

ASSIGNMENT(2018 -19)
SUBJECT - : PHYSICS (042)
CLASS -XI

CHAPTER 1 (PHYSICAL WORLD)

1. What is Physics? Discuss the relation between Physics & technology.
2. Give two advancements made in technology on the basis of Physics.
3. Name a few developments in Physics which have a direct impact on daily life.
4. State fundamental forces in nature.
5. What is the main aim of Science?

CHAPTER 2 (UNITS AND MEASUREMENTS)

1. What do you understand by derived physical quantities?
2. Write the dimensions of (a,b) in the relation $E = (b-x^2)/at$, where E is energy, x is distance and t is time.
3. The time period of oscillation of simple pendulum in an experiment is recorded as 2.56 s, 2.62 s, 2.70 s, 2.58 s, 2.45 s respectively. Find the time period, absolute error in each observation & percentage error.
4. Write down the number of significant figures in the following: (i) 3286 N (ii) 7100 kg (iii) 64.000 m (iv) 0.04192 Nm^{-1} .
5. The radius of a sphere is measured to be $(5.3 \pm 0.1)\text{cm}$. Calculate the percentage error in the measurement of its volume.
6. Check the dimensional consistency of following equations:

$$(i) v = \sqrt{\frac{2GM}{R}} \quad (ii) T = 2\pi\sqrt{\frac{l}{g}}$$

7. Assuming the critical velocity v of viscous fluid flowing through a tube depends only upon its density ρ , radius of the tube r & the coefficient of viscosity of fluid η , show by the method of dimensions that $v = K\eta/\rho r$

CHAPTER 3 (MOTION IN A STRAIGHT LINE)

1. The distance travelled by a body varies directly proportional to the square of time. What type of motion this body has?
2. Find the distance travelled by the uniformly accelerated object moving in one dimension in n th second.
3. A balloon starts rising from the ground with an acceleration of 1.25 ms^{-2} . After 8 s, a stone is released from the balloon. Find the time taken by the stone to reach the ground after its release. Take $g = 10 \text{ ms}^{-2}$.
4. A particle travels half the distance with a speed v_0 . The remaining part of the distance was covered with speed v_1 for half the time and with speed v_2 for the other half of the time. Find the average speed of the particle averaged over the whole time of motion.
5. Can the speed of a body change if its velocity is constant? Explain.
6. Deduce the equations of motion by calculus method.
7. Chandigarh and Ambala are connected with a regular bus service. A bus leaving in either direction every T minutes. A boy cycling with a speed of 10 km/h from Chandigarh to Ambala notices that a

bus crosses him after every 15 min towards Ambala and after every 5 minutes towards Chandigarh. Calculate the time T and the speed of the buses. Assume that speed of buses is constant.

8. If the time displacement graph of a particle is parallel to the time axis what will be velocity of the particle?

CHAPTER 4 (MOTION IN A PLANE)

1. At what angle the two forces $(F_1 + F_2)$ & $(F_1 - F_2)$ act so that the resultant is $\sqrt{2}(F_1^2 + F_2^2)$.
2. Two forces each of 4 N acts on a body at an angle of 60° . Find the magnitude and the direction of the resultant force acting on the body.
3. Explain (i) negative vector (ii) co-initial vector (iii) orthogonal unit vector (iv) equal vector.
4. Is it possible to accelerate a particle if it is travelling at constant speed?
5. Show that there are two angles of projection for which the horizontal range is same.
6. What is centripetal acceleration? Find its magnitude & direction in case of a uniform circular motion of an object.
7. Calculate the angular speed of the second hand of a clock. If the length of the seconds hand is 4 cm, calculate the speed of the tip of the second hand.
8. A ball is projected horizontally from the top of the tower of height 100 m with a velocity of 5 m/s. Calculate the time taken by the ball to reach the ground.

CHAPTER 5 (LAWS OF MOTION)

1. Write and explain the types of inertia with example.
2. Write three consequences of Newton's second law of motion.
3. Why a cricket player lowers his hands while catching a cricket ball?
4. Why does a heavy gun recoil so strongly as a light gun firing the same bullet?
5. Derive an expression for work done when a body is made to slide up a rough inclined plane.
6. Why does a pilot not fall down, when his aeroplane loops a vertical loop?
7. A golf ball of mass 60 g at rest is hit with a striker. Find the impulse of the hit if the ball stops after travelling a horizontal distance of 50 m with a uniform retardation of 4 ms^{-2} .
8. Write the laws of limiting friction.

