

**CARMEL CONVENT HR.SEC. SCHOOL, KUNJWANI, JAMMU**

**Summer Vacations-Assignment -2022-23**

**Class-12<sup>th</sup> B**

**Medical / Non-Medical**

**ENGLISH**

**Q.1. As you all know our doctors, forces, government, and cleaners are fighting against corona virus. This poster is to support all those people who are corona warriors and fighting with corona virus for us. Draft a poster on Fight Coronavirus. We will paste the poster on the class board after vacations so it should be theme based and well designed.**

**Q.2. Design a poster on the topic –‘How CNG can be the best alternative to diesel and petrol.’  
[50 words]**

**Q.3. Write a debate on topic online vs. offline learning. We will have a debate competition after vacations.**

**Q.4. On behalf of the Principal of your school, draft an advertisement inviting applications for the post of PGT (English) teacher.**

**Q.5. Learn and revise all the syllabus of Unit Test I**

## MATHEMATICS

1. Evaluate  $\tan^{-1} (\tan \pi/3)$
2. Evaluate  $\cot^{-1} (\cot \pi/3)$
3. Evaluate  $\sin (\cot^{-1} \pi/3)$
4. Prove that  $\sec^2 (\tan^{-1}2) + \operatorname{cosec}^2 (\cot^{-1}3) = 15$
  
5. Find the value of the expression  $\sin [\cot^{-1}\{\cos (\tan^{-1}1)\}]$
  
6. Using matrix method, solve the following system of equations  
$$X - 2y = 10, 2x + y + 3z = 8, -2y + z = 7.$$
  
7. If A is matrix of order  $3 \times 3$  such that  $A(\operatorname{adj} A) = 5I$ , then find  $|\operatorname{adj} A|$
  
8. Differentiate  $\log (\sin x^4)$  w.r.t. x using chain rule.
  
9. Differentiate  $x^{\sin x} + (\sin x)^{\cos x}$  w.r.t. x
  
10. Prove that  $\tan^{-1} 2/11 + \tan^{-1} 7/24 = \tan^{-1} 1/2.$
  
11. Prove that  $\tan^{-1} 1/7 + \tan^{-1} 1/13 = \tan^{-1} 2/9.$
  
12. Find the principal value of  $\sin^{-1} (1/2)$
13. Find the domain of  $\cos^{-1} (2x - 1)$ .
14. Find the principal value of  $\tan^{-1} (1)$
15. Verify Lagrange's mean value theorem for  $f(x) = 3x^2 - 5x + 1$  defined in the interval  $[2,5]$

**Revise and practice :-**

**Chapter No.3 & 4**

**Revision Test will be held after summer vacation.**

## PHYSICS

- Study the chapter 'Electromagnetic Waves' in details.
- a) Sources of EM waves (b) Uses of EM Waves (c) Propagation of EM waves (d) Frequency and Wavelength range of EM waves (e) Displacement Current (f) Modified Ampere's Circuital law
  
- To study the Chapter 'Ray Optics' (Only those which we had covered already in class X), prepare your notes and solve the in text exercises.
  
- Prepare practical file and project report

Write all the experiments in practical notebook given below:

#### Section A

1. To determine resistance per cm of a given wire by plotting a graph of potential difference versus current.
2. To find resistance of a given wire using metre bridge and hence determine the resistivity (specific resistance) of its material.
3. To verify the laws of combination (series and parallel) of resistances using a metre bridge.
4. To compare the EMF of two given primary cells using potentiometer.
5. To determine the internal resistance of a given primary cell using potentiometer.
6. To determine resistance of a galvanometer by half-deflection method and to find its figure of merit.

#### Section B

1. To find the value of  $v$  for different values of  $u$  in case of a concave mirror and to find the focal length.

- 2. To find the focal length of a convex lens by plotting graphs between  $u$  and  $v$  or between  $1/u$  and  $1/v$ .**
- 3. To determine angle of minimum deviation for a given prism by plotting a graph between angle of incidence and the angle of deviation.**
- 4. To determine refractive index of a glass slab using a travelling microscope.**
- 5. To draw the I-V characteristic curve of a p-n junction in forward bias and reverse bias.**
- 6. To draw the characteristic curve of a Zener diode and to determine its reverse breakdown voltage.**
- 7. To study the characteristics of a common emitter npn (or pnp) transistor and to find out the values of current and voltage gains.**

