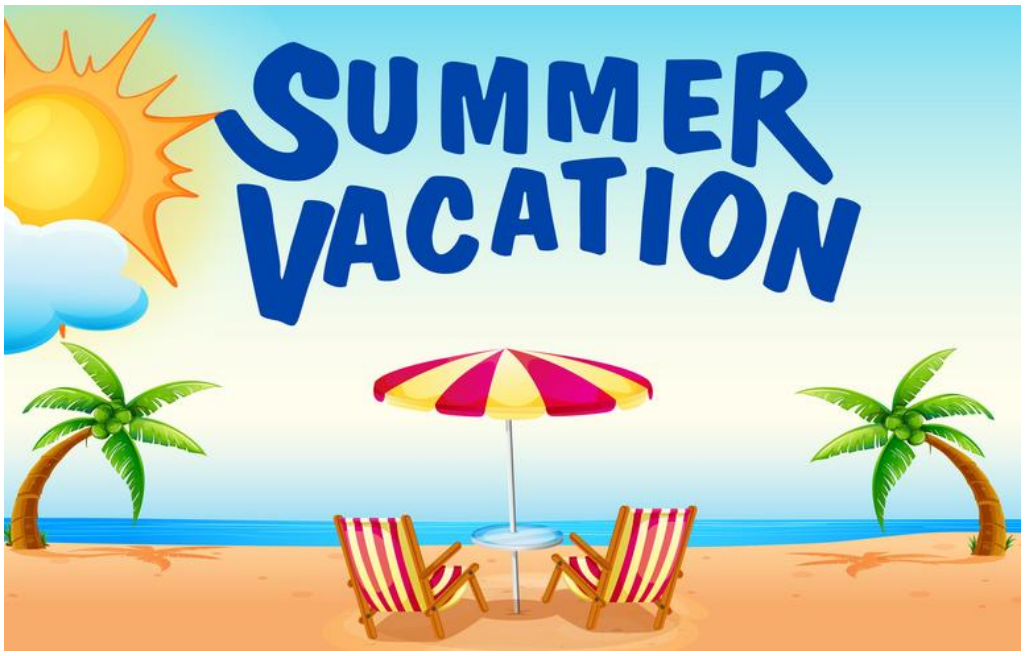
STEPHENS

INTERNATIONAL PUBLIC SCHOOL



Holidays' Homework

Session – 2025-26

Class : 12th

General Instructions:

1. **Use assignment sheets to do all the written work.**
2. **Use a separate file (use A4 sheets) for project and activity work.**
3. **Make separate file for each subject.**
4. **Do your work neatly and beautify it.**
5. **Revise the syllabus taught in the class so far.**

- **God gives us 24 hours in a day, let us take out a few minutes for Him and thank Him for the happy moments and also ask Him to give us strength to cope up with our difficulties.**
- **Don't be lazy and become a couch potato!! Do exercise and be fit and healthy.**
- **Reading is fun and it helps us develop our vocabulary. Make it a habit to read story books.**

Subject : English

Task 1:

Notice Writing:

(A) You are Nimita/Naresh, Head Girl/Boy. Write a notice for a Face Painting Competition on World Environment Day (within 50 words).

(B) You lost your Titan wrist-watch in your school. Draft a notice, in not more than 50 words, to be placed on your school notice board. You are a student of Class XII of Rani Meghana Senior Secondary School, Gwalior. Sign as Ruhi/ Rohan.

Task 2:

Article Writing:

(A) Write an article (150–200 words) on the issue of Brain Drain Among Youth and suggest steps to reduce it.

(B) India is a land of diversity. One way in which it makes us feel proud of it is the number of festivals we enjoy. Write an article in 150-200 words on 'Festivals of India'. You are Karuna/Karan.

Task 3:

Job Application:

(A) Indian Public School, Mumbai, has given an advertisement in The Times of India for recruitment of a Dance Teacher.

> SITUATION VACANT
> INDIA PUBLIC SCHOOL invites applications for the post of experienced and qualified Dance teacher with minimum 5 years experience, skilled in both classical and contemporary forms of dance. Mention additional skills, interests and achievements. Contact Principal, Indian Public School.