CHAPTER 6 (WORK, ENERGY AND POWER)

1. Explain the natures of work done with two examples of each.
2. Define conservative & non conservative forces with example.
3. A man rowing a boat upstream is at rest with respect to the shore. Is any work being done in this case?
4. A cake of mud is thrown on a wall where it sticks. What happens to its initial kinetic energy?
5. Discuss elastic collision in one dimension. Obtain expression for velocities of the two bodies after such a collision.
6. From where does the energy in a water fall come?
7. A ball falls under gravity from a height of 10 m with an initial downward velocity u . It collides with the ground, loses 50% of its energy in collision and then rises back to the same height. Find the initial velocity u .
8. A motor can pump up water to fill a tank of volume 500 m^3 in 25 minutes, which is placed at a height of 20 m. If efficiency of the motor is 40%, calculate the power of the motor.

International Indian School, Dammam (BSSS)

Holiday Assignment – English (Class XI)

THE GHAT OF THE ONLY WORLD (SNAPSHOTS)

Read the lesson, 'The Ghat of the Only World' and answer the following questions:

1. What impressions do you gather about Shahid's political and religious views from this essay?
2. How did Shahid and the author react to the knowledge that Shahid was going to die?
3. What common interests did the narrator share with Shahid?
4. Look up the word 'diaspora' in your dictionary. Write a short note of about 100 words on: 'The Indian diaspora.'
5. Comment on the title of the essay, 'The Ghat of the only World.'

INTERNATIONAL INDIAN SCHOOL, DAMMAM
CLASS XI BUSINESS STUDIES BSSS
HOLIDAY ASSIGNMENT - 2018

1. Distinguish between economic and non –economic activities.
2. How do Auxiliaries to trade help industry and trade.
3. Explain the characteristics of business.
4. “Profit maximization should not be the sole objectives of a business.”
Explain
5. Explain the nature of business risks. What are the various types of business risks faced by an enterprise?
6. What is the position of a partner, when
(a) He is a minor? (B) He attains majority?
7. Explain the merits and demerits of partnership form of business?
8. “One man control is the best in the world if that man is big enough to manage everything.” Comment?
9. “Company is an artificial person with separate legal entity, perpetual succession and common seal. “ Comment.
10. “A private company is superior to a public company.” Discuss this statement in the light of privileges of a private company.
11. Explain the features of Joint Hindu Family.
12. State and explain the six steps required to raise the funds from the public, i.e, capital subscription by the company.
13. Explain the documents required for certificate of incorporation.
14. Why Memorandum of association is referred to as ‘Charter or Constitution of Company’?
15. Explain the steps taken by the Promoters in the Promotion of company.
16. What is prospectus? Is it necessary for every company to file a prospectus?
17. List the documents required for the incorporation of a company.
18. Explain the advantages of Public Private Partnership.
19. Define joint venture and explain its various benefits .
20. Distinguish between departmental undertaking, statutory corporation and government company.
21. Differentiate Business, Profession and Employment.

22. "MNCs are not able to fulfill the hopes with which they were allowed to enter Indian markets". State the safeguards which can be adopted by Government to ensure effective role of MNCs in the country.
23. Explain the functions of Indigenous Banking
24. Identify the following
- a) The clause which mentions the name of the state, in which the registered office of the company is to be situated.
 - b) A document which invites deposits from the public or offers from the public for the subscription of shares or debentures of a company.
 - c) Main document or constitution of company
 - d) Partner who does not participate in the management affairs of the business of the firm actively.
25. Explain the trading community of India.

NOTE: Submit neatly handwritten in a file by September 10th.

Inter-state transactions are subject to levy of IGST @12% and Intra-state transactions are subject to levy of CGST and SGST @6% EACH. GST is not levied on transactions marked with (*).

Post the above transactions to the Ledger and prepare the Trial Balance as on 30th April 2018.

Q.16 Prepare a Double Column Cash Book

Date	Particulars	₹
2017		
DEC 1	Cash in hand Bank of Overdraft	7,500 35,000
DEC 2	Paid Wages	2,000
DEC 5	Cash sales of ₹70,000 plus CGST and SGST @6% each	
DEC 10	Cash deposited into bank	40,000
DEC 15	Goods Purchased for ₹20,000 plus IGST @12% and paid by Cheque	
DEC 20	Paid Rent	5,000
DEC 25	Drew from bank for personal use	4,000
DEC 30	Salary Paid	10,000

Write the answers to above questions and submit in a file on or before 9th September 2018. The file should have the following details:

1. Cover Page
2. Name of the Student, Class, Section and Admission Number
3. Acknowledgement
4. Index Format:

Sr.no	Description of the Questions	Page No From to	Remarks And Sign Teacher in charge
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5. Answers to the Questions from q.1 to q.16

Accountancy Project

Project Work : Collection of Source Documents ,Preparation of vouchers and Recording of transactions with the help of vouchers.

