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KALKA PUBLIC SCHOOL ALAKNANDA



CLASS XII (Session 2026-2027)

Summer Holiday Homework - A Journey of Learning and Fun

Dear Students

As the summer holidays approach, I know many of you are looking forward to a well-deserved break. Summer is a time for relaxation, exploration, and making memories with family and friends. It's also a great opportunity to keep your minds active and engaged in fun and meaningful ways.

To help you stay on track and continue learning during the break, your teachers have prepared some summer holiday homework for you. This isn't meant to be a burden, but rather a way to explore topics that interest you, sharpen your skills, and perhaps even discover something new about yourself. Here are a few key things to remember about your summer homework:

**. *Balance Work and Play *Explore Your Interests*:
Connect with family and friends, *Be Creative*:**

Remember, the goal of summer homework is to keep you engaged and prepared for the upcoming school year. Have fun with it and enjoy your summer break. I look forward to hearing about your adventures and seeing the amazing work you create when we return to school.

Wishing you a fantastic summer filled with joy, learning, and new experiences!

Best Regards,

Dr Anju Mehrotra (Director Principal)





GENERAL INSTRUCTIONS:

- Homework must be done in a very neat and presentable manner. It will be assessed on the basis of neatness, handwriting, creativity, presentation and completion of all the questions & indexing of work. It will be part of internal assessment.
- Avoid cutting and overwriting.
- Creativity and Originality of work will be appreciated.
- Homework comprises of two parts .

PART-A SUBJECTIVE that includes assignment.

PART-B MULTIDISCIPLINARY PROJECT.

Read the instructions carefully under each Subject and submit it accordingly.

SUBMISSION OF HOLIDAY HOMEWORK : 6th July 2026



ENGLISH (101)

❖ **SEEKING SELF (NEP/MF/2020/2023)**

UNRAVEL THE ARTIST IN YOU- Learn a new skill like playing an instrument, mastering a skill of art like painting, crafting, a piece of music or dance.

❖ **GOOD MANNERS ARE THE KEY-** Respect your parents, grandparents and all elders. Use three magical words (Sorry, Please and Thank you) often. 'A little more courtesy goes a long way.'

Try to collect coins of appreciation from your elders for each value depicted in your daily behaviour.

❖ **LEARN TO BECOME A LITERARY ARTIST-**To become an artist of literature, the concerned should go through the selected subject in such a depth, that he/she should live in the world of characters as well in the world of the creators' mind. Let us read any book of our interest (fiction/non-fiction) and submit the book review attached along with the holiday homework.

- Converse in English with your parents, siblings & friends as it will improve your proficiency.
- Take small responsibilities in household chores.
- Physical fitness is an important aspect of life. A healthy mind stays in a healthy body. Do yoga & exercise regularly.
- Learn the school prayer and song.



- Plant a sapling, nurture it with love and watch it grow.
- Avoid heavy and oily food & intake fresh fruits and water to keep yourself hydrated and energetic.

SPECIFIC INSTRUCTIONS:

- Homework for each subject comprises of Two Parts-
(A) SUBJECTIVE that includes assignment
(B) PROJECT BASED
- Holiday Homework must be done in a very neat and presentable manner.
- Homework will be assessed on the basis of neatness, handwriting, creativity , presentation and completion of all the questions & indexing of work.
- Avoid cutting and overwriting.
- Creativity and Originality of work will be appreciated. You can take the help of your elders, if required.
- Read the instructions carefully under each Subject and submit it accordingly

SUBMISSION OF HOLIDAY HOMEWORK

The last date of submission of the homework is 6th July, 2026 and do all the activities/Project work as directed.

PART – A

Question 1: Water supply will be suspended for eight hours (10 am to 6 pm) on 20th of June for cleaning of the water tank. Write a notice in about 50 words advising the residents to store water for a day. You are Karan Kumar/Karuna Bajaj, Secretary, Janata Group Housing Society, Palam Vihar, Kurnool.

Question 2: You are Asma/Ashish, the head girl/boy of XYZ International school. Your school is soon going to publish the annual magazine next month. Write a notice for the notice board of your school inviting students to submit write-ups.

Question 3: Take two articles from newspaper and prepare 10 comprehension questions on each of them. Write the answers of the questions made (Paste the cutting of the articles in your notebook).