**Amardeep Singh - [amardeep@carmeljammu.com](mailto:amardeep@carmeljammu.com)**

## **PHYSICAL EDUCATION**

- 1. Read and write the chapter no. 1 to 3 at home.**
- 2. Draw any one game of your choice with rules and regulations in your notebook.**
- 3. Read chapter no.6 yoga and importance of yoga in daily life.**

4. Play at home, atleast 30 minutes daily which is important for health.

## **COMPUTER SCIENCE**

Prepare PowerPoint for below given topics:

### **Networking and its advantages**

1. Types of Networks: PAN, LAN, MAN, WAN
2. Transmission Media: Twisted pair cable, Coaxial cable, Optical fiber, Infra-Red, Satellite transmission.
3. Network Topologies: Bus, Star, Ring
4. Modem
5. Cyber safety and security

### **Cyber Bullying:**

1. Preventive Measures
2. Computer Safety and Security
3. Internal Safety and Ethics
4. Safe Social Networking
5. Safe Email Practices
6. Dos and Don'ts for Cyber Safety

## **CHEMISTRY**

Chapter :- Solution

1. Solution & its Types
2. Expression of concentration of solutions
3. Raoult's Law & Henry's Law
4. Colligative properties & determination of molecular mass using colligative property
5. Azeotropes & its types

## **Chapter :- Haloalkanes & Haloarenes**

- 1. Preparation of Haloalkanes & haloarenes**
- 2. Chemical Properties of RX/ ArX**
- 3. Naming reactions:- Wurtz reaction , Finkelstein reaction , Swartz reaction, Darzen Procedure, Friedel Craft reaction of Haloarenes**

### **NOTE**

- **For UNIT-Test -01 ( Solid state only )**
- **Maintain record of Practical & Project file as given in Board syllabus**

## **ENVIRONMENTAL SCIENCE(EVS)**

**Q: List all the wastes that you generate at home, school or during your trip to other places; could you very easily reduce? Which would be difficult or rather impossible to reduce?**

**Q: a) A decade back, the enormous vehicular traffic in Delhi had made Delhi rank 4<sup>th</sup> among most polluted cities of the world. Two measures taken by the Delhi government brought marked improvement in air quality by 2005. What are these two measures and how did they reduce air pollution?**

**b) What is the norm set by Euro-II for petrol and diesel vehicles?**

**Q: Public all over India is very much concerned about the deteriorating air quality in large parts of north India. Alarmed by this situation, the residents welfare association of your locality organized an awareness programme entitled “bury not burn”. They invited you being a biology student to participate.**

- a) How would you justify your arguments that promote burying and discourage burning?
- b) With the help of flow charts, one for each practice, depict the chain of events that follow.

**Q: Make a project on any one topic given below:**

**Waste Management/Wildlife conservation/Sewage treatment/Energy Conservation/Wetland Management.**

**Collect the data and record it in the given format:**

- A) Index
- B) Acknowledgement
- C) Introduction
- D) Theory(Refer books and internet for this)
- E) Questionnaire/ Case studies
- F) Experience
- G) Conclusion
- H) Bibliography

**Read the chapter - Soil Degradation**

**Revise the chapter - Air pollution and Water pollution**

## **BIOLOGY**

**Q1. Make a project file on the topic GMO(Genetically Modified Organisms).**

Collect the data and record it in the given format:

- I) Index
- J) Acknowledgement
- K) Introduction
- L) Theory(Refer books and internet for this)
- M) Questionnaire/ Case studies
- N) Experience
- O) Conclusion
- P) Bibliography

Q2. (a) Explain a monohybrid cross taking seed coat as a trait in *Pisum sativum*. Work out the cross upto F<sub>2</sub>-generation.

(b) State the laws of inheritance that can be derived from such a cross.

(c) How is the phenotypic ratio of F<sub>2</sub> generation different in a dihybrid cross?

Q3. Fertilization is essential for production of seed, but in some angiosperms seeds develop without fertilization.

(a) Give an example of an angiosperm that produces seeds without fertilization. Name the process

(b) Explain the two ways by which seeds develop without fertilization.

Q4. (a) A DNA segment has a total of 1000 nucleotides, out of which 240 of them are adenine containing nucleotides. How many pyrimidine bases this DNA segment possesses?

(Hint:  $A+G=C+T$ )

(b) Draw a diagrammatic sketch of a portion of DNA to support your answer.

Q5. Name the pollinating agents of flowers like maize, wheat, salvia and sunflower. Give characteristic features of these flowers.

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**NOTE:- All students have to prepare assignment of all subjects. All marks will be added to your external marks. Students must submit to concerned teacher after completion of summer vacations.**