Objectives of the project : To have an understanding of the various source documents in the accounting process.

The students are required to collect the data related to the source documents of the accounting entries in the journal and subsidiaries books .These include the documents like Sales Invoice, Purchase Invoice, Debit Note, Credit Note ,Vouchers etc.

The students shall

- Identify the various invoices related to the preparation of books of accounts.
- Collect samples of each of the documents identified above
- Collect the essential details regarding the above documents, stick these documents in chronological order and record the necessary vouchers in the file and submit it on or before 9th September 2018.

10. What is the main objective of accounting?

11. What do you mean by Cash Basis of Accounting?

12. What do you mean by Accrual Basis of Accounting?

Q13. Amar commenced business with a capital of ₹75,000 on 1st April 2006. The various transactions that took place during the year were as follows:-

- (i) Purchased machinery worth ₹7,000 for office use.
- (ii) Bought machinery for ₹10,000.
- (iii) Purchased goods from Jitinder for ₹5,000.
- (iv) Purchased goods from Hari in cash ₹8,000.
- (v) Sold goods (costing ₹4,000) at a profit of 25% on cost.
- (vi) Withdrew cash for private use ₹2,000.
- (vii) Deposited into bank account ₹1,000. (viii) Expenses paid ₹2,000.

Prepare an accounting equation to give effect to the above transactions.

Q.14 Record journal entries for the following transactions in the books of Anudeep of Delhi:

- (a) Bought goods ₹2,00,000 from Kanta of Delhi (CGST @ 9%, SGST @ 9%)
- (b) Bought goods ₹1,00,000 for cash from Rajasthan (IGST @ 12%)
- (c) Sold goods ₹1,50,000 to Sudhir of Punjab (IGST @ 18%)
- (d) Paid for Railway Transport ₹10,000 (CGST @ 5%, SGST @ 5%)
- (e) Sold goods ₹1,20,000 to Sidhu of Delhi (CGST @ 9%, SGST @ 9%)
- (f) Bought Air-Condition for office use ₹60,000 (CGST @ 9%, SGST @ 9%)
- (g) Sold goods ₹1,50,000 for cash to Sunil to Uttar Pradesh (IGST 18%).

Q.15 On 1st April 2018, the following were Ledger balances of M/s Ram & Co, Delhi :
Cash in hand ₹300; Cash at bank ₹7,000; Bill payable ₹1000; Zahir (Dr.) ₹800; Stock ₹4,000; Gobind (Cr.) ₹2000; Sharma (Dr.) ₹1,500; Rahul (Cr) ₹900; Capital ₹9,700
Transactions during the month of April 2018 were:

Date	Particulars	Amount
2018		₹
APRIL 2	Bought goods from Gobind, Delhi	900
APRIL 3	Sold goods to Sharma, Kanpur	1,000
APRIL 5	Bought goods from Rahul, Delhi	1,200
APRIL 8	Sold goods to Zahir, Kolkatta	500
APRIL 15	Paid Gobind by cheque*	1,500
APRIL 18	Received from Sharma a Cheque of Allowed him discount*	2,000 50
APRIL 20	Sold goods to Sharma, Kanpur	800
APRIL 20	Paid rent by cheque	200
APRIL 25	Sold goods to Zahir, Kolkata	1,000
APRIL 30	Paid salaries in cash*	300

International Indian School Dammam
Holiday Assignment 2018-19
Accountancy -Class XI

1. Explain the advantages of Accounting?

2. Classify the following into Assets, Liabilities, Capital, Revenue and Expenses.

- (1) Building (2) Wages (3) Credit sales (4) Credit purchases (5) Electricity charges due but not yet paid (outstanding electricity bills)
(6) Godown rent paid in advance (prepaid godown rent) (7) Sales (8) Fresh capital introduced
(9) Drawings (10) Discount paid.

Q.3 Write down the rules of debit and credit as per Modern Classification of Account

Q4. Define the following terms:-

- a. Revenue b. Trade Payables c. Fictitious Assets d. Working Capital e. Drawings
f. Goods g. Bank overdraft h. Cost i. Capital j. Business Transactions
k. Inventory l. Trade Payables m. Trade Receivables n. Stock o. Purchase Return

Q5. Identify the Accounting Assumption or Accounting Principle involved in each of the following situations:-

- (i) A transaction is recorded in the books when it is entered into and not when the settlement takes place.
(ii) Provision is made for all known liabilities and losses.
(iii) Economic life of an enterprise is split into periodic intervals.
(iv) Expenses incurred in an accounting period should be matched with the revenues recognized in that period.
(v) Only those items should be disclosed that have significant effect or are relevant to the users.