PART - B

**Prepare an individual board project for internal/ external assessment on any one of the given topics :
(A file has to be prepared)**

1. Life of children in slum area.

OR

The conditions of Child labour in my city

2. Psychological Analysis of Fear

3. The Human tendency to redeem oneself from dishonest ways

4. Contributions made by anonymous Indians to the Freedom Movement

5. Hero-worship and Youth

6. Role of Feminism in improving the Status of women locally and Globally

7. Pollution & environment: Role of the youth.

1. THE PROJECT – PORTFOLIO INCLUDES THE FOLLOWING:

I. Cover Page – Title of Project

II. School details & detail of students



- III. Statement of Purpose / objectives / goals.
- IV. Acknowledgement
- V. Certificate of completion under the guidance of the teacher.
- VI. Action Plan for the Project
- VII. Questionnaires for interview
- VIII. A 'Report' on the Topic opted for.
- IX. List of resources / bibliography

2. INCLUSIONS:

- I. Photographs that capture the positive learning experience of the student.
- II. Newspaper clippings/ articles must also be incorporated.

CHEMISTRY (043)

Instructions for submission:

- 1. The homework has to be done in Chemistry notebook.
- 2. The project has to be submitted in a separate file after summer vacations.

PART- A

- 1. The conductivity of 0.20 M KCl at 298K is 0.025 S/CM. Calculate its molar conductivity.
- 2. Zinc rod is dipped in 0.1M solution of ZnSO₄. The salt is 95% dissociated at this dilution at 298K. Calculate the electrode potential. [given $E^{\circ} \text{Zn}^{2+} / \text{Zn} = -0.76 \text{ V}$]
- 3. Two metals A and B have reduction potential value of -0.25V and +0.80V respectively.
Which of these will liberate hydrogen gas from dilute H₂SO₄ ?
- 4. What would happen if the protective tin coating over an iron bucket is broken in some places?
- 5. State Kohlrausch law of independent migration of ions. Write an expression for the molar conductivity of acetic acid at infinite dilution accordingly to Kohlrausch law
- 6. Define molar conductivity of a solution and explain how molar conductivity changes with change in concentration of solution for a weak and a strong electrolyte
- 7. The resistance of a conductivity cell containing 0.001 M KCl solution at 298 K is 1500 ohm. What is the cell constant if the conductivity of 0.001 M KCl solute at 298 K is $0.146 \times 10^{-3} \text{ S cm}^{-1}$
- 8. Calculate the osmotic pressure of a solution obtained by mixing 100cm³ of 0.25M solution of urea and 100 cm³ of 0.1m solution of cane sugar at 293 K [R= 0.082Latmmol⁻¹k⁻¹]
- 9. A solution of 3.800 g of sulphur in 100 g of CS₂ (boiling point=46.300 C. What is the formula of sulphur molecule in this solution. (Atomic mass of Sulphur =32 g mol⁻¹)and kbfor CS₂ =2.40Kkgmol⁻¹



10. The freezing point of Pure nitrobenzene is 278.8 K . When 2.5 g of unknown substance is dissolved in 100g of nitrobenzene. The freezing point of solution is found to be 276.8K. If the freezing point depression constant of nitrobenzene is K_f mol⁻¹, What is the molar mass of unknown substance?

11. The vapour pressure of a dilute aqueous solution of glucose (C₆H₁₂O₆) is 750 mm of mercury at 373 K. Calculate (i) molality and (ii) mole fraction of the solute.

12. To 500 cm³ of water, 3.0×10^{-3} kg of acetic acid is added. If 23% of acetic acid is dissociated, what will be depression in freezing point? K_f and density of water are 1.86 K kg / mol and 0.997 g / cm³ respectively.

Q 13 The Solubility of Ba(OH)₂.8H₂O in water at 288 K is 5.6 per 100 g of water. What is the molality of the hydroxide ions in saturated solution of Ba (OH)₂.8H₂O at 288 K? [At. Mass of Ba = 137, O = 16, H = 1]

Q14 Write Nernst Equation. Calculate E.M.F. of the following cell at 25°C Pt(s)/Br₂(l)/Br⁻(0.010 M) || H⁺(0.030 M)/H₂(g)(1 bar)/Pt (s) [Given : $E^\circ_{Br_2/Br^-} = +1.08$ V]

Q 15. a) Calculate electrode potential of electrode dipped in a 0.1 M solution of silver nitrate at 298 K assuming silver nitrate to be completely dissociated. The standard electrode potential of Ag/Ag⁺ is 0.80 V at 298 K

b) At what concentration of silver ions will this electrode have a potential of zero volt?

