OXFORD PUBLIC SCHOOL, RANCHI

SUMMER HOLIDAY ASSIGNMENT (2018-19)

CLASS – XII (PCB)

ENGLISH

1. Read the novel SILAS MARNER and write the summary in 500 -1000 words.
2. Write in 100 words about the importance and utility of mother-tongue.
3. Do you think that English language is essential for literate and educated Indians?(write in 100 words)
4. Write an article in 150 words on the need of Patriotic Spirit among youth of India. It is because the Indian youth lack the spirit of Patriotism.
5. Highlight the miserable life of street children. They do not go to any school, work in the inhuman conditions and live in slums .How can we bring them back to the main stream of life? (150 words).

PHYSICS

Chapter 1 : Q.No. 7, 13, 18, 24, 27, 29, 33 **NCERT EXEMPLAR :** Q.No. 15, 18, 23

Derivations

1. Derive an expression for electric field due to electric dipole.
2. Derive an expression for torque and potential energy of an electric dipole placed in an uniform electric field.
3. Derive an expression for electric field due to uniformly charged hollow sphere.
4. Derive an expression for electric field due to plane thin uniformly charged sheet.
5. Derive an expression for electric field due to uniform linear charge distribution.

CHEMISTRY

Chapter 10: Haloalkanes And Haloarenes & Chapter 11: Alcohols, Phenols & Ethers

1. Draw the structures of the following:
   i. p-Bromochloro benzene ii. 2-Chloro-3-methylbenzene iii. 4-tert.Butyl-3-iodo heptane.
2. Haloalkane reacts with KCN to form alkyl cyanide as main product while with AgCN it forms isocyanide as chief product. Explain.
3. Although Chlorine is EWG yet it is ortho and para directing group. Why?
4. How the following conversions can be carried out?
   i. Ethanol to But-1-yne. ii. Benzyl alcohol to 2- Phenyl ethanoic acid.
   iii. Ethyl chloride to Propanoic acid. iv. Toluene to Benzyl alcohol.
5. Write the structure and IUPAC name of DDT and its uses.
6. Allylic Chloride is more reactive than n-Propyl Chloride towards nucleophilic substitution reaction. Explain why?
7. Compound A (C_3H_7Br) gives B (C_3H_6) when reacts with alcoholic KOH. B on oxidation gives C (an acid), CO_2 and H_2O., with HBr it gives D, an isomer of A. Identify compounds A,B,C and D.
8. A hydrocarbon of molecular mass 72 $gmol^{-1}$ gives single monochloro derivative and two dichloro derivatives on photochlorination. Give the structures of the hydrocarbon.
9. a) Explain why alkyl halides are generally not prepared in the laboratory by free radical halogenations of alkanes?
   b) Explain why chlorination of n-butane in presence of light at 298K gives a mixture of 72% of 2-Chlorobutane and 28% of 1-Chlorobutane.
   c) Wurtz reaction fails in case of tert-alkyl halides. Explain.
10. a) What is denatured alcohol?
    b) Out of 2-Chloroethanol and ethanol, which is more acidic and why?
    c).Give the reaction to show that phenol is acidic in nature.
11. Give the mechanism of the reaction:

    $2\ CH_3CH_2OH \xrightarrow{conc.H_2SO_4\ /\ 413\ k} CH_3CH_2OCH_2CH_3$

    Does this reaction follow S_N1 or S_N2 pathway?
12. a) Write the products obtained by benzyl phenyl ether is heated with HI.
    b) Write the mechanism of dehydration of Ethanol to Ethene at 443 K in presence of conc. H_2SO_4.
13. Convert the following:
    a) Ethanol to Ethoxyethane b) Methanol to Ethanol c) Propan-2-ol to Propanone
14. Write short notes on the following:
    a) Kolbe's reaction b) Reimer- Tiemann reaction

15. Give reasons:
    a) Primary alcohol is more acidic than tertiary alcohol.
    b) Phenol is more acidic than alcohol.
    c) Picric acid is more acidic than phenol.