6. Out of the following assets which one is not an intangible asset(s)?

- a. Patents b. Investments c. Furniture d. Building

7. Godrej Ltd. Imported from Germany one machinery for sale in India and another machinery for production purpose. Will you treat them goods or fixed assets?

8. Mr. Dinanath who owed us Rs/- 50,000 became insolvent and paid only 40% of this amount. What is term used for the amount not received?

9. The persons who owe some amount to the business are termed as.....?

10. What is the main objective of accounting?

11. What do you mean by Cash Basis of Accounting?

12. What do you mean by Accrual Basis of Accounting?

INTERNATIONAL INDIAN SCHOOL DAMMAM (BSSS)

CHEMISTRY HOLIDAY ASSIGNMENT XI (2018 – 2019)

(1) Complete the Chemistry Lab record:

Anion analysis (7 experiments), Cation analysis (3 experiments)

Unknown anion & cation analysis (4 experiments)

(2) Unit 1: Some Basic Concepts of Chemistry

Define the following terms: Precision, Accuracy, Mole, Empirical formula, Molecular formula, Limiting reagent, Mole fraction, Molarity, Molality

State the following laws: Law of conservation of mass, Law of definite proportions, Law of multiple proportions, Gay Lussac's law of gaseous volumes, Avogadro law.

Solve the following exercise questions: 1.4, 1.5, 1.6, 1.9, 1.11, 1.23, 1.24, 1.33, 1.35, 1.36

(3) Unit 2: Structure of Atom

State the following principles:

(a) Heisenberg Uncertainty Principle (b) Pauli Exclusion Principle (c) Aufbau Principle
(d) Hund's rule of maximum multiplicity (e) $n+l$ rule

Draw the shape of atomic orbitals having the quantum no: $l=0$ (s-orbital), $l=1$ (p-orbital), $l=2$ (d-orbital).

Write electronic configuration of the following atoms/ions: Ti ($Z=22$), Cr ($Z=24$), Fe^{2+} ($Z=26$), Cu ($Z=29$)

Write the quantum numbers n , l , m_l , m_s for the unpaired electrons in Cl, Na, K, Fe^{2+} , Cu.

Solve the following exercise questions: 2.7, 2.13, 2.14, 2.16, 2.19, 2.20, 2.21, 2.31

(4) Unit 3: Classification of Elements

Give reasons for the following:

- (a) First ionization enthalpy of boron is slightly less than that of beryllium.
- (b) First ionization enthalpy of oxygen is slightly less than that of nitrogen.
- (c) The first ionization enthalpy of Na is lower than that of Mg but its second ionization enthalpy is higher than that of Mg.
- (d) Electron gain enthalpy of oxygen is less negative than that of sulphur.
- (e) Electron gain enthalpy of fluorine is less negative than that of chlorine.

On the basis of quantum numbers, justify that the sixth period of the periodic table should have 32 elements.

Write the general outer electronic configuration of d- and f- block elements.

(5) Unit 14 : Environmental Chemistry (part II text book)

Explain the following terms with suitable examples:

1. Global Warming and Greenhouse effect
2. Acid rain
3. Smog (Classical and Photochemical)
4. Ozone layer depletion
5. Biochemical Oxygen Demand (BOD)
6. Eutrophication
7. Pesticides and Herbicides
8. Green Chemistry

Solve exercise questions 3, 4, 6, 7, 8,10, 13, 17, 18 of Environmental Chemistry.

The assignment should be hand written only.

Last date for the submission of the CHEMISTRY PRACTICAL RECORD and the ASSIGNMENT is 9th September 2018.



NANCY GEORGE
CHEMISTRY COORDINATOR (BSSS)

HOLIDAY ASSIGNMENT (COMPUTER SCIENCE)

CLASS XI

PROGRAMMING METHODOLOGY (Refer test book)

Submission date: 16/09/2018 (neatly hand written copy should be submitted)

1. Why a program should have good presentation style?
2. What are the different stylistic guidelines in program development?
3. What is the role of comments and indentation in a program?
4. What is a prologue?
5. What is free formatting?
6. What is pretty printing?
7. What is Echo printing?
8. What are the characteristics of a good program?
9. What are the different stages of program development?
10. What do you mean by source code and object code?
11. What is meant by Robustness?
12. What is meant by Guard code?
13. What is a bug?
14. What are the different types of errors?
15. What are the different types of compilation errors?
16. What are run time errors?
17. What are logical errors? Why logical error harder to locate?
18. What is known as Exception?
19. What is Exception Handling?
20. Mention the different steps you would follow while writing a program.
21. What is meant by an algorithm?
22. What is testing?
23. What is debugging?
24. What are general debugging methods?
25. What is program verification?
26. What are the different methods developed for program verifications?
27. What are different methods developed for program testing?
28. What is program documentation?
29. What is mean by program maintenance?
30. What are the different types of maintenance?
31. What is modularity in programming?