PART – B

INVESTIGATORY PROJECT WORK

Decide the topic for the investigatory project from the practical book or from the internet using various search engines. Collect information regarding it and prepare a report of the same.

Title Page-This is the first page carry the following information

- (i) Title/Aim of the project
- (ii) Name of the student with class and Section.

CERTIFICATE

ACKNOWLEDGEMENT

PURPOSE OF EXPERIMENT

- Table of contents- This page records the content of the project report preferably with corresponding page numbers.
- Introduction and review-This provides a brief history of the project including chronological order of previous work done in this direction.
- Experimental-This section includes the following information:

Apparatus/Equipment

- (i) Procedure/Experimental methodology
- (ii) Data/Observation (With proper units of all the quantities)
- (iii) Calculation (Use the correct formulae for the calculations)
- (iv) Graphs/Diagrams/Charts
- (v) Results and conclusion

- BIBLIOGRAPHY- On this page a list of Books, Periodicals, and Review articles, Research work (if any) related to the present work is to be reported.

For e.g. to check the hardness of different samples of water collect information as to the type of water available and how the hardness can be checked chemically.



PHYSICS (042)

Note: Solve the following in Physics notebook

PART- A

Q 1. Two point charges 1C and -1C are placed 5mm away from each other forming a dipole.

What will be the field intensity at a point 15 cm away from the dipole on its axis?

- a) $1.66 \times 10^9 \text{ N/C}$
- b) $2.66 \times 10^{16} \text{ N/C}$
- c) $3 \times 10^{18} \text{ N/C}$
- d) $1.4 \times 10^{16} \text{ N/C?}$

Q2. SI unit of permittivity of free space is

- (a) Farad
- (b) Weber
- (c) $\text{C}^2 \text{ N}^{-1} \text{ m}^{-2}$
- (d) $\text{C}^2 \text{ N}^{-1} \text{ m}^{-1}$

Q3. Two equally charged spheres attract each other. Now if they touch each other then they will

- a) Attract each other with the same amount of force
- b) Repel each other
- c) Attract each other with less amount of force
- d) Don't attract or repel

Q4. In a parallel plate capacitor, the capacitance increases from 100 F to 800 F, on introducing a dielectric medium between the plates. What is the dielectric constant of the medium?

- a) 0.125
- b) 125
- c) 80
- d) 8

Q5. If A and B are two equipotential surfaces around a positive point charge q, what will happen if we place another point charge +Q between A and B?

- a) It will remain stationary b) It will move from B to A
- c) It will move from A to B d) It will rotate in a circular path

Q6. Three capacitors are connected in the shape of a triangle ABC as shown below. A voltage of 4V is applied between B and C. Calculate the voltage between A and C.

- a) 4V b) 6V c) 2V d) 10V



Q7. Find out the correct expression of the capacitance of a parallel plate capacitor where 'A' is the area of the plates, 'd' is the distance between the plates and ' ϵ_0 ' is the permittivity of the medium.

- a) $A\epsilon_0/d$
- a) Ad/ϵ_0
- b) $d\epsilon_0/A$
- c) $A/\epsilon_0 d$

Q8. In which type of molecule positive and negative charges does not coincide with each other?

- a) Isentropic b)

Equipotential

- c) Polar d) Non-polar

Select the correct statements from the following.

Q9. I. The electric field due to a charge outside the Gaussian surface contributes zero net flux through the surface.

II. Total flux linked with a closed body, not enclosing any charge will be zero.

III. Total electric flux, if a dipole is enclosed by a surface is zero.

- (a) I and II (b) II and III
- (c) I and III (d) I, II and III

Q10. Which among the following is false about electric field lines?

- a) They are continuous
- b) They attract each other
- c) They remain parallel in a uniform electric field
- d) They diverge from positive charge

Q11. Electric dipole moment is a quantity.