Write a letter of application along with a detailed bio-data for the above post in 120-150 words. Invent necessary details. You are Ankit/Amrita, Dilkush Road, Sakinaka Mumbai.

(B) You are Vihan Kapadia, a recent Commerce graduate from the National College of Commerce, Surat, looking for a job. You came across the following advertisement in the Classifieds columns of a national daily. You think the job requirements are a good fit for your skills/personality. Write a letter along with your biodata, expressing your interest in the advertised post.

> Star-Bharat Lever Limited
> 12, Greater Kent I,Hyderabad -500001
> WANTED
> Marketing Executives, for launching of new products. All zones of Andhra Pradesh & Telangana. Driven, goal- oriented fresh Commerce graduates, with good communication skills & the ability to multitask may apply. Working knowledge of AI tools - mandatory. Apply within 7 days to the Manager, HR.

Task 4: Book Project

Read any one of the following books (or any book of your choice) and make a project in the following format:

- General Info about the Book
- Author's Background
- Main Characters
- Summary
- Moral/Lesson

Suggested Books:

- Wings of Fire – A.P.J. Abdul Kalam
- Playing It My Way – Sachin Tendulkar
- Here, There and Everywhere – Sudha Murty
- The Great Train Journey – Ruskin Bond
- A Place Called Home – Preeti Shenoy

Task 5: Creative Writing:

Write an original article/poem/short story reflecting creativity, thoughts or personal experiences. Make sure that the work is self-created and not copied from any source.

Theme: India in 2030

Subject : Physics

Students are required to write down the Aim, Theory, Procedure and Precautions for the following practicals in their Physics Lab Files during the summer holidays. Do not write the observations or calculations.

1. To find the resistance of a given wire using metre bridge and hence determine the specific resistance of its material.
2. To determine resistance per cm of a given wire by plotting a graph of potential difference versus current.
3. To verify the laws of series combination of resistances using a metre bridge.
4. To verify the laws of parallel combination of resistances using a metre bridge.
5. To find the focal length of a convex lens by plotting graphs between u and v or between 1/u and 1/v.

Investigatory Projects:

1. Half wave rectifier
2. Full wave rectifier
3. Light dependent resistor
4. And gate
5. Or gate
6. Not gate
7. Diffraction of light
8. Transformer
9. Lenz's law of electromagnetic induction

Problems for practice:

Q1. Two identical metallic spheres, having unequal opposite charges are placed at a distance of 0.90 m apart. After bringing them in contact with each other, they again placed at the same distance apart. Now the force of repulsion between them is 0.025 N. Calculate the final charge on each of them.

Q2. The charges q_1 = 1.5 mC, q_2 = 0.2 mC, q_3 = –0.5 are placed at 3 different point ABC. If r_1 = 1.2, r_2 = 0.6, calculate the magnitude and the resultant force on q_2.

Q3. Four charge +q, +q, –q and –q are placed respectively at the corners A, B, C and D of a square of side a, arranged in the given order. Calculate the intensity of electric field at the center of the square where Q is a charge.

Q4. An electron is liberated from the lower of the two large parallel metal plates separated by a distance of 20mm. The upper plate has a potential of 2400V relative to the lower plate. Will an electron in an electric field move towards higher potential or lower potential? How long does it take to reach the upper plate?

Q5. A particle of mass 10^{-3} kg and charge 5μC is thrown at a speed 20 ms^{-1} against a uniform electric field of strength 2×10^5 N C^{-1}. How much distance will it travel before coming to rest momentarily?

Q6. Two point charges q_1 and q_2 of 2×10^{-8} C and -2×10^8 C respectively are placed 0.4m apart. Calculate the electric field at the centre of the line joining the two charges.

Q7. The sides of a rectangle ABCD are 15cm and 5cm point charge of –5 micro coulomb and +2 micro coulomb are placed at vertices A and D respectively. Calculate the electric potential at vertices A and C. Also calculate the work done in carrying a charge of +3 micro coulomb from C to A.

