INDIAN SCHOOL SOHAR
XII-SCIENCE (2016-17)
Holiday Homework

English	• Read the prescribed novel – Silas Marner and the detailed study notes provided. • Complete the given worksheet. • Solve Examination Paper (given in BBC Assignment)
Mathematics	• Revision of Unit Test portion from Examplar book available on the website of Indian School Sohar
Physics	• Complete the Project Work as discussed in the class • Complete practical no. 6 & 7 in the Record book • Complete the worksheets marked in Exam Ideas
Chemistry	• Complete the worksheet on p-Block Elements • Prepare the Project report as discussed in the class
Biology	• Complete the worksheet on Molecular Basis of Inheritance • Complete the Investigatory Project as discussed in the class
Informatics Practices	Reference Book: Together with • Solve Examination Paper 2014(All India) • Solve Examination Paper 2015(All India)
Physical Education	• Prepare for I Term Examination • Complete practical no.1, 2 and 3 in the record book • Practice for physical fitness test and major game skill • Improve your handwriting as discussed in the class

Solve all worksheets and question papers in ruled sheets **Date of submission: 14 August, 2016**

INDIAN SCHOOL SOHAR

DEPARTMENT OF ENGLISH

Note: Please attempt the questions marked with (*).

Lesson 3-Deep Water

Answer the following questions in about 30 to 40 words.

1. Why the YMCA pool was considered safer when compared to Yakima River?
2. When did his aversion to water begin?
3. What was the misadventure that happened one day?
4. * What strategy did he remember as he went down the water?
5. What effect did the drowning in the YMCA pool have on Douglas?
6. Why did he decide to have an instructor to teach him swimming?
7. *What method did he adopt to overcome terror?

Answer the following questions in about 120 words.

1. *The childhood fear and the way he overcomes it brings about a deeper meaning to the readers. Bring out how the negative traits can be changed into positive traits with reference to the techniques used by Douglas?
2. The tenacity and determination on the part of Douglas helped him to shirk away the fear factor. Discuss.

Chapter4 -The Enemy

Answer the following questions in about 30 to 40 words.

1. *What did Dr. Sadao's father tell him showing the islands visible from seashore?
2. What was his father's chief concern?
3. *Why was Sadao not sent abroad with the troops?
4. Why didn't Dr. Sadao show his interest in Hana before knowing that she was a Japanese?
5. Why did Dr. Sadao hesitate to go to the American professor's house?
6. What did Dr. Sadao & his wife discover on the sea shore.
7. *Though a doctor, why did Dr. Sadao & his wife hesitate a moment to help the bleeding & seriously injured man?
8. What did they think would be the best & the kindest thing to do for the injured man?
9. Why was Sadao concerned that he was an American soldier?
10. What was the final decision taken by the doctor?
11. Why did they think of handing over the man to the police?
12. Why did Hanna hesitate to put the injured soldier on his deceased father in law's room?
13. Why did Dr Sadao decide to operate on the prisoner of war?
14. *"What was the reaction of the servants on seeing the prisoner of war? Can it be justified?
15. What thoughts came to Hanna's mind when she was washing the wounds of the soldier?
16. "This man" he thought, "there is no reason under heaven why he should live." What prompted Dr. Sadao to say this? What does he do after this?
17. What impression do you form of General Takima?
18. *What happened on the seventh day, after the doctor and his wife saved the wounded man?
19. What did General Takima tell Dr. Sadao when he heard about the prisoner war?
20. Why did the general assure Dr. Sadao that he would not be arrested?
21. What did general decide to do with enemy?
22. Why do you think Sadao could not sleep properly after his meeting with the General?

23. *Why did Sadao stop Hanna from going to the prisoner's room?
24. How did Sadao help the prisoner to escape?
25. What did Sadao reply when the prisoner thanked him for saving his life?
26. Why do you think Dr. Sadao was unable to kill the American?
27. *General Takima forgot what he had assured Dr. Sadao. What does it say about his character?
28. What impression do you form of the prisoner?
29. What are the two moral implications on which the whole story is built upon?

Answer the following questions in about 100 words.