Q12. Net Electric field inside the charged spherical shell is

Q13. Number of electrons in 1 Coulomb charge is

Q14 A sphere of radius 100 cm has a charge of $(2\pi/3)\mu\text{C}$. Its surface density of charge is .

Q15. Electric field is always to the equipotential surface.

CASE STUDY BASED QUESTIONS

The parallel plate capacitor consists of two parallel metal plates X and Y each of area A, separated by a

distance d, having a surface charge density σ as shown in figure. The medium between the plates is air. A charge +q is given to the plate X. It induces a charge -q on the upper surface of earthed plate Y. When the plates are very close to each other, the field is confined to the region between them. The electric lines of force starting from plate X and ending at the plate Y are parallel to each other and perpendicular to the plates. The capacitance is directly proportional to the area (A) of the plates and inversely proportional to their distance of separation (d). The capacitance (C) of the parallel plate capacitor is given by $C = \epsilon_0 A/d$. if the region between the



two plates is filled with dielectric like mica or oil. Its capacitance increased by ϵ_r times of the medium.

16. The potential difference between the two plates of a parallel plate capacitor, if Q is magnitude of charge on each plate of area A separated by a distance d is

- (a) $Qd/(\epsilon_0 A)$ (b) $d\epsilon_0 /AQ$
(c) $Ad/(\epsilon_0 Q)$ (d) $QA/d\epsilon_0$

17. A capacitor is charged by a battery and the charging battery is disconnected and a dielectric slab is inserted in it. Then for the capacitor

- (a) Charge remains constant (b) Charge increases
(c) Potential difference remains constant (d) Potential difference increases

18. A parallel plate capacitor has a capacitance of $10 \mu\text{F}$. If the distance between two plates is doubled then the new capacitance will be

- (a) $20 \mu\text{F}$ (b) $15 \mu\text{F}$ (c) $10 \mu\text{F}$ (d) $5 \mu\text{F}$

19. Capacitance of a parallel plate capacitor does not depend on:

- (a) Area of the plates (b) Type of metal used for plates
(c) Separating distance between the plates (d) Dielectric constant of the medium between the plates

20. A parallel plate air capacitor with no dielectric between the plates is connected to a constant voltage source. What happens to the capacitance if a dielectric of dielectric constant $k = 2$ is inserted between the plates?

- (a) Capacitance decreases (b) Capacitance increases by two times
(c) Capacitance remains unchanged (d) Insufficient data

Two statements are given –one labeled Assertion (A) and other labeled Reason (R). Select the correct answer to these questions from the options as given below.

- a) If both Assertion and Reason are true and Reason is correct explanation of Assertion.
b) If both Assertion and Reason are true but Reason is not the correct explanation of Assertion.
c) If Assertion is true but Reason is false.
d) If both Assertion and Reason are false.

Q21. Assertion : Electric lines of field cross each other.

Reason : Electric field at a point superimpose to give one resultant electric field. Q22. Assertion : Electric field inside a conductor is zero.

Reason: The potential at all the points inside a conductor is same.

Q23. Assertion : A dielectric is inserted between the plates of a battery connected capacitor. The energy of the capacitor increases.

Reason : Energy of the capacitor, $U=CV^2/2$



Q24. Assertion: Electron move away from a region of lower potential to a region of higher potential. Reason: An electron has a negative charge.

Q25. Assertion : The property that the force with which two charges attract or repel each other are not affected by the presence of a third charge.

Reason : Force on any charge due to a number of other charge is the vector sum of all the forces on that charge due to other charges, taken one at a time.

Q.26 Write three experiment in your practical file:

I. To determine resistivity two/three wires by plotting graph for potential difference versus current.

II. To find the resistance of given wire /standard resistance using meter bridge.

III. To verify the law of combination (series) of resistance using a meter bridge.

PART –B

Q.27 Make a investigatory project on any of the topic given below

- A) Current electricity
- b) Electromagnetic induction
- c) Faraday's law
- d) Reflection and Refraction theory
- e) Transformer
- f) Generator
- g) Rectifier
- h) LC oscillation
- i) AI and Robotics

MATHEMATICS (041)

TASK-1

Art Integrated Project: Relations and Functions in Real Life through Art

Topic: Relations and Functions

Integrated with: Visual Art (Indian Folk Art like Madhubani, Warli, Gond, etc.)