Maya Griby
01/17/18

INTERNATIONAL INDIAN SCHOOL DAMMAM

HOLIDAY ASSIGNMENT (2018-19)

CLASS : XI

MARKETING MANAGEMENT

1. Explain the importance of Marketing to the Marketers.
2. Write the difference between Marketing and Selling concepts.
3. What is Societal Marketing Concept?
4. Explain the scope of Marketing.
5. Explain the importance of Marketing to Customers.
6. What is Relationship Marketing?
7. Explain various Marketing Philosophies.
8. Explain the characteristics of Marketing Mix.
9. What are the steps involved in developing a marketing mix?
10. Explain the 4 C's of marketing mix.

Write the answers and submit it in the form of a booklet on or before 10th September.

Plangui
01/07/18

INTERNATIONAL INDIAN SCHOOL, DAMMAM

HOLIDAY ASSIGNMENT 2018-19

CLASS XI (BSSS)

ECONOMICS

Answer the following.

A. Micro Economics

1. What are the central problems? Explain it .
2. Write a note on PPC with table and diagram .
3. Distinguish between micro economics and macroeconomics.
4. Explain the Law of diminishing Marginal utility?
5. What are the conditions of consumers' equilibrium when he consumes Two goods?
6. What are the properties of indifference curve? Explain with the help of diagram.
7. Explain the consumers equilibrium in ordinal approach.
8. A consumer consumes wo commodities X and Y whose prices are Rs.4 per unit and Rs.6 per unit respectively.MU of X is 3 and Mu of Y is 2 . Is the consumer is in equilibrium. Explain.

B. Statistics for economics

1. What are the features of statistics?
2. Explain the limitation of statistics .
3. Distinguish between meaning of statistics in singular and plural sense .
4. Differentiate between economic and non-economic activities with example .
5. what is classification of data? Explain the types of it.
6. what are the parts of an ideal table.?
- 7.What is meant by sampling errors.?

Soeina

INTERNATIONAL INDIAN SCHOOL, DAMMAM

SUBJECT: - PHYSICAL EDUCATION

CLASS: - XI

HOLIDAY ASSIGNMENT – 2018 – 19

Class: XI

1. Complete the Project file of Physical Education:

- i) Labelled diagram of 400 M Track & Field with computations.
- ii) Labelled diagram of field & equipment of any one game of your choice out of the given below list.
****Archery, Badminton, Gymnastics, Judo, Swimming, Table Tennis, Taekwondo & Tennis****
- iii) Explanation & list of current National Awardees:
(Dronacharya Award, Arjuna Award & Rajiv Gandhi Khel Ratna Award)
- iv) Pictorial presentation of any five Asanas for improving concentration.

INTERNATIONAL INDIAN SCHOOL –DAMMAM

HOLIDAY ASSIGNMENT -2018

CLASS :11

SUBJECT: BIOLOGY

Assignment:

1. Structural organization of cockroach (External morphology and all systems)
2. Epithelial tissue , Connective tissue, Muscular tissue, Neural tissue (Explanation with diagrams)
3. Diagrams of
 - (a) Human eye
 - (b) Human brain
 - (c) Human Kidney
 - (d) Human heart.
 - (e) Duct system of liver , gallbladder and pancreas
 - (e) Aestivation in plants and Placentation in plants.
4. Mineral nutrition (Role of Nutrients in Plants, Page no:196 , 12.2.2 and 12.2.3)

Note: Students will do assignment on A₄ size paper and will keep in a folder.

List of experiments /topics to write in the lab record.

1. Study and description of families Solanaceae , Fabaceae and Liliaceae
2. Preparations and study of T.S of dicot and monocot roots and stems.
3. Study of plasmolysis in epidermal peels.
4. Test for the presence of Sugar, Starch, Proteins and Fats.
5. Study of the specimens/slides/models and identification with reasons - Bacteria, Spirogyra, Rhizopus, , yeast and one lichen.
6. Study of specimens/slides/models and identification with reasons - Hydra, Ascaris, , Shark, Rohu, Frog, Lizard, Pigeon and Rabbit.
7. Study of mitosis in onion root tip cells and animals cells (grasshopper) from permanent slides.
8. Study of different modifications in roots, stems and leaves.