Q8. Three point charges +Q, –2Q and –3Q are placed at the vertices of an equilateral triangle ABC of side. If these charges are displaced to the mid points A_1, B_1 and C_1 respectively, calculate the amount of work done in shifting the charges to the new locations.

Q9. Explain the difference in the behaviour of a conductor and a dielectric in the presence of an external electric field.

Q10. A parallel plate capacitor of capacitance 20μF, is connected to a 100 V, supply. After sometime, the battery is disconnected, and the space, between the plates of the capacitor is filled with a dielectric, of dielectric constant 5. Calculate the energy stored in the capacitor (i) Before, (ii) After the dielectric has been put in between its plates.

Subject : Chemistry

Section – A

1. Make a flow chart of the general formula, functional group and IUPAC nomenclature of all the organic compounds.
2. Make a flow chart of all the name reaction of halo alkanes and halo arenes and alcohol phenol and ether.
3. Make a flow chart of Victor Meyer test to distinguish between primary, secondary and tertiary alcohol.
4. Practice the numericals on colligative properties, Raoults law and concentration terms.

Section – B

PROJECT WORK

1. To study the presence of oxalate ions in guava fruit at different stages of ripening.
2. Study of quantity of casein present in different samples of milk.
3. Preparation of soyabean milk and its comparison with the natural milk with respect to curd formation and effect of temperature.
4. Study of effect of potassium bisulphate as food preservative under various condition (temperature, concentration and time etc.)
5. Comparative study of rate of fermentation of following material (wheat flour, gram flour potato juice carrot juice)
6. Study of common food adulterants.
7. Environmental pollution
8. To study the process of formation of coffee and different brands, their production and international trade centres.
9. To study the process of formation of tea and different brands, their production and international trade centres.
10. To study the process of formation of wine, their production, different brands and national and international trade centres.

Section – C

PRACTICAL WORK

Experiment 1	To prepare the Double Salt of Mohr salt.
Experiment 2	To prepare crystal of potash alum.
Experiment 3	To prepare sample of p-nitroacetanilide.
Experiment 4	To prepare 2-naphthol aniline dye.
Experiment 5	To prepare 250 ml of M/40 oxalic acid.
Experiment 6	To determine the molality of $KMnO_4$ solution by titrating it against a standard solution of oxalic acid.
Experiment 7	To find the molality strength and percentage purity of the sample of $KMnO_4$ by titrating it again M/20 standard solution of Mohrs salt.

Note:- Section C will be written only in the lab manual as instructed during the class.

Subject : Biology

Section – A

ASSIGNMENTS

1. **Reproductive cycle diagrams:** Draw and label diagrams of human male and female reproductive systems and cycles.
2. **Gametogenesis comparison:** Compare and contrast spermatogenesis and oogenesis.
3. **Reproductive health:** Research and write about reproductive health issues, such as infertility, contraception, or sexually transmitted infections (STIs).

Section – B

1. **Reproductive system model:** Create a 3D model of the human reproductive system.
2. **Fetal development timeline:** Create a timeline of fetal development from fertilization to birth.
3. **Reproductive health awareness:** Design a poster/leaflet on reproductive health development.

Section – C

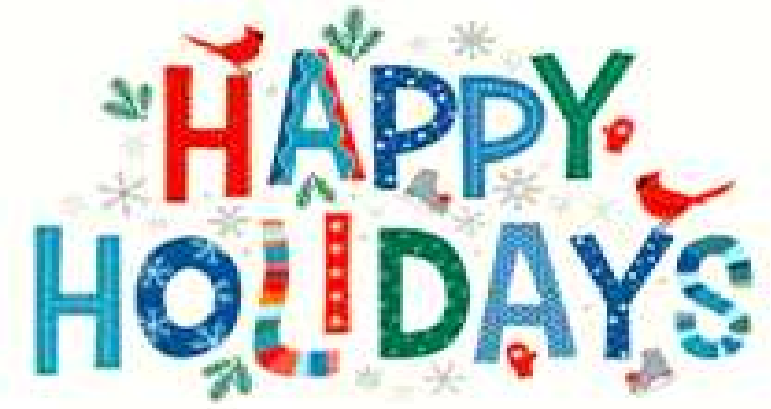
CASE STUDIES

1. **Infertility case study:** Research and present a case study on infertility causes, diagnosis, and treatment options.
2. **Reproductive technology:** Research and write about assisted reproductive technologies (ART) like IVF, ICSI, or surrogacy.

