

Winter Vacation Assignments 2021 AD

Grade XI (Science)



1. Physics
2. Chemistry
3. Mathematics
4. Biology
5. Computer Science
6. Creative assignment

Past paper collections <http://www.khullakitab.com/grade-11/subjects/pastpapers>

2. Physics

Topic Covered so far!

Chapter 1: Unit and Dimensions

Chapter 2. Vector and Scalar

Chapter 3. Kinematics

Chapter 4. Dynamics (Law of motion)

<http://www.khullakitab.com/laws-of-motion/notes/physics/grade-11/462/notes>

- Using the method of Dimension, Prove centripetal force

$$F = \frac{mv^2}{r} \quad \text{where the symbols have as usual meaning.}$$

- Prove Time period $T = 2\pi\sqrt{\frac{m}{k}}$ where the symbols have as usual meaning.
- State Newton's Second law of motion? State and explain the conservation of momentum.
- prove the following a) $v=u + at$ b) $S= ut + 1/2 at^2$
c) $v^2 = u^2 + 2 a S$ using V-t graph
- State and Explain triangle law of vector addition?
- State and explain parallelogram law of vector addition?
- Show that the path of the projectile is parabolic in nature if it is thrown at an angle theta horizontal. Also, find the value of max. height and horizontal range.
- What is Frictional force? Verify the law of frictions?
- Prove the angle of friction is equal to angle of repose.

Numerical problem!

- A monkey is climbing up a tree with velocity 4 m/s and a horse is moving east with velocity 3 m/s. Find the relative velocity of the monkey with respect to the horse.
- Rain is falling vertically with a speed of 40 m/s. A woman rides a bicycle with a speed of 5m/s from West to east. Calculate the relative velocity of rain with respect to women. Also, Calculate at what angle she should hold the umbrella.

3. 2072 Set An airplane is flying with a velocity of 90.0 m/s at an angle of 23.0° above the horizontal. At that moment, when the plane is 114 m directly above a dog that is standing on level ground, a suitcase drops out of the luggage compartment. How far from the dog will the suitcase land?

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Please make sure these questions are there in your notebook!

If there are any questions or queries feel free to mail pandeylekhraj4447@gmail.com or contact +9779865055710.

3. Chemistry

Group 'A'

1. State Boyle's law. Show the graphical representation of Boyle's law.
2. What is Universal gas constant. Write its value for 1 mole at NTP.
3. Differentiate between real and ideal gas.
4. Why gases molecules do not settle at the bottom of the container?
5. Calculate the volume of oxygen that will diffuse in the same time as 60 ml of SO_2 .
6. Distinguish between isotropic and anisotropic substances.
7. Why do real gas deviate from the ideal behavior?
8. When capillary tube is insert in water then the water level fall in capillary tube but rise of mercury level takes place when insert in mercury. Why?
9. Define amphoteric oxide with example.
10. Write the chemical reaction for the lab. preparation of ammonia.
11. Anhydrous CaCl_2 , anhydrous P_2O_5 and conc. H_2SO_4 is not used to remove moisture from ammonia. Why?
12. Glycerol is more viscous than water. Why?
13. Give reason : a) evaporation takes place from the surface of liquid.
b) falling raindrops are spherical in shape.
14. differentiate between evaporation and boiling.
15. How is ozone depleted by CFCs. Explain with reaction.
16. Write the uses of isotopes of hydrogen.

Group 'B'

17. Explain the manufacture of ammonia from Haber's process.
18. Derive ideal gas equation.
19. Explain the Graham's law of diffusion.
20. Write the postulates of kinetic theory of gas.
21. Two vessels of capacity 1.5 litre and 2 litres contain hydrogen gas and oxygen gas respectively under a pressure of 750mm and 100mm respectively. The gases are mixed together in a 5 litre vessel. What will be the final pressure of mixture?
22. State and explain Charles' law. How does it lead to the concept of 'absolute zero'? How is this law made use of in the meteorological observations?
23. Balance the following redox reaction either from oxidation number method or ion electron method:
 - a) $\text{KMnO}_4 + \text{H}_2\text{SO}_4 + \text{FeSO}_4 \longrightarrow \text{K}_2\text{SO}_4 + \text{MnSO}_4 + \text{Fe}_2(\text{SO}_4)_3 + \text{H}_2\text{O}$
 - b) $\text{NaOH} + \text{Br}_2 \longrightarrow \text{NaBrO}_3 + \text{NaBr} + \text{H}_2\text{O}$
 - c) $\text{KI} + \text{H}_2\text{SO}_4 \longrightarrow \text{K}_2\text{SO}_4 + \text{I}_2 + \text{H}_2\text{S} + \text{H}_2\text{O}$

Feel free to contact ; lamananjiv029@gmail.com (9841159600)

4. Mathematics

Chapter Covered

- a. Set Theory
- b. Real number
- c. Logic
- d. Matrix
- e. polynomial equations

Please, make complete notes and solve the NEB past papers from these topics.

If there are any queries or confusions feel free to write a mail metarajj@gmail.com or contact +9779841762752.

5. Biology:(for BIO group)

Prepare a PowerPoint presentation report on:

Classification of animals of the following phyla (upto class) with examples- Porifera, coelenterata (Cnidaria), Platyhelminthes, Aschelminthes (Nemathelminthes), Annelida, Arthropoda, Mollusca, Echinodermata and Chordata.

(You may also include short video clips in your Power point presentation)

You can visit website: www.kullalab.com, www.kullakitab.com or Download NEB class 11 biology notes offline APPs. For more information.

Teacher Facilitator: Yogeeta Chetry chetryyogeeta25@gmail.com (9841132168)

6. Computer Science (for Physical group)

Solve these two NEB papers.

- ❖ https://meropaper.com/class-11-computer-science-question-paper-2074/?fbclid=IwAR31dR_iRInXtgd3939asjK-DaKIWtEbmSyOTq_YFmMMerCcZxs2YCEwz7g
- ❖ <https://www.dhanraj.com.np/2019/09/Computer-Science-Grade-11-XI-Question-Paper-2076-2019-Code-130B-NEB.html?fbclid=IwAR3letwbuz6lfPIYxrVBaD09QnGDQ2MbfFqlkjzQxS9sNX976T8wvTykDLE>

Feel free to contact avijitbhowmick22@gmail.com if there is any confusion.

6. Creative assignment

- ❖ *Prepare a 10 minutes speech regarding Scientific topics (may be from Physics, Chemistry, Biology, Computer Science or maths) that you are interested in. Introduce the topics , state it & explain the importance of that theory for mankind.*

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If there is confusion feel free to talk with GRF.

Dear students, please kindly upload your assignments in your respective subject's google classroom.

Wishing you once again “Merry Christmas and New Year 2021AD.”

7 *English Assignment*

Revise all the chapters from the Literature and write at least any three summary of any stories that you have read from the Literature in 300 words each.

Email: pranitagiri90@gmail.com



Lekhranj Pandey (GRF)