

D.A.V. CENTENARY PUBLIC SCHOOL

SECTOR-6, BAHADURGARH

Session (2026-27) Class- XII SCIENCE



“A vacation helps to relieve stress and boredom, gives us a change of scenery, provides us with adventure, and helps to bring us closer to the people in our lives.”

By :- E. S. Woods

Dear Students,

Warm Wishes!

We pray and wish the best of health and cheerful times to you. Vacations is a time that we all eagerly wait for. We all make plans to enjoy, to relax and to empower ourselves during these days. This summer vacation the holiday homework is designed for you all to achieve the motto of " Fun and Learn".

The activity based assignments will foster curiosity, develop creativity and instill the joy of learning among you all. So, make sure you extract the maximum benefit out of these holidays.

Summer Tips:

- ❖ **Start your day with gratitude and prayers.**
- ❖ **Exercise daily and practice meditation.**
- ❖ **Assist your mother in household chores.**
- ❖ **Pledge for "Eat Right"- Less Sugar, Less Oil and Less Salt**
- ❖ **Wash hands frequently, especially before and after meals**
- ❖ **Read newspaper daily and stay updated with current affairs.**
- ❖ **Water the plants and rejoice the beauty of nature**

English

1)Character Diary Writing

Write diary entries from the perspective of:

* Saheb (Lost Spring) * Charley (The Third Level) * Franz (The Last Lesson)

2)Quote Collection File

Collect 15–20 important quotes from the chapters and poems with:

*Speaker/name * meaning *theme connection

3(Book Review/ Movie Review

Watch any good movie /Read any short novel/storybook, and write:

* summary/ plot * favourite character * moral/theme * personal opinion

4)Creative Writing Tasks:Alternative Ending

Rewrite the ending of: *The Third Level *The Tiger King

5)Interview Activity:

Interview grandparents/elders on:

“How life has changed over time” Then write an article in 150–200 words.

6)Vocabulary Journal

Make a mini dictionary of: 5 new words weekly: meaning, synonym & sentence formation

7)RTC (Reference to Context)

Practice Prepare 2 RTCs from each poem (done in class) with answers.

8) Express Yourself

Write a paragraph in about 150 to 200 words on any one of the topics given below:

“My dream career”

“If I could travel through time”

“A day without technology”

9) Write recapitulating points of all chapters done in literature in the form of:

Mind map/Flowchart/Web chart

10) Draft notice on the given topics:

a) Inter-house Debate competition

b) Annual Sports Meet

c) Cultural Benefit Show

11) Write a letter to the editor on the following issues:

a) Problem of Inflation

b) Proliferation of Coaching Centres

Maths

1. Let $A = \{1, 2, 3, 4\}$. Then how many symmetric relations will be there on set A?
2. For real numbers x and y , define xRy iff $x - y + \sqrt{2}$ is an irrational number. Check this relation for reflexive, symmetric and transitive.
3. If N denotes the set of natural number and R is the relation on $N \times N$ defined by $(a, b) R (c, d)$ if $ad(b + c) = bc(a + d)$. show that R is equivalence relation.
4. Prove that the function $f : N \rightarrow N$ defined by $f(x) = x^2 + x + 1$ is one-one but not in-to.
5. Let $f : [2, \infty) \rightarrow R$ be the function defined by $f(x) = x^2 - 4x + 5$, then find the range of f .
6. The domain of $f(x) = \cos^{-1}(x^2 - 4)$?
7. If $\cos^{-1} \alpha + \cos^{-1} \beta + \cos^{-1} \gamma = 3\pi$, then find value of $\alpha(\beta + \gamma) + \beta(\gamma + \alpha) + \gamma(\alpha + \beta)$
8. What is one branch of $\cos^{-1} x$ other than the principal value branch?
9. What is the range of $f(x) = \sin^{-1} x + \tan^{-1} x + \sec^{-1} x$
10. Evaluate : $\frac{\sqrt{a+2x}-\sqrt{3x}}{\sqrt{3a+x}-\sqrt{4x}}$.
11. $\frac{\tan x - \sin x}{\sin^3 x}$
12. (i) $\frac{\sqrt{3} \sin x - \cos x}{x - \pi/6}$ (ii) $\frac{1 + \cos 2x}{(\pi - 2x)^2}$
13. If the function f defined by $f(x) = \begin{cases} \frac{1 - \cos c \cos cx}{x \sin x}, & x \neq 0 \\ \frac{1}{2}, & x = 0 \end{cases}$

Is continuous at $x = 0$, then find value of c .