Subject Teacher :


Head Master (BSSS)

SUMMER HOLIDAY ASSIGNMENT -2018

XI MATHEMATICS

RSS

TRIGONOMETRIC FUNCTIONS

1) Find the values of the following:

(i) $\tan \frac{19\pi}{3}$ (ii) $\sin \frac{-11\pi}{3}$ (iii) $\cot \frac{-15\pi}{4}$ (iv) $\operatorname{cosec} \frac{-19\pi}{3}$ (v) $\sin(-330^\circ)$

2) Prove that, $\cos 20^\circ \cos 40^\circ \cos 60^\circ \cos 80^\circ = \frac{1}{16}$

3) Prove that, $\cos^2 x + \cos^2 \left(x + \frac{\pi}{3}\right) + \cos^2 \left(x - \frac{\pi}{3}\right) = \frac{3}{2}$

4) Prove that: $\frac{\sin x \sin 2x + \sin 3x \sin 6x}{\sin x \cos 2x + \sin 3x \cos 6x} = \tan 5x$

5) Prove that: (i) $\frac{\cos 11^\circ + \sin 11^\circ}{\cos 11^\circ - \sin 11^\circ} = \tan 56^\circ$ (ii) $\cos 6x = 32\cos^6 x - 48\cos^4 x + 18\cos^2 x - 1$

6) Prove that: (i) $\frac{\sin 5x - 2\sin 3x + \sin x}{\cos 5x - \cos x} = \tan x$ (ii) $\frac{\sin A + \sin 3A + \sin 5A + \sin 7A}{\cos A + \cos 3A + \cos 5A + \cos 7A} = \tan 4A$

7) Prove that: (i) $\frac{\sin 11A \sin A + \sin 7A \sin 3A}{\cos 11A \cos A + \cos 7A \cos 3A} = \tan 8A$ (ii) $\frac{\sin 5A - 2\sin 3A + \sin A}{\cos 5A - \cos A} = \tan A$

8) Find the principal solution of the following: (i) $\sin x = \frac{1}{2}$ (ii) $\cos x = \frac{-1}{2}$ (iii) $\tan x = -\sqrt{3}$

(iv) $\cot x = \frac{1}{\sqrt{3}}$ (v) $\operatorname{cosec} x = -\sqrt{2}$ (vi) $\sec x = -\frac{2}{\sqrt{3}}$ (vii) $\sin x = -\frac{\sqrt{3}}{2}$ (viii) $\tan x = -1$

9) Solve the following trigonometric equations:

(i) $\cos^2 x + 3\sin x = 0$ 2(ii) $\cos x - \cos 2x + \cos 3x - \cos 4x = 0$ (iii) $\sin x = \tan x$

(iv) $2\sin^2 x + \sin^2 2x = 2$ (v) $2\tan x - \cot x = -1$ (vi) $\cos 3x = \sin 2x$

10) If $\tan x = \frac{3}{4}$ and x lies in the 3rd quadrant, find the values of $\sin \frac{x}{2}$, $\cos \frac{x}{2}$ and $\tan \frac{x}{2}$.

11) Prove that, $\sqrt{2 + \sqrt{2 + 2\cos 4x}} = 2\cos x, 0 < x < \frac{\pi}{4}$

12) Evaluate: $\sin \frac{7\pi}{12} \cos \frac{\pi}{4} - \cos \frac{7\pi}{12} \sin \frac{\pi}{4}$

13) Convert $40^\circ 21'$ and $5^\circ 37' 30''$ into radian measure.

COMPLEX NUMBERS & QUADRATIC EQUATIONS

1) For complex number z, z_1, z_2 , prove each of the following:

$$(i) \overline{z_1 + z_2} = \overline{z_1} + \overline{z_2} \quad (ii) \overline{z_1 z_2} = \overline{z_1} \cdot \overline{z_2} \quad (iii) z \cdot \overline{z} = |z|^2 \quad (iv) z + \overline{z} = 2\operatorname{Re}(z)$$

2) Find the magnitude and conjugate of the number $\left(\frac{1}{1-4i} - \frac{2}{1+i}\right) \left(\frac{3-4i}{5+i}\right)$

3) Write the complex number $\frac{1+7i}{(2-i)^2}$ in the polar form.

4) Find the square roots of each of the following:

(i) $-16 - 30i$ (ii) $12 - 5i$ (iii) $-7 + 24i$ (iv) $-2 - 2\sqrt{3}i$ (v) $8 - 5i$ (vi) $\frac{2+3i}{5-4i} + \frac{2-3i}{5+4i}$

6) Find the modulus and the argument of the following complex numbers; hence express them in polar form.