1. Dr. Sadao proves himself to be a good human being. He rises above the demarcation made by man. Elucidate.
2. *The enemy brings out that human qualities are more important in lives than our social obligations.It is in fact the victory of humanity in the moment of crisis. Discuss.
3. Dr Sadao was a true patriot –discuss.
4. *Hanna proved to be a real support to Dr Sadao-explain
5. Justify the title TheEnemy.`

Lesson 5–Indigo

Answer the following questions in about 30 to 40 words:

1. *What was the positive quality about Rajkumar Shukla? How did he benefit from this quality?
2. What proves that Gandhiji was an unknown figure in Patna?
3. *Why were the government servants scared to be acquainted with a person like Gandhi ji?
4. What was the first instance of achieving freedom from fear by the peasant community?
5. *What made the lawyers shamefaced before Gandhiji?
6. Narrate how the civil disobedience became a triumph for the first time?
7. *Why did Gandhiji agree to 25% refund when the actual demand was for 50%?
8. What qualities was he able to make in the Indians by the Champaran episode?
9. *Why did he feel that help from the foreigner Mr Andrews was unnecessary?
10. Why does he entrust teachers rather than politicians to make changes in the society?

Answer the following questions in about 100 words:

1. To think differently is a challenging job but ultimate victory comes to those who are not the usual run of the mill. In what way is this true of Gandhiji in the lesson Indigo?
2. *"Freedom from fear is more important than legal justice for the poor" how does he bring home this point in this lesson? State whether Indians have attained freedom from fear even in this post independence era-justify your answer?
3. * What are the qualities of a good leader as portrayed by Gandhiji in the lesson Indigo?

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INDIAN SCHOOL SOHAR
REMEDIAL WORKSHEET
p-Block Elements
CLASS: XII

1. Account for the following:

a) Nitrogen is chemically inert
b) N_2 is a gas but P_4 is a solid at room temperature
c) Catenation tendency is less for nitrogen than phosphorous
d) $R_3P=O$ exists but $R_3N=O$ does not
e) Basic nature of hydrides of group 15 decreases as $NH_3>PH_3>AsH_3>SbH_3>BiH_3$
f) PCl_5 exists but NCl_5 does not
g) White P_4 is more reactive than red P_4
h) All the five P-Cl bonds are not equivalent in PCl_5
i) Electron gain enthalpy of oxygen (or fluorine) is less negative than sulphur (or chlorine)
j) Down the group lower oxidation state gains stability than higher oxidation state
k) Acidic nature of hydrides of group 16 or 17 increases down the group as follows
$H_2O< H_2S< H_2Se< H_2Te$ or $HF<HCl<HBr<HI$
l) SF_6 exists but SCl_6 does not
m) Sulphur in vapour state is paramagnetic
n) Bond dissociation enthalpy of F_2 is less than Cl_2
o) Fluorine is stronger oxidizing agent than chlorine
p) Interhalogen compounds are more reactive than ordinary halogens
q) Noble gases have very low boiling point
r) Compounds of Xe are known with oxygen and fluorine only
s) No distinct chemical compound of He is known
t) Fluorine shows only negative oxidation state
u) Boiling point of NH_3 is more than PH_3
v) H_2S is a better reducing agent than H_2O

2. Draw the structure of the following compounds:

a) $H_2S_2O_3$ b) H_3PO_3 c) $H_2S_2O_8$ d) XeF_2 e) solid PCl_5
f) XeO_3 g) Red P_4 h) N_2O_5 i) H_3PO_2 j) XeF_6
k) XeF_4 l) $XeOF_4$ m) $HClO_4$ o) BrF_3

3. What are the two allotropes of sulphur? Which one is more stable a) above 369K b) below 369K.? What is this temperature called?

4. Arrange the following in the increasing order of their property mentioned:

a) HF, HCl, HBr, HI (Acidic nature)
b) M-F, M-Cl, M-Br, M-I (ionic nature)
c) $NH_3,PH_3,AsH_3,SbH_3,BiH_3$ (boiling point)
d) H_2O, H_2S, H_2Se, H_2Te (Stability)
e) F_2 , Cl_2, Br_2 , I_2 (bond dissociation enthalpy)