14. For what values of k is the following function continuous at $x = -\pi/6$

$$F(x) = \begin{cases} \frac{\sqrt{3} \sin x \cos x + \cos^2 x}{x + \frac{\pi}{6}}, & x \neq -\pi/6 \\ K, & x = -\pi/6. \end{cases}$$

15. If $f(x) = \frac{\sqrt{2} \cos x - 1}{\cot x - 1}$, $x \neq \pi/4$, find the value of $f(\pi/4)$ so that the function f become continuous at $x = \pi/4$.

16. If $y = (x + \sqrt{x^2 - 1})^m$, prove that $(x^2 - 1) (dy/dx)^2 = m^2 y^2$.

17. If $y\sqrt{1-x^2} + x\sqrt{1-y^2} = 1$, prove that $dy/dx = -\sqrt{\frac{1-y^2}{1-x^2}}$.

18. If $y = \sqrt{\cos \cos x + \sqrt{\cos \cos x + \sqrt{\cos \cos x + \dots \infty}}}$, prove that $(1-2y) dy/dx = \sin x$

19. Differentiate : (i) $\log_{\sin x} \cos x$ (ii) $\log_{x^2} \sin x$

20. Minimise : $Z = 3x + 5y$, subject to $x + 3y \geq 3$, $x + y \geq 2$, $x, y \geq 0$.

Chemistry

Q.1 Solve Ncert exemplar(MCQ) and intext questions of CH 1, 2, 6, 7

Q.2 Solve questions of above chapters from CBSE question paper of 2020 to 2025.

Q.3 Make an Investigatory project on any topic of your choice (first confirm your project from me).

Q.4 Make creative and attractive mind maps of all the chapters(1,6 & 7).

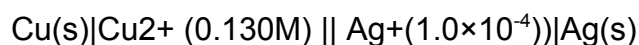
Q.5 Make a table of reagents used in organic chemistry.

Q.6 Make one working TLM or model related to subjective concept.

Electrochemistry

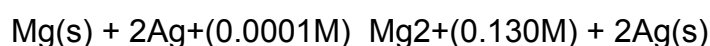
1. If E^\ominus for copper electrode is +0.34V, how will you calculate e.m.f. value when the solution in contact with it is 0.1M in copper ions? How does e.m.f. for copper electrode change when concentration of Cu^{2+} ion in the solution is decreased.

2. Write the Nernst equation and calculate the e.m.f. of the following cell at 298K:



Given: $E^\ominus(\text{Cu}^{2+}|\text{Cu}) = +0.34\text{V}$ and $E^\ominus(\text{Ag}^{+}|\text{Ag}) = +0.80\text{V}$

3. Represent the cell in which the following reaction take place:



Calculate its E if E^\ominus is 3.17V.

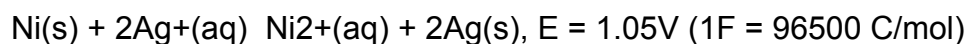
4. The EMF of cell, $\text{Zn}|\text{Zn}^{2+}(0.1\text{M})||\text{Cd}^{2+}|\text{Cd}$ has been found to be 0.3305V at 298K. Calculate the value of M_1 [$E^\ominus(\text{Zn}^{2+}|\text{Zn}) = -0.76\text{V}$, $E^\ominus(\text{Cd}^{2+}|\text{Cd}) = -0.40\text{V}$]

5. A cell contains two hydrogen electrodes. The negative electrode is in contact with a solution of 10^{-6}M hydrogen ions. The e.m.f. of the cell is 0.118V at 25°C. Calculate the concentration of hydrogen ions at the positive electrode.

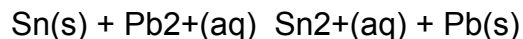
6. The standard reduction potential for $\text{Cu}^{2+}|\text{Cu}$ is +0.34V. Calculate the reduction potential at pH=14 for the above couple. K_{sp} of $\text{Cu}(\text{OH})_2$ is 1.0×10^{-19} .

7. The K_{sp} for AgCl at 298K is 1.0×10^{-10} . Calculate the electrode potential for Ag⁺|Ag electrode immersed in 1.0M KCl solution. Given $E_{0Ag^+|Ag} = 0.80V$.