Project Title:

"Mapping Real Life through Art – A Visual Exploration of Relations and Functions"

Objective:

To creatively understand the concept of relations and functions by connecting them with real-life examples and representing them through Indian art.

Project Description:

Concepts to Cover:

- Relations (ordered pairs, domain, range)



- Functions (one-one, onto, many-one)
- Types of functions (constant, linear, identity, modulus, etc.)

Real Life Example:

- Set A: Students
- Set B: Their favorite subject

Create a mapping diagram showing relation and function Use Warli /Madhubani figures to represent students and subjects

Creative Twist:

- Make a Venn diagram or arrow diagram using traditional art elements
- Highlight the difference between relation and function visually

Suggested Art Styles:

- Madhubani: For colorful and detailed mappings
- Warli: For simple stick figures and scenes
- Gond: For abstract and nature-based representation

TASK-2

COMPLETION OF THE GIVEN ASSIGNMENT

ASSIGNMENT

Q-1 If R_1 and R_2 are equivalence relations on a set A , show that $R_1 \cap R_2$ is also an equivalence relation.

Q-2 Classify the following function as injective, surjective or bijective: $f: Q - \{3\} \rightarrow Q$ defined by $f(x) = \frac{2x+3}{x-3}$

Q-3 A function $f: [-4, 4] \rightarrow [0, 4]$ is given by $f(x) = \sqrt{16 - x^2}$. Show that f is an onto function but not a one one function. Further, find all the possible values of a for which $f(a) = \sqrt{7}$.

Q-4 Show that $f: (-\infty, 0) \rightarrow (-1, 0)$ defined by $f(x) = \frac{x}{1+|x|}$ is one -one and onto.

Q-5 Check whether a function $f(x): R \rightarrow [-\frac{1}{2}, \frac{1}{2}]$ defined as $f(x) = \frac{x}{1+x^2}$ is one-one and onto.

Q-6 Let R be the relation on the set Z of integers given by $R = \{(a, b): 2 \text{ divides } a - b\}$. Show that R is an equivalence relation . Write the equivalence class $[0]$.

Q-7 Give an example of a map

- 1) Which is one -one but not onto
- 2) Which is not one -one but onto
- 3) Which is neither one -one nor onto



Q-8 let $A = [-1, 1]$, then, discuss whether the following functions defined on A are one-one onto or bijective.

1) $f(x) = \frac{x}{2}$

2) $g(x) = |x|$

3) $h(x) = x|x|$

4) $k(x) = x^2$

Q-9 Evaluate:

1) $\sin^{-1} \sin\left(\frac{\pi}{4}\right)$

2) $\sin^{-1} \sin\left(\frac{17\pi}{8}\right)$

3) $\sin^{-1} \sin\left(-\frac{17\pi}{8}\right)$

4) $\sin^{-1} \tan\left(\frac{5\pi}{4}\right)$

5) $\sin^{-1} \cos\left(\frac{43\pi}{5}\right)$

6) $\csc^{-1} \csc\left(-\frac{14\pi}{6}\right)$

7) $\sec^{-1} \sec\left(-\frac{8\pi}{3}\right)$

8) $\sin\left[\frac{1}{2} \cos^{-1} \frac{4}{5}\right]$

Q-10 Show that: $\tan\left[\frac{1}{2} \sin^{-1} \frac{3}{4}\right] = \frac{4-\sqrt{7}}{3}$.

Q-11 Prove that: $2 \tan^{-1}\left(\sqrt{\frac{a-b}{a+b}} \tan \frac{x}{2}\right) = \cos^{-1}\left(\frac{a \cos x + b}{a + b \cos x}\right)$

Q-12 Simplify: $\cos^{-1}\left[\frac{\sin x + \cos x}{\sqrt{2}}\right], \frac{5\pi}{4} < x < \frac{9\pi}{4}$.