5. What is meant by anomalous behaviour? What is it due to?

6. Write the reactions involved in brown ring test.

7. Complete the following reactions:

i) $SO_2 + MnO_4^- + H_2O \rightarrow$

ii) $O_3(g) + I^-(aq) + H_2O(l) \rightarrow$

iii) $P_4 + NaOH + H_2O \rightarrow$

iv) $XeF_2 + PF_5 \rightarrow$

v) $Cl_2 + NaOH$ (hot,conc.) $\rightarrow$

vi) $PCl_5 + H_2O$(xs) $\rightarrow$

vii) $F_2 + H_2O \rightarrow$

viii) $XeF_6 + H_2O \rightarrow$

ix) $Fe^{3+} + SO_2 + H_2O \rightarrow$

x) $PCl_3 + H_2O \longrightarrow$

xi) $XeF_4 + SbF_5 \longrightarrow$

xii) $NaN_3 \longrightarrow$

xiii) $(NH_4)_2Cr_2O_7 \longrightarrow$

xiv) $NH_4NO_3 \longrightarrow$

xv) $Cl_2 + NaOH$ (cold,dil.) $\rightarrow$

xvi) NH_3(excess) + $Cl_2 \longrightarrow$

xvii) $NH_3 + Cl_2$ (excess) $\longrightarrow$

xviii) $H_3PO_3 \longrightarrow$

xix) $H_3PO_2 + AgNO_3 + H_2O \longrightarrow$

8. What is aqua regia? What is it used for? Give its reaction with gold and platinum.

9. In the manufacture of ammonia by Haber's process, very high pressure and low temperature is not maintained? Why? What are the optimum conditions?

10. Write the reactions involved in the manufacture of a) Sulphuric acid by contact process

b) nitric acid by Ostwald process

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INDIAN SCHOOL SOHAR
CHEMISTRY WORKSHEET
p-Block Elements
CLASS: XII Date of submission : 14th Aug 2016

1. Account for the following:
   a) NH_3 is a mild reducing agent while BiH_3 is a strong reducing agent.
   b) Pentahalides of group 15 are more covalent than trihalides
   c) Bond angle in PH_4^+ is more than PH_3
   d) PH_3 acts as a lewis base
   e) O_2 is a gas but sulphur is a solid at room temperature
   f) H_2O is less acidic than H_2S
   g) O_3 is a powerful oxidizing agent
   h) Halogens have maximum negative electron gain enthalpy in their respective periods
   i) NO_2 exists as a dimer
   j) SF_6 exists but SCl_6 does not
   k) S-O bonds in SO_2 are equivalent
   l) SF_4 has a see saw geometry though sulphur in it undergoes sp^3d hybridization
   m) Maximum covalency of sulphur is 6 but oxygen is four
   n) Halogens are highly reactive
   o) HI is more acidic than HF
   p) Chlorine water on standing loses its yellow colour
   q) Chlorine acts as a bleaching agent by oxidation
   r) It is difficult to study the chemistry of radon
   s) Noble gases have large atomic size
   t) Helium is used in diving apparatus
   u) Nitrogen cannot form dΠ – pΠ bond but other elements in group 15 can form dΠ – pΠ
   v) HOCl is more acidic than HOBr

2. Explain, giving reactions, what happens when
   a) Orthophosphorous acid is heated
   b) sodium azide is heated
   c) NH_3 is passed through $CuSO_4$ solution
   d) Ammonium dichromate is heated
   e) Phosphorous is dissolved in boiling NaOH
   f) PCl_5 is exposed to moist air
   g) O_3 is passed through aqueous KI solution
   h) Conc. H_2SO_4 is added to sugar

3. Complete the following reactions:
   a) $HNO_3 + P_4O_{10} \longrightarrow$
   b) $Ca_3P_2 + H_2O \longrightarrow$
   c) $Au + H^+ + NO_3^- + Cl^- \longrightarrow$
   d) $F_2 + H_2O \longrightarrow$
   e) $Se_2Cl_2 \longrightarrow$
   f) $XeF_4 + O_2F_2 \longrightarrow$

4. Draw the structure of the following compounds:
   a) $H_2S_2O_7$ b) H_3PO_4 c) SF_4 d) BrF_5 e) $HClO_3$

5. Arrange the following in the increasing order of their property mentioned:
   a) NH_3, PH_3, AsH_3, SbH_3, BiH_3 (basic character)
   b) N_2O_3, P_2O_3, As_2O_3, Sb_2O_3, Bi_2O_3 (acidic nature)
   c) F_2, Cl_2, Br_2 , I_2 (bond dissociation enthalpy)
   d) H_2O, H_2S, H_2Se, H_2Te (boiling point)

6. What is the hybridization phosphorous undergoes in PCl_5? Draw its structure. What are the two kinds of bonds present in it? Are they equivalent? Justify

7. How is phosphine purified? Give its reaction with HBr? What is PH_3 acting as in this reaction? Account for your answer.