8. Determine value of equilibrium constant (K_c) and ΔG^0 for the following reaction:



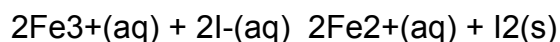
9. For the cell reaction:



$$E_{0Sn^{2+}|Sn} = -0.140, E_{0Pb^{2+}|Pb} = -0.126V$$

Calculate the ratio of concentration of Pb²⁺ to Sn²⁺ ion at which the cell reaction be reversed.

10. The cell in which the following reaction occur:



Has $E_{0cell} = 0.236V$ at 298K. Calculate the standard Gibbs energy and equilibrium constant of the cell reaction.

11. Calculate the molar conductivity of solution of MgCl₂ at infinite dilution given that molar ionic conductivities of $\lambda_0(Mg^{2+}) = 106.1 \text{ S cm}^2 \text{ mol}^{-1}$ and $\lambda_0(Cl^-) = 76.3 \text{ S cm}^2 \text{ mol}^{-1}$. 12. The molar conductivity at infinite dilution of Al₂(SO₄)₃ is $858 \text{ S cm}^2 \text{ mol}^{-1}$. Calculate molar ionic conductivity of Al³⁺ ion given that $\lambda_0(SO_4^{2-}) = 160 \text{ S cm}^2 \text{ mol}^{-1}$.

13. Conductivity of 0.00241 M acetic acid is $7.896 \times 10^{-5} \text{ S cm}^{-1}$. Calculate its molar conductivity and if Λ_0 for acetic acid is $390.5 \text{ S cm}^2 \text{ mol}^{-1}$. What is its dissociation constant?

14. The conductivity of 0.001028 mol/L acetic acid is $4.95 \times 10^{-5} \text{ S/cm}$. Calculate its dissociation constant if $\Lambda_0(CH_3COOH)$ is $390.5 \text{ S cm}^2 \text{ mol}^{-1}$.

15. 0.05 M NaOH solution offered a resistance of 31.6 ohm in a conductivity cell at 298 K. If the area of the plates of the conductivity cell is 3.8 cm^2 and distance between them is 1.4 cm, calculate the molar conductivity of sodium hydroxide solution.

16. Calculate the equivalent conductivity of 1M H₂SO₄ solution whose conductivity is $26 \times 10^{-2} \Omega^{-1} \text{ cm}^{-1}$

17. Resistance of a conductivity cell is filled with 0.1 M KCl solution is 100Ω . If the resistance of the same cell when filled with 0.02 M KCl solution is 520Ω . Calculate the conductivity and

molar conductivity of 0.02 M KCl solution. (The conductivity of 0.1 M KCl solution is 1.29 S cm^{-1}).

18. A conductivity cell when filled with 0.01M KCl has a resistance of 747.5Ω at 25°C . when the same cell was filled with an aqueous solution of 0.05M CaCl_2 solution the resistance was 876Ω .

Calculate (i) conductivity of solution

(ii) Molar conductivity of solution. [Conductivity of 0.01M KCl = 0.141 S/m]

19. A potential difference of 20V applied to the ends of column of 0.1M AgNO_3 solution, 4 cm in diameter and 12 cm in length gave a current of 0.20 amperes. Calculate (i) conductivity and (ii) Molar conductivity of solution.

20. The electrical resistance of a column of 0.05M NaOH solution of diameter 1 cm and length 50 cm is $5.55 \times 10^3 \Omega$. Calculate (i) resistivity (ii) conductivity (iii) molar conductivity

Physics

A. Solve all the NCERT and NCERT Exemplar questions of the chapter 1,2

and 3.

B. Compile a formula sheet covering all the chapters covered in class.

C. Prepare a short lecture on any one concept of Physics through a

practical demonstration/activity based on the theme "Learning by Doing" Students should explain the concept with the help of simple models,

experiments, or real-life applications to enhance conceptual understanding.

The presentation should include the working principle and practical

explanation of the chosen topic.

D. Solve the given assignment

1. Two identically-charged particles are fastened to the two ends of a spring of spring constant 100 N m^{-1} and natural length 10 cm. The system rests on a smooth horizontal table. If the charge on each particle is $2.0 \times 10^{-8} \text{ C}$, find the extension in the length of the spring. Assume that the extension is small as compared to the natural length. Justify this assumption after you

solve the problem.