Q-13 Solve: $\sin[2 \cos^{-1} \cot(2 \tan^{-1} x)] = 0$

Q-14 Solve: $\cos(\tan^{-1} x) = \sin(\cot^{-1} \frac{3}{4})$

Q-15 Construct a 2×2 matrix whose elements a_{ij} are given by $a_{ij} = \begin{cases} \frac{|-3i+j|}{2} & \text{if } i \neq j \\ (i+j)^2 & \text{if } i = j \end{cases}$

Q-16 Find the values of a, b, c and d , if $3 \begin{bmatrix} a & b \\ c & d \end{bmatrix} = \begin{bmatrix} a & 6 \\ -1 & 2d \end{bmatrix} + \begin{bmatrix} 4 & a+b \\ c+d & 3 \end{bmatrix}$

Q-17 If $A = \begin{bmatrix} 0 & 0 \\ 2 & 0 \end{bmatrix}$, then find

1) A^{20}

2) A^{35}

Q-18 If $A = \begin{bmatrix} 2 & 3 & 1 \\ -1 & 0 & 2 \\ 1 & 1 & -1 \end{bmatrix}$ and $f(x) = x^2 - 5x + 7$. Then find $f(A)$.



Q-19 If $A = \begin{bmatrix} x & 5 & 2 \\ 2 & y & 3 \\ 1 & 1 & z \end{bmatrix}$, $xyz = 80$, $3x + 2y + 10z = 20$, then find $A(\text{adj}A)$.

Q-20 Given matrices A and B such that $A = \begin{bmatrix} 1 & -1 & 0 \\ 2 & 3 & 4 \\ 0 & 1 & 2 \end{bmatrix}$ and $B = \begin{bmatrix} 2 & 2 & -4 \\ -4 & 2 & -4 \\ 2 & -1 & 5 \end{bmatrix}$, find AB.

using this result, solve the following system of equations.

Q-21 Determine the product $\begin{bmatrix} -4 & 4 & 4 \\ -7 & 1 & 3 \\ 5 & -3 & -1 \end{bmatrix} \begin{bmatrix} 1 & -1 & 1 \\ 1 & -2 & -2 \\ 2 & 1 & 3 \end{bmatrix}$ and use it to solve the system of equations $x - y + z = 4$, $x - 2y - 2z = 9$, $2x + y + 3z = 1$.

Q-22 If there are two values of a which makes determinant, $\Delta = \begin{vmatrix} 1 & -2 & 5 \\ 2 & a & -1 \\ 0 & 4 & 2a \end{vmatrix} = 86$, then the sum of these numbers is?

Q-23 If $A = \begin{bmatrix} a & b \\ c & \frac{1+bc}{a} \end{bmatrix}$, then prove that $aA^{-1} = (a^2 + bc + 1)I - aA$.

Q-24 If $A = \begin{bmatrix} 1 & \tan\alpha \\ -\tan\alpha & 1 \end{bmatrix}$, then prove that $A^T A^{-1} = \begin{bmatrix} \cos 2\alpha & -\sin 2\alpha \\ \sin 2\alpha & \cos 2\alpha \end{bmatrix}$.

Q-25 If $A = \begin{bmatrix} 1 & 3 & 2 \\ 2 & 0 & -1 \\ 1 & 2 & 3 \end{bmatrix}$, then prove that A satisfies $A^3 - 4A^2 - 3A + 11I = 0$.

BIOLOGY (044)

Q1. PROJECT

Research on any relevant topic on biology using newspapers, internet, going for a trek or nature walk Choose the area and submit the synopsis after vacations as per CBSE guidelines.

Q2 Revise UNIT1 REPRODUCTION and attempt Ncert exemplar questions as discussed.

Q3.ART INTEGRATED.

complete practical file for biology for 6 practicals' as completed in school.

Q4 VALUE BASED / COMMUNITY SERVICE (20 hrs)

Being a representative of WHO in your area explore the awareness about geriatrics in your area. Try to give a certificate from any NGO in your Neighbourhood.



FOOD NUTRITION AND DIETETICS (834)

Instructions: The below mentioned activities are to be conducted and recorded in the practical file.

PART – A

ACTIVITY 1: To identify the economic consequences of malnutrition and to learn about the strategies for improving the nutritional status of communities.

ACTIVITY 2: Critically evaluate the factors influencing the selection of food such as culture, family food practices, media and peer group, availability of foods, purchasing power, individual preferences, and health.