8. Compare the oxidizing power of F_2 and Cl_2 based on bond dissociation enthalpy, electron gain enthalpy and hydration enthalpy.

9. A non metal forms two types of oxides 'A' and 'B'. 'A' when passed through acidified $KMnO_4$ solution decolourises it while 'B' reacts with water to form sulphuric acid. Identify the non metal and the oxides. In which state is the non metal paramagnetic and why? Also write all the reactions.

10. What is transition temperature? Which form of sulphur is more stable above and below this temperature?

11. a) Give an example of a reaction in which O_3 acts as an oxidizing agent.
    b) Give the structure of O_3 and explain why O-O bonds are equivalent?

12. How is SO_2 gas detected? Explain and give the reaction.

13. How are XeO_3 and $XeOF_4$ prepared?

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INDIAN SCHOOL SOHAR

BIOLOGY WORKSHEET

STD XII MOLECULAR BASIS OF INHERITANCE

Answer the following:-

1.Expand the following:-

a) HGP b) YAC c)VNTR d)hnRNA e) UTR.

2. What is reverse transcription? Why is it called so?

3. What is a nucleosome? How many base pairs are there in a nucleosome?

4. Define transformation. Explain Griffith's experiment. How did Avery,Mac Carty and Mc Leod Confirm the chemical nature of the molecule that was responsible for the transformation?

5. Who confirmed that DNA is the chemical basis of heredity? Explain the experiment.Why is this experiment also known as the blenders experiment?

6. List the properties of a genetic material.Why is DNA preferred to RNA as genetic material?

7. Define genetic code. List the salient features of the genetic code.

8. Give the experimental proof for semi conservative replication of DNA? Name the scientist who proved this? What was the experimental material used?

9. Why RNA viruses mutate and evolve faster than other viruses?

10.With the help of a diagrammatic representation, explain continuous and discontinuous synthesis of DNA. What is the direction of action of DNA polymerase?

11. What are the three regions present in a transcriptional unit? Explain the process of transcription in prokaryotes and eukaryotes. What are the complexities found in eukaryotic transcription.

12. Explain the steps involved in the process of translation.

13. Mention the steps involved in DNA fingerprinting? What are its applications?

14. What are the goals of HGP? List the salient features of HGP.

15. A DNA segment GCGAGGGGATG was translated into an oligopeptide – arginine-serine proline- tyrosine. What is the base sequence of mRNA translated from the DNA segment? What is the anticodon for the tRNA carrying methionine?

16. AUGGACCUGAUAUUUAGA is the base sequence in a strand of mRNA-

(i)Write the base sequence of the DNA strand from which it has been transcribed.

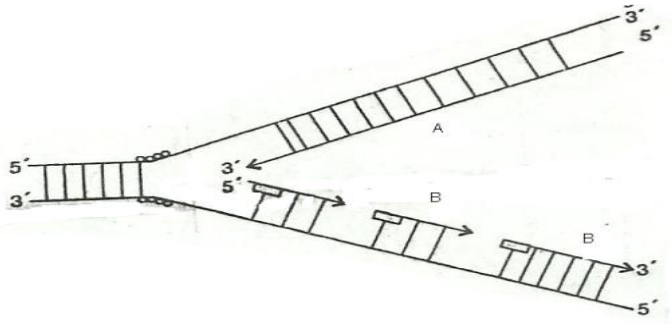
(ii) Upon translation, how many amino acids will the resulting peptide have?

18. Give an example of operon where polycistronic structural genes are controlled by a common promoter and regulator gene.