(i) $4\sqrt{3} + 4i$ (ii) $\frac{1+2i}{1-(1-i)^2}$ (iii) $\frac{5}{2}(\cos 30^\circ + i \sin 30^\circ)$ (iv) $-\sqrt{3} - i$ (v) $\frac{1+3i}{1-2i}$

7) Solve the following equations.

(i) $3x^2 - 7x + 5 = 0$ (ii) $ix^2 - 4x - 4i = 0$ (iii) $x^2 + 20ix + 21 = 0$

(iv) $x^2 - (3\sqrt{2} + 2i) + 6\sqrt{2}i = 0$ (v) $2x^2 + ix^2 - 2i = (5-i)x - 2$

8) For what value of θ , $\frac{3+2i \sin \theta}{1-2i \sin \theta}$ is purely real & purely imaginary.

SETS RELATIONS AND FUNCTIONS

1) If $A = \{x : x = 2n + 1, n \leq 6, n \in N\}$, $B = \{x : x = 3n - 2, n \leq 3, n \in N\}$, then prove that

$$(A \cup B)' = A' \cap B' \quad \text{and} \quad (A \cap B)' = A' \cup B', \quad U = \{x : x \in N, x \leq 15\}$$

2) Let A and B be sets. If $A \cap X = B \cap X = \emptyset$ and $A \cup X = B \cup X$ for some set X , show that $A = B$.

3) In a town of 10,000 families, it was found that 40% families buy newspaper A, 20% families buy newspaper B and 10% families buy newspaper C. 5% buy A and B, 3% buy B and C, 4% buy A and C. If 2% buy all three, find the number of families which buy (i) A only (ii) B only (iii) none of three.

4) In a class of 60 students, 23 play Hockey, 15 play Basketball and 20 play Cricket. 7 play Hockey and Basketball, 5 play Cricket and Basketball, 4 play Hockey and Cricket and 15 do not play any of these games. Find: (i) How many play all three games? (ii) How many play Hockey but not Cricket? (iii) How many play Hockey and Cricket but not Basketball?

5) Let A , B and C be three sets such that $A \cup B = A \cup C$ and $A \cap B = A \cap C$, show that $B = C$.

6) Find domain and range of the real function $f(x)$ defined by $f(x) = \begin{cases} 1-x, & x < 0 \\ 1, & x = 0 \\ x+1, & x > 0 \end{cases}$ and draw its graph.

7) Find the domain and range of the following functions:

(i) $f(x) = \frac{x^2 + 2x + 1}{x^2 - 8x + 12}$ (ii) $\frac{1}{\sqrt{x-4}}$ (iii) $\sqrt{x^2 - 6x + 8}$ (iv) $\frac{x+3}{|x+4|}$ (v) $\sqrt{9 - x^2}$

(vi) $f(x) = \begin{cases} x + 7 & \text{if } -3 \leq x \leq 5 \\ x^2 & \text{if } 5 \leq x < 7 \\ 6 - 2x & \text{if } x \geq 7 \end{cases}$

8) If $A = \{1,2\}$, $B = \{1,2,3\}$, $C = \{1,5,7\}$, $D = \{2,4,7\}$, then verify that:

(i) $(A \times B) \cap (C \times D) = (A \cap C) \times (B \cap D)$ (ii) $(A \times B) \cup (C \times D) \subseteq (A \cup C) \times (B \cup D)$

9) Let set A and B be two sets such that $A \times B$ consists 6 elements. If three elements are $(1, 4)$,

$(2, 6)$, $(3, 6)$, find $A \times B$ and $B \times A$.

10) If $A = \{-1, 1\}$, find $A \times A \times A$.

11) In a group of 50 people, 30 like to play cricket, 25 like to play football and 32 like to play hockey. Assume that each one likes to play at least one of the three games. If 15 play cricket & football, 11 football & hockey, 18 cricket & hockey, then

(i) How many like all three games?

(ii) How many like only football?

(iii) How many like only hockey?

11) Show that: $(A \cup B) - (A \cap B) = (A - B) \cup (B - A)$

12) If $P(A) = P(B)$, show that $A = B$.