2. A particle A with a charge of 2.0×10^{-6} C is held fixed on a horizontal table. A second charged particle of mass 80 g stays in equilibrium on the table at a distance of 10 cm from the first charge. The coefficient of friction

between the table and this second particle is $\mu = 0.2$. Find the range within which the charge of this second particle may lie.

3. A particle A with a charge of 2.0×10^{-6} C and a mass of 100 g is placed at the bottom of a smooth inclined plane of inclination 30°

. Where should another particle B, with the same charge and mass, be placed on the incline so that it may remain in equilibrium?

4. Two particles A and B, each with a charge Q, are placed a distance d apart. Where should a particle of charge q be placed on the perpendicular

bisector of AB, so that it experiences maximum force? What is the magnitude of this maximum force?

5. Two particles A and B, each carrying a charge Q, are held fixed with a separation d between them. A particle C of mass m and charge q is kept at the middle point of the line AB. (a) If it is displaced through a distance x perpendicular to AB, what would be the electric force experienced by it? (b)

Assuming $x \ll d$, show that this force is proportional to x. (c) Under what conditions will the particle C execute simple harmonic motion if it is released after such a small displacement? Find the time period of the oscillations if these conditions are satisfied.

6. Repeat the previous problem if the particle C is displaced through a distance x along the line AB.

7. A positive charge Q is distributed uniformly over a circular ring of radius R. A particle of mass m and negative charge $-q$ is placed on its axis at a distance x from the centre. Find the force on the particle. Assuming $x \ll R$, find the time period of oscillation of the particle if it is released from there.

8. A rod of length L has a total charge Q distributed uniformly along its length. It is bent in the shape of a semicircle. Find the magnitude of the electric field at the centre of curvature of the semicircle.

9. A 10-cm long rod carries a charge of $+50 \mu\text{C}$ distributed uniformly along its length. Find the magnitude of the electric field at a point 10 cm from both ends of the rod.

10. Consider a uniformly charged ring of radius R. Find the point on the axis where the electric field is maximum.

11. A circular wire loop of radius a carries a total charge Q uniformly distributed over it. A small length dL of the wire is cut off. Find the electric field at the centre due to the remaining wire.

12. A positive charge q is placed in front of a conducting solid cube at a distance d from its centre. Find the electric field at the centre of the cube due to the charges induced on its surface.
13. Consider a circular ring of radius r , uniformly charged with linear charge density λ . Find the electric potential at a point on the axis at a distance x from the centre. Hence find the electric field at that point.
14. Two particles A and B, having opposite charges 2.0×10^{-6} C and -2.0×10^{-6} C, are placed at a separation of 1.0 cm. (a) Write down the electric dipole moment of this pair. (b) Calculate the electric field at a point on the axis of the dipole 1.0 m away from the centre. (c) Calculate the electric field at a point on the perpendicular bisector of the dipole and 1.0 m away from the centre.
15. A particle of mass m and charge q is thrown at speed u against a uniform electric field E . Find the distance it travels before coming to momentary rest.
16. A block of mass m with charge q lies on a smooth horizontal table and is connected to a wall through a spring of spring constant k . A horizontal electric field E parallel to the spring is switched on. Find the amplitude of the resulting SHM of the block.
17. A block of mass m with a positive charge q lies on a smooth horizontal table terminating at a wall. The distance of the block from the wall is d . A horizontal electric field E directed towards the right is switched on. Assuming that the collisions of the block with the wall are perfectly elastic, find the time period of the resulting oscillatory motion. Is the motion simple harmonic?
18. Two identical particles, each having a charge 2.0×10^{-4} C and mass 10 g, are kept at a separation of 10 cm and then released. Find the speeds of the particles when the separation becomes very large.
19. Two particles of masses 5.0 g each and opposite charges $+4.0 \times 10^{-5}$ C and -4.0×10^{-5} C are released from a separation of 1.0 m. Find the speeds of the particles when the separation becomes 50 cm.
20. An electric dipole consists of two opposite charges each of magnitude q separated by distance $2a$. It is placed in a uniform electric field E along its axis and then slightly tilted and released (neglect gravity). Find the time period of small oscillations.