BIOLOGY

1. Enumerate the differences between asexual and sexual reproduction. Describe the types of asexual reproduction exhibited by unicellular organisms.
2. Do all the gametes formed from a parent organism have the same genetic composition (identical DNA copies of the parental genome)? Analyse the situation with the background of gametogenesis and provide or give suitable explanation.
3. Although sexual reproduction is a long drawn, energy-intensive complex form of reproduction, many groups of organisms in Kingdom Animalia and Plantae prefer this mode of reproduction. Give atleast three reasons for this.
4. Differentiate between (a) oestrus and menstrual cycles; (b) ovipary and vivipary. Cite an example for each type.
5. Starting with the zygote, draw the diagrams of the different stages of embryo development in a dicot.
6. What are the possible types of pollinations in chasmogamous flowers? Give reasons.
7. With a neat, labelled diagram, describe the parts of a mature angiosperm embryo sac. Mention the role of synergids.
8. Draw the diagram of a microsporangium and label its wall layers. Write briefly on the role of the endothecium.
9. Embryo sacs of some apomictic species appear normal but contain diploid cells. Suggest a suitable explanation for the condition.
10. A human female experiences two major changes, menarche and menopause during her life. Mention the significance of both the events.
11. a. How many spermatozoa are formed from one secondary spermatocyte?
    b. Where does the first cleavage division of zygote take place?
12. Corpus luteum in pregnancy has a long life. However, if fertilisation does not take place, it remains active only for 10-12 days. Explain.
13. What is foetal ejection reflex? Explain how it leads to parturition?
14. Except endocrine function, what are the other functions of placenta?
15. Why doctors recommend breast feeding during initial period of infant growth?
16. What are the events that take place in the ovary and uterus during follicular phase of the menstrual cycle?
17. Give a schematic labelled diagram to represent oögenesis (without descriptions)
18. What are the changes in the oogonia during the transition of a primary follicle to Graafian follicle?
19. What are the Assisted Reproductive Techniques practised to help infertile couples? Describe any three techniques.
20. Discuss the mode of action and advantages/disadvantages of hormonal contraceptives.
21. STDs are a threat to reproductive health. Describe any two such diseases and suggest preventive measures.
22. Do you justify the statutory ban on aminocentesis in our country? Give reasons.
23. Enumerate and describe any five reasons for introducing sex education to school-going children.

ECONOMICS (5TH PAPER)

Assignment on Theory of Demand

1. Define Demand. Name the factors affecting market demand.
2. Distinguish between an inferior good and a normal good. Is a good which is inferior for one consumer also inferior for all the consumers?
3. How does change in price of a substitute good affect the demand of the given good? Explain with the help of an example.
4. What is the difference between:
    (a) Change in quantity demanded and change in demand
    (b) Extension in demand and Increase in demand
    (c) Contraction in demand and decrease in demand
5. Explain the causes for a leftward shift of demand curve.
6. Explain with the help of diagrams, the effect of the following on demand for a good:
    (a) Rise in income of its buyers
    (b) Rise in the price of the substitute
    (c) Fall in income of its buyers
    (d) Fall in the price of the complementary good
7. Why does Demand Curve slope downward?
8. Explain the causes resulting in violation of the Law of Demand.

9. What is a demand function?
10. Distinguish between demand by an individual and market demand with the help of a schedule.
11. The price of eggs rises and yet it is observed that the demand for eggs is rising. Does it mean that the demand curve for eggs is upward sloping?
12. Demand equation is given as:- $Q_d = a - bp$
    (i) What is there in this equation that makes the demand curve a straight line?
    (ii) What happens to demand curve in case 'a' increases?
    (iii) What makes the demand curve slope downwards?

COMPUTER SCIENCE (5TH PAPER)

Programming in C++

1. Define a class **Shape** with the following specifications:

Private Members:

- Name of Shape - String
- Number of Angles - Integer
- A function Decide( ) to assign the name of shapes depending upon the given criteria:

Number of Angles	***Name of Shape***
0	Circle
3	Triangle
4	Rectangle

Public Members:

- A constructor to initialise Name of Shape to "EMPTY" and Number of Angles to -1.
- A function Shapein( ) to enter the number of angles and invoke Decide( ).
- A function Shapeout( ) to print all data members.

