CO_2.

5. What is empirical formula and molecular formula? How are they related? A compound has 26.6 % K, 35.3% Cr, 38.1% O. Find the empirical formula.

6. Express 0.000000123 in scientific notation.

7. Calculate the molar mass of :
   (a) H_2SO_4 (b) $Ca(OH)_2$ (c) C_2H_6O

8. How many moles are present in 18 g of water.

9. A sample contains 11.2 g of iron. Calculate the number of moles and atoms in it.
10. Explain Rutherford's model of atom. Write the drawbacks of Rutherford's model of atom.
11. Convert 5 Jules in erg.
12. Write the electronic configuration of elements from atomic number 1 to atomic number 30 in shell, subshell and orbitals.
13. How many significant figures are there in
    (a)   0.00560   (b)   4.050   (c)   5000   (d) 6.02×10^{23}
14. Find the number of Electrons, protons and neutrons in $_{11}Na^{23}$, $_{8}O^{16}$, $_{19}K^{39}$.

Physical Education

Chapter: Changing Trends and Career in Physical Education

Instructions: Answer the following questions in detail. Use diagrams and real-life examples where applicable. Submit the completed homework in a neatly written format.

1. Explain the meaning and importance of Physical Education in the modern era.
2. Discuss the changing trends in Physical Education over the last two decades.
3. Describe the various career options available in the field of Physical Education.
4. What is the role of a Physical Education teacher? Mention the required qualifications and skills.
5. Differentiate between a coach and a trainer. Explain their roles in sports development.
6. Explain how Physical Education contributes to personality development.
7. List and explain any five emerging career options in sports and fitness industry.
8. Describe the scope of Physical Education in the field of rehabilitation.
9. What are the skills required to become a successful sports psychologist?
10. Prepare a chart showing traditional and modern career options in Physical Education.

Music

निर्देश : सभी विद्यार्थी अपनी उत्तर पुस्तिका में लिखकर दिखायेंगे।
1. संगीत की परिभाषा, नाद की परिभाषा, नाद के गुण की विशेषता।
2. स्वरों के पूर्ण नाम।
3. श्रुति की परिभाषा।
4. श्रुति स्वर में अंतर।
5. तीन ताल का वर्णन।
6. पं॰ विष्णु नारायण भातखण्डे का जीवन परिचय।

Hindi

1. 'नमक का दारोगा' कहानी के माध्यम से लेखक ने समाज के किस भावना को प्रस्तुत किया है, सचित्र वर्णन कीजिए।
2. 'किशोरों में बढ़ती स्क्रीन लत' इस विषय पर एक रचनात्मक लेख लिखिए।

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