Biology

Do following questions in separate holiday homework notebook

- 1 Explain the post pollination events leading to seed production in angiosperms.
- 2 list the different types of pollination depending upon the source of pollen grain.
- 3 Describe any two devices in a flowering plant which prevent both autogamy and geitonogamy.
- 4 Compare the characteristic features of insect pollinated and wind pollinated plants. Explain how the respective features assist in pollination.
- 5 Where does meiosis occur in the ovule of an angiosperm describe the

process up to development of mature embryo sac.

6 Explain the development of male gametophyte in an angiosperm draw a well labelled diagram of three cell male gametophyte

7 Differentiate between parthenocarpy and parthenogenesis give one example of each.

8 A fertilized egg is a blueprint of future development explained in humans.

9 Why are the Leydig cells present and what is their role in reproduction?

10 explain the role of pituitary and ovarian hormones in the menstrual cycle of the human female.

11 when and where do chorionic villi appear in humans. state their functions.

12 explain various special techniques used in assisted reproductive technologies.

13 Is the use of contraceptives justified? Give reasons.

14 Removal of gonads cannot be considered as a contraceptive option. Why?

15 Why is haemophilia generally observed in human males? Explain the conditions under which a human female can be haemophilic.

16 Differentiate between dominance and codominance explain codominants taking an example of a human blood group in the population.

17 Explain polygenic inheritance and multiple allelism with the help of suitable examples.

18 Creative corner

Make a beautiful Biology game or a working model from the topic of biotechnology or of your choice.

19 Practical work for final practical (CBSE)

Complete your project report file of any topic given below and submit after summer break.

A) Any medical disorder

B) Genetic disorders

C) Study the inheritance pattern of your family

D) Evolutionary relationship of various plants coding to their habitat and diversification

E) Types of cancer

F) Genetic syndrome

G) Or any other topic of biology but first confirm your topic to me.

20 Revise the syllabus from NCERT textbook and practice questions from the chapters.

Physical Education

1. Labelled diagram of 400 metre track and explain 100 metre, 200 metre, 400 metre, 800 metre, and 1500 metre races and show in 400 metre track.
2. Field Events : Shot put, discus throw, javelin throw, long jump, High jump, Football, Basketball, Kabaddi, Volleyball, Cricket, Hockey
3. Any one game of your choice out of the list above. Labelled diagram of field and equipment (rules, terminologies and skills) etc.
4. Pictorial presentation of any five asanas.

Music

1. भारतीय संगीत के ऐसे पांच कलाकारों के नाम लिखिए जिनको अब तक पद्मश्री पुरस्कार मिल चुका है।
2. उनके विषय में संक्षिप्त जानकारी विस्तार से लिखिए।
3. भारतीय संगीत के ऐसे पांच कौन से कलाकार हैं जिनको अब तक पद्मविभूषण पुरस्कार मिल चुका है? उनका संक्षिप्त वर्णन कीजिए।
4. भारतीय संगीत के उन कलाकारों के नाम सचित्र वर्णन सहित लिखिए जिनको अब तक भारत रत्न पुरस्कार से नवाजा गया है।
5. भारतीय संगीत में वाद्य यंत्रों को चार वर्गों में विभाजित किया गया है पहले सुषिर वाद्य, दूसरा घन वाद्य, तीसरा तंत्र वाद्य और चौथा अवनद वाद्य इन चारों वर्गों के वाद्य यंत्रों का सचित्र वर्णन कीजिए।

Note: प्रत्येक वर्ग के वाद्य यंत्र तीन-तीन होने चाहिए।

6. भारतीय संगीत में खुले खुलों व बंद बोलों के ऐसे कैसे कौन से ताल हैं जिनको आप एकगुन या दुगुन कर सकते हैं? विस्तार से लिखिए।
7. भारतीय संगीत की निम्नलिखित गायन शैलियों के विषय में आप क्या जानते हैं संक्षिप्त में वर्णन कीजिए और उनके कलाकारों का भी सचित्र वर्णन कीजिए - ठुमरी, धमार, बड़ा खयाल, छोटा खयाल की गायन शैलियां
8. मां सरस्वती का चित्र बनाकर यह वंदना लिखिए है हंस वाहिनी ज्ञानदायिनी अंब विमल मत दे इस