2. Define a class **Movie** with the following specifications:

Private Members:

- Name - String
- Time - String
- Number of Persons - Integer
- Amount - Float
- A function Book( ) to calculate the amount to be paid as per the Show Time listed below :

Time	***Amount***
Morning	170 per person
Afternoon	250 per person
Evening	400 per person

Public Members:

- A constructor to initialiseName and Time to "Not Alloted" and Number of Persons & Amount to 0.
- A function GetMovie( ) to enter Name, Time and Number of Persons and call Book( ).
- A function ShowMovie( ) to display all data members.

3. Observe the following program and answer the questions that follow:

```
class Drama{
        char Name[20];
        int episode;
public :
        Drama()         // function1
        { strcpy(Name, "Annual Day"); episode=10; }
        Drama (int x)  //function2
        { episode=x;}
        ~Drama()        //function3
        { cout<< "Last episode"; }
        Drama(Drama &M)    //function4
        { episode=M.episode; strcpy(Name, M.Name); }
        void Output( )
        { cout<< endl<<Name<< " "<<episode; }
};
```

(a) As per Object Oriented Programming, which concept is illustrated by function 1, 2 & 4 together?

(b) Write the specific name of function 3. When will it be executed?
(c) Write C++ statement to invoke function 1, 2 and 4 separately.
(d) What is function1 specifically known as? When will it be executed?

NETWORKING

1. Expand the following abbreviations:

1) WLL	2) TCP/IP	3) FTP	4) SMTP	5) NNTP
6) SLIP/PPP	7) SMS	8) GPRS	9) CDMA	10) TDMA
11) NIU	12) MODEM	13) GSM	14) XML	15) URL
16) POP	17) IMAP	18) ASP	19) JSP	20) VOIP
21) FSF	22) PAN	23) MAN	24) HTTP	25) SIM
26) HSPA	27) IMS	28) LTE	29) VOLTE	
30) WIMAX	31) IRC	32) SIP		

2. Write short notes on the following:

a) ARPANET	b) Internet	c) Intranet	d) Gateway
e) Backbone	f) Server	g) Client/Nodes	h) NIU
i) MAC address	j) Bandwidth	k) Crosstalk	l) Modem
m) RJ-45	n) Telnet		

3. Differentiate between the following subtypes of guided media:
   a) Shielded Twisted Pair (STP) and Unshielded Twisted Pair (UTP) Cable
   b) Thinnet and Thicknet
   c) Multinode and Singlenode
4. Give atleast two examples of each:
   a) Antivirus b) Open Source Software c) Proprietary Software d) Free Software

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PHYSICAL EDUCATION (5TH PAPER)

VERY SHORT ANSWER QUESTIONS

1. What does the word 'Tournament' mean?
2. What do you understand by seeding?
3. What do you mean by planning?
4. What is consolation tournament?
5. What do you mean by league cum league tournament?

SHORT ANSWER QUESTIONS

6. Explain the importance of tournaments.
7. Briefly explain the objectives of intramurals.
8. Draw a fixture of 15 teams on knock out basis.
9. Draw a fixture of 19 teams on league cum knock out basis.
10. Explain the different steps to be followed for organising a health run in your school.

LONG ANSWER QUESTIONS

11. Briefly explain the objectives of extramural in details.
12. What do you mean by specific sports programmes? Explain about health run and run for unity in details.
13. Draw a league fixture for 12 teams (Cyclic and Staircase method).
14. What do you mean by combination tournament? Discuss league cum knock-out and knock-out cum league with the help of examples.
15. What is league tournament? Explain the types, merits and demerits of league tournament.

HINDI (5TH PAPER)

1. फीचर (बोर्ड में पूछे गए किसी एक विषय पर)
2. आलेख (बोर्ड में पूछे गए किसी एक विषय पर)
3. दूरदर्शन निर्देशक के पास पत्र
4. जनसंचार माध्यम (कक्षा में पठित पाठ)

FINE ARTS (5TH PAPER)

1. Draw a sketch of any two portraits and any three scenery.
2. Give a brief description of Indian Miniature Painting.
3. Write an essay on the origin and development of the Rajasthani School of Miniature Painting.
4. Write an essay on the origin and development of the Pahari School of Miniature Painting.

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