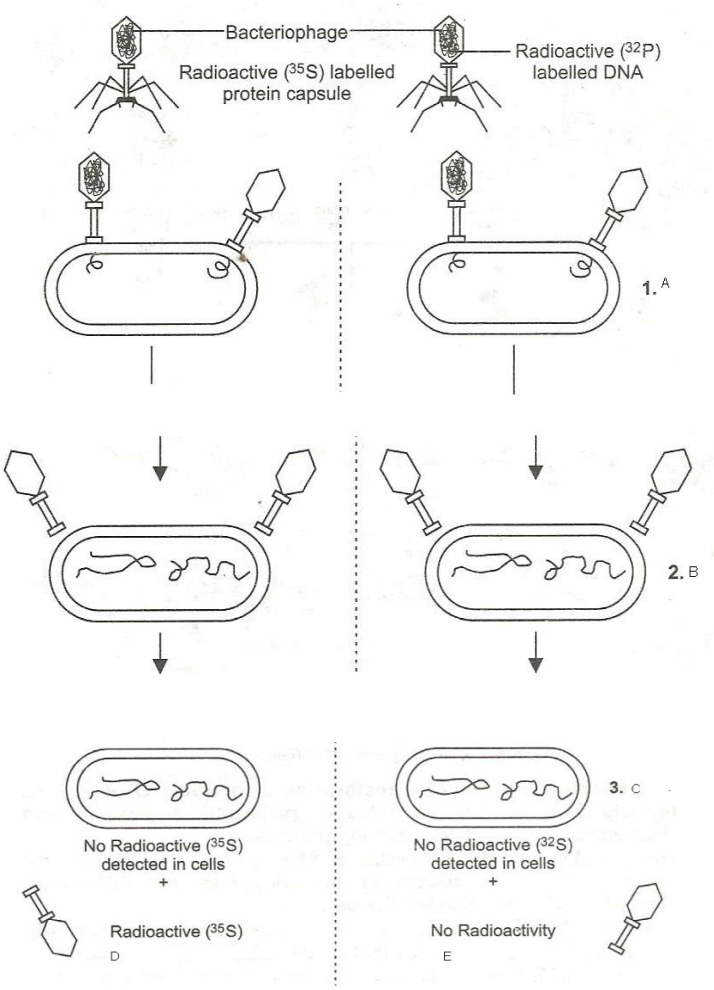
19. Illustrate schematically the process of initiation,elongation and termination during transcription of a gene in a bacterium.

20. Describe the experiment conducted by Hershey and Chase for the identification of genetic material. Why is it considered pathbreaking in the field of molecular biology.

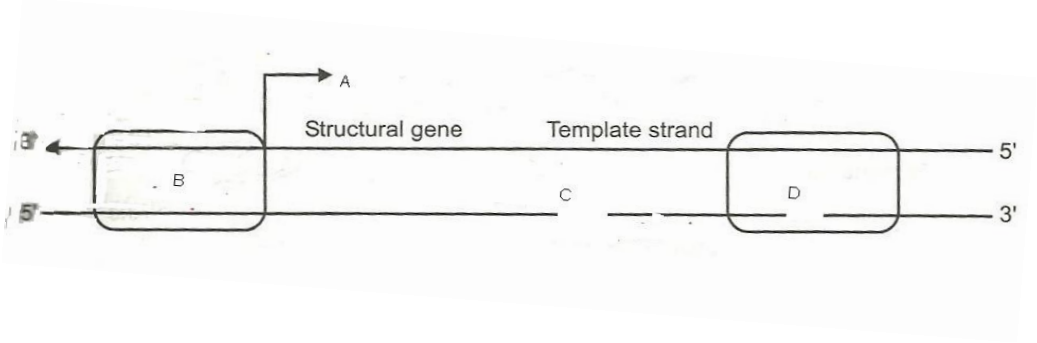
21. Name the type of synthesis of 'a' and 'b' occurring in the replication fork of DNA as shown below.



22.Label the parts marked A toE in the given figure.Who performed this experiment and what did they prove?



23.Given below is the schematic structure of a transcription unit .



a) label the parts marked A,B, C and D .

b) Name (i)the enzyme that helps in transcription (ii)the strand that gets transcribed.

24. Figure depicting lac operon of *E.coli*

a) What does P, O and R represent? Name the inducer and the three enzymes that zya would get transcribed.

b) What could be the series of events when an inducer is present in the medium?

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