वंदना को पूरा कीजिए

9. निम्नलिखित वाद्यों के वादको का वाद्य साहित्य सचित्र वर्णन कीजिए- हारमोनियम, सितार, तबला, बांसुरी, शहनाई, संतूर, सारंगी, सरोद।

10. निम्नलिखित राग व तालों का संक्षिप्त वर्णन कीजिए राग भैरव, रागमालकोश, राग बागेश्री, धमार ताल, रूपक ताल झपताल, एक ताल औरचार ताल

Hindi

निर्देश:

- कार्य साफ-सुथरी लिखावट में करें।
- सभी प्रश्नों के उत्तर स्वयं की भाषा में लिखें।
- परियोजना कार्य रंगीन एवं आकर्षक बनाइए।

भाग - 1: पाठ्य-अभ्यास

- 1) आरोह पाठ्य पुस्तक के गद्य खंड पाठ (1-4) पढ़कर प्रत्येक से 5 अतिरिक्त प्रश्नों का निर्माण करें।
- 2) आरोह पाठ्य पुस्तक के काव्य खंड पाठ (1-4) पढ़कर प्रत्येक से 5 अतिरिक्त प्रश्नों का निर्माण करें।
- 3) आज के ऑनलाइन बाज़ार की तुलना पारंपरिक बाज़ार से कीजिए। (तुलनात्मक चार्ट)
- 4) अपनी रुचियों एवं लक्ष्य का उल्लेख करते हुए 150 शब्दों में आत्म-परिचय लिखिए।
- 5) वितान पाठ्य - पुस्तक के पाठ 'सिल्वर वैडिंग' में से 5 अतिरिक्त प्रश्नों का निर्माण करें और पाठ का आकर्षक व सुंदर प्रवाह चित्र तैयार करें।

भाग - 2 रचनात्मक लेखन

6. निम्नलिखित विषयों में से किसी 100-120 शब्दों में रचनात्मक लेख लिखिए —

- प्रकृति और मानव जीवन का संबंध * डिजिटल शिक्षा : लाभ और हानि
- भारतीय संस्कृति और युवा * 0आत्मविश्वास सफलता की कुंजी है
- विज्ञापनों का युवाओं पर प्रभाव

7. परियोजना कार्य (Project Work)

निम्न में से किसी एक विषय पर परियोजना तैयार करें :

- सोशल मीडिया का विद्यार्थियों पर प्रभाव * रेडियो से पॉडकास्ट तक का सफर
- भारतीय समाचार पत्रों का इतिहास * डिजिटल मीडिया और युवा पीढ़ी

अथवा

किसी हिंदी कवि/लेखक का चित्र एवं परिचय तैयार कीजिए।

परियोजना कार्य हेतु निर्देश:

1. किसी एक प्रसिद्ध हिंदी कवि या लेखक का चयन करें।
उदाहरण: मुंशी प्रेमचंद, महादेवी वर्मा, रामधारी सिंह दिनकर, सूरदास आदि।
2. चुने गए कवि/लेखक का स्पष्ट एवं सुंदर चित्र परियोजना फ़ाइल में चिपकाएँ।
3. परिचय सरल एवं शुद्ध हिंदी भाषा में लगभग 150-200 शब्दों में लिखें।
4. परियोजना कार्य साफ-सुथरी लिखावट और आकर्षक सजावट के साथ प्रस्तुत करें।

5. आवश्यकता अनुसार रंगीन चित्र, बॉर्डर तथा शीर्षक का प्रयोग करें।
 6. अंत में अपने विचार लिखें कि आपको उस कवि/लेखक से क्या प्रेरणा मिली।
 (परियोजना में शामिल करें, चित्र एवं समाचार कटिंग, हस्तनिर्मित चार्ट, स्वयं द्वारा लिखी कविता/नारा
 कम से कम 10-12पृष्ठ)
 नोट: आवधिक परीक्षा 2 का पाठ्यक्रम याद करें।

Informatics Practices

Do all questions in a separate/ assignment notebook.