13) If $U = \{1,2,3,4,5,6,7,8,9\}$, $A = \{2,4,6,8\}$ and $B = \{2,3,5,7\}$, verify that:

$$(A \cup B)^c = A^c \cap B^c \quad \text{and} \quad (A \cap B)^c = A^c \cup B^c$$

14) A class has 175 students. The following is the description showing the number of students studying one or more of the following subjects in the class. Mathematics 100, Physics 70, Chemistry 46, Maths & Physics 30, Maths & Chemistry 28, Physics & Chemistry 23, all three

subjects 18. Find: (i) The number of students who have not offered any of these three subjects.
(ii) The number of students who enrolled in Mathematics alone, Physics alone and Chemistry alone.

15) Let $A = \{1,2,4\}$, $B = \{3,5,7\}$ and $C = \{5,7,9\}$, verify that: $AX(B \cap C) = (AXB) \cap (AXC)$

16) In a school, out of 100 students, 15 like reading newspapers only, 12 like learning computers only and 8 like watching movies on TV in the spare time, 40 like reading newspapers and watching movies, 20 like learning computers and watching movies, 10 like reading newspapers and learning computer, 65 like watching movies on TV. Draw a Venn diagram; hence evaluate the number of students who (a) like reading newspapers, (b) like learning computers, (c) Don't like any of three activities. Which value do you get from above information?

17) Find the general solutions of $3\sin^2x + 2\sqrt{3}\sin x \cos x - 3\cos^2x = 0$

18) Find the value of $2\sin^2\frac{\pi}{6} + \operatorname{Cosec}^2\frac{7\pi}{6} \cos^2\frac{\pi}{3}$

19) Prove that: $\tan 56^\circ = \frac{\cos 11^\circ + \sin 11^\circ}{\cos 11^\circ - \sin 11^\circ}$

LINEAR INEQUALITIES

1) A solution of 8% boric acid is to be diluted by adding a 2% boric acid solution to it. The resulting mixture is to be more than 4% but less than 6% boric acid. If we have 640 liters of 8% solution, how many liters of the 2% solution will have to be added?

2) Solve the system of inequalities: $\frac{x+3}{x-2} \leq 2$, $\frac{2x+5}{x+7} \geq 3$.

3) Solve graphically: $x + y \leq 4$; $3x + y \geq 4$; $x + 5y \geq 4$; $x \leq 3$; $y \leq 3$, $x \geq 0$, $y \geq 0$

4) Solve graphically, $3x - 4y + 12 \geq 0$, $2x - y + 2 \geq 0$, $2x + 3y - 1 \geq 0$, $x \leq 4$,

$$y \geq 2, x, y \geq 0$$

5) Solve graphically: $x + y \geq 1$, $7x + 9y \leq 63$, $x \leq 6$, $y \leq 5$, $x, y \geq 0$

INTERNATIONAL INDIAN SCHOOL, DAMMAM

HOLIDAY ASSIGNMENT- 2018-19

Boys Senior Secondary Section

CLASS : XI

SUBJECT : INFORMATICS PRACTICES

1. How is compiler different from interpreter?
2. What is MICR?
3. Differentiate between real time and time sharing operating systems?
4. Compare Packages and Utilities?
5. Define the terms Adware, Spyware.
6. Differentiate between Alternate Key and Candidate Key.
7. Compare CHAR and VARCHAR data types?
8.
 - a. Which property of palette ListBox is used to enter the list of items while working in NetBeans.
 - b. What is the difference between the use of JTextField and JPasswordField
 - c. Name the method to display a specified message in a dialog box.
9.

Write Java code that takes value for a number (n) in jTextField1 and cube (n*n*n) of it to be displayed in jTextField2.
10.
 - a. What is the function of a bus?
 - b. Differentiate between single user and multi user operating system.
 - c. what do you mean by BIOS ?
 - d. write any four safety measure you follow to protect your computer.
 - e. What is cyber crime? Give four examples.
 - f. Write one difference between virus and worms.
 - g. Name two UTILITY software .

11.

a. What will be the content of `jTextArea1` , `jTextField1` and `str1` after the execution of the following statements.

i. `jTextArea1.setText("WORK\t MORE\n GETMORE");`

ii. `int Num = 6;`
`Num = Num + 1;`
`if (Num > 5)`
`jTextField1.setText(Integer.toString(Num));`
`else`
`jTextField1.setText(Integer.toString(Num+5));`

iii. `String str1, str2;`
`str1 = " dear friend";`
`str2 ="Hello";`
`str1 = str2.concat(str1);`

12. Define DBMS.

13. What is primary key ? Explain with an example.

14.

Name the MySQL command for the following purpose:

- i. To delete only rows
- ii. To add a new column
- iii. To add a new rows
- iv. To change values in a data base.

15.

To create the following Table student

Name of the column	Type	size
Name	Char	20
Rollno	Integer	4
Class	Char	4
Dob	date	