ACTIVITY 3: Prepare one preserved product and also prepare a suitable food label for it.

PART – B

Complete the introduction, demographic information, and methodology on the assigned research topic.

E.G (046)

Q1. Draw to scale 1:1, the Front View, Top view and Side View of the following

- i. a Hexagonal Nut
- ii. a Square Nut

Specification M30 and axis perpendicular to HP.

Q2. Draw to scale 1:1, the Front View and Side View of the following

- i. a Hexagonal Headed Bolt
- ii. a Square Headed Bolt

Specification M30 and axis parallel to both HP and VP

Q3. Draw to scale 1:1, the Front View and Top View of the following

- i. All 4 type of Studs
- ii. All 5 types of Screws
- iii. All 4 types of Rivets

Specification M30 and axis perpendicular to HP

Q4. Draw the following on the CollabCAD software and take prints on A4 sized paper

- i. Triangular, Square, Pentagonal and Hexagonal **Pyramids**
- ii. Triangular, Square, Pentagonal and Hexagonal **Prisms**



COMPUTER SCIENCE (O83)

PART A

Submit the **synopsis of your Project** on any topic for the board practical examination.
Make its layout and use DFD's and FLOW charts.

Guidelines for Synopsis:

- Programming language: Python and MySql
- Front end is Python and Back end is MYSql.
- Project Report must have a Title page, Acknowledgement page, Index pages and Bibliography page.
- Project Report should be prepared in any Word processor (MS Word) software.
- Project Report must have Header and Footer. Name of the Project topic should reflect in Header and Page number should be in footer.

PART B

With reference to the following relations (tables) EMPLOYEE and JOB complete all the queries in your practical file.

Create following tables EMPLOYEE and JOB such that Empno and Sno are not null and unique, name is never blank, Area and Native place is valid, hobby, dept is not empty.

Table: EMPLOYEE

Empno	Name	Dobirth	Native_place	Hobby
123	AMIT	23-Jan-65	Delhi	Music
127	MANOJ	12-Dec-76	Mumbai	Writing
124	ABHAI	11-Aug-75	Allahabad	Music
125	VINOD	4-Apr-77	Delhi	Sports
128	ABHAY	10-Mar-74	Mumbai	Gardening
129	RAMESH	28-Oct-81	Pune	Sports

Table: JOB

Sno	Area	App_date	Salary	Retd_date	Dept
123	Agra	25-Jan-06	5000	25-Jan-26	Marketing
127	Mathura	22-Dec-06	6000	22-Dec-26	Finance
124	Agra	19-Aug-07	5500	19-Aug-27	Marketing



125	Delhi	14-Apr-04	8500	14-Apr-18	Sales
128	Pune	3/13/2008	7500	13-mar-	Sales

1. Show empno, name and salary of those who have Sports as hobby.
2. Show name of the eldest employee.
3. Show number of employee area wise.
4. Show youngest employees from each Native place.
5. Show Sno, name, hobby and salary in descending order of salary.
6. Show the hobbies of those whose name pronounces as 'Abhay'.
7. Show the appointment date and native place of those whose name starts with 'A' or ends in 'd'.
8. Show the salary expense with suitable column heading of those who shall retire after 20-jan- 2006.
9. Show an additional burden on the company in case the salary of employees having a hobby as sports, is increased by 10%.
10. Show the hobby of which there are 2 or more employees.
11. Show how many employee shall retire today if maximum length of service is 20 years.
12. Show those employee name and date of birth who have served more than 17 years as on date.
13. Show names of those who earn more than all of the employees of Sales dept.
14. Show names of those who earn more than at least one of the employees of Marketing dept.
15. Increase salary of the employees by 5 % of their present salary with hobby as Music or they have completed atleast 3 years of service.
16. Show the maximum salary and the hobby of employee.
17. Count the number of employees in each department.
18. To display the maximum, minimum, sum and average salary of each department.
19. To display ename in lower case and job in upper case.
20. To display employees name, salary and Area of all the employees working in Agra
21. Add a new tuple(row) in the table essentially with hobby as Music.
22. Insert a new column email in job table
23. Create a table with values of columns empno, name, and hobby.
24. Erase the records of employee from job table whose hobby is not Sports.
25. Remove the table EMPLOYEE.



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