Q1. Answer the following questions briefly:

- a) Write any two features/advantages of MySQL.
- b) What is a database ? What is a database management system? Give two examples of RDBMS. Write any two advantages of RDBMS.
- c) Write the full form of SQL? Explain the subcategories of SQL statements giving two examples in each category.
- d) Define the following by taking suitable examples wherever necessary :
 1.Primary Key 2. Candidate Key 3. Alternate Key 4. Foreign Key
- e) Differentiate between the following(Give examples to support your answer):
 - CHAR and VARCHAR datatypes
 - NUMERIC and NON NUMERIC datatypes
 - Tuple and Attribute
 - Degree and Cardinality of a relation
 - DELETE and DROP TABLE
- f) When entering multiple –line query in MySQL, what does the MySQL prompt change to ?
- g) After creating the “employee” database, you want to use it. Write the command that you should give.
- h) What is NULL value?
- i) What do % and _ mean inside a SELECT with LIKE statement ? Explain with the help of example of each.
- j) What are group/aggregate functions in MySQL? Explain the usage of any two group functions by taking example of each.
- k) Briefly explain the difference between single row functions and group functions by taking examples of each.
- l) Rama is not able to change a value in a column to NULL. What did she specify when she created the table?

Q2. Write a SQL statement to create the following table HOSPITAL.

Table: HOSPITAL

PN o	Name	Age	Department	DateofAdm	Charges	Sex
1	Sandeep	65	Surgery	23/02/98	300	M
2	Ravina	24	Orthopedic	01/01/98	200	F
3	Karan	45	Orthopedic	19/02/98	200	M
4	Tarun	12	Surgery	01/01/98	300	M
5	Zubin	36	ENT	12/01/98	250	M
6	Ketaki	16	ENT	24/02/98	300	F
7	Ankita	29	Cardiology	20/02/98	800	F
8	Zareena	45	Gynecology	22/02/98	300	F
9	Kush	19	Cardiology	13/01/98	800	M
10	Shailya	31	Medicine	19/02/98	400	M

Note: PNo is the primary key in the above table.

Write SQL commands for the statements (a) to (s) on the basis of the table HOSPITAL.

- a) To show all the information of the patients of the cardiology department..
- b) To list the names of female patients who are either in the orthopedic or surgery department.
- c) To list the name of all the patients with their date of admission in ascending order.
- d) To display the patient's name, charges, age for male patients only.
- e) To count the number of patients with age > 20.
- f) To display various departments.
- g) To display the number of patients in each department.
- h) To display the number of male & female patients.
- i) To display the details of the patients admitted in first quarter of 1998.
- j) To display the names of the department where the number of patients is less than 2.
- k) To display the details of all the patients whose name starts with the alphabet 'Z'.
- l) To change the age of the patient Kush to 20.
- m) To increase the charges of all the patients by 5%.
- n) To remove the record of the patient whose Name is Tarun.
- o) To add another column WardNumber of the type Number in the above table.
- p) To change the column Charges such that it can allow NULL values.
- q) To set charges to NULL for all the patients in the Surgery department.
- r) To decrease the charges by 10% of all the patients admitted in the Cardiology department.
- s) To remove the primary key constraint in the above table.
- t) To insert a new row in the HOSPITAL table with the following data:
11,'Mustafa',37,'ENT','1998-02-25',250,'M'.

Give the output of the following SQL statements based on the above table HOSPITAL:

- (i) Select COUNT(DISTINCT Charges) FROM Hospital;
- (ii) Select MIN(Age) From Hospital WHERE Sex='M';
- (iii) Select AVG(Charges) FROM Hospital where DateofAdm < '1998-02-12';
- (iv) Select SUM(Charges) FROM Hospital where Sex = 'F';
- (v) Select Left(Name ,4) FROM Hospital where Charges = 200;
- (vi) Select RIGHT(Name,3) FROM Hospital where Deaprtment='ENT';
- (vii) Select Length(Department) FROM Hospital where Department IN ('ENT','Orthopedic');
- (viii) Select CONCAT(Name,Age) FROM Hospital where Sex='F' and Age <18;
- (ix) Select LCASE(Department) FROM Hospital where Department Like '%y';
- (x) SELECT SUBSTR(Deaprtment,2,3) FROM Hospital where Charges between 500 and 1000;
- (xi) SELECT MONTH(DateofAdm) , DAY(DateofAdm) From Hospital where cost between 500 and 1000;
- (xii) SELECT NOW(), DAYNAME(CURDATE());
- (xiii) SELECT DAYOFYEAR(NOW());
- (xiv) SELECT ROUND(2345.67,2) , ROUND(2345.67,1) , ROUND(2345.67,0) ;
- (xv) SELECT POWER(25,-1), MOD(56,7) ;

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