Section – D

Experiment No. 1	Prepare a temporary mount of pollen germination.
Experiment No. 2	To study plant population density and frequency by quadrant method.
Experiment No. 3	Prepare temporary mount of onion root tip to study mitosis.
Experiment No. 4.	Isolate DNA from available plant material.
Experiment No. 5	T.s of testis, ovary and Blastula.

NOTE: SECTION C will be written only in the lab manual as instructed during the class.



Subject : Mathematics

1) For any square matrix A = $\begin{bmatrix} 1 & 2 & 3 \\ -7 & -8 & 0 \\ 3 & 2 & 5 \end{bmatrix}$ Prove that (A + A') is symmetric whereas (A-A') is Skew symmetric.

2) Let A += $\begin{bmatrix} 2 & 3 \\ -1 & 5 \end{bmatrix}$ and B = $\begin{bmatrix} -3 & -2 \\ 4 & 7 \end{bmatrix}$ prove that

   i) (A + B)' = A' + B '

   ii) (AB)' = B'A'

3) Let A = $\begin{bmatrix} 5 & 7 \\ -7 & 8 \end{bmatrix}$ find the value of $A^2 + B^2 + 2AB$.

4) Solve the following system of equations by matrix method

   x + y – z = 1

   2y + 3z = 5

   x + z =2

5) Let A $\begin{bmatrix} 7 & -2 & 3 \\ -1 & 5 & 2 \\ 1 & 1 & 3 \end{bmatrix}$ find A^{-1}

6) Let A = $\begin{bmatrix} 4 & -2 \\ 5 & 7 \end{bmatrix}$ prove that whether $|3A| = 9|A|$

7) Define the relation R on a set of natural numbers as R = (x, y) s.t (x – y) is a natural number. Test whether R is equivalence relation.

8) Define the relation R on a set of triangles in a plane as R = (x, y) s.t $x \cong y$, where x and y are triangles. Prove that R is equivalence.

9) Check the function for one-one and onto $f(x) = x^2$ where f(x) is a real value function.

10) Define a function f(x) in the plane as f(x) = 3x + 4, prove that f(x) is a invertible function.

11) Let A = $\begin{bmatrix} 7 & -3 \\ -2 & 5 \end{bmatrix}$ and B = $\begin{bmatrix} 8 & -2 \\ 3 & -7 \end{bmatrix}$ find AB and BA. What conclusion you have derived.

12) Find the inverse of the matrix A = $\begin{bmatrix} 7 & 2 & 5 \\ 3 & 1 & 2 \\ -1 & 0 & 2 \end{bmatrix}$ and prove that A.A-1= I where I stands for Identity matrix for the order 3.

13) For the square matrix A = $\begin{bmatrix} -7 & 0 & 7 \\ 5 & 3 & 2 \\ 1 & -1 & 2 \end{bmatrix}$ find adjoins of A and prove that

A.adjoint A = | A |.I

14) Let A = $\begin{bmatrix} 7 & 9 & 16 \\ 2 & 5 & 7 \\ 8 & 3 & 11 \end{bmatrix}$ without expanding prove that | A | = 0

15) Let A = $\begin{bmatrix} 7 & 9 & 0 \\ 2 & 5 & 8 \\ 8 & 3 & -4 \end{bmatrix}$ find | A | by finding co-factor of R3.

16) To verify that relation R on-on the set of all lines in a plane defined by

R = (x,y): x II y. Prove that it is an equivalence relation .

17) Demonstrate a function which is 1–1 and not onto.

18) Draw the graph of the $\sin^{-1}$ (x) by using the graph of sin x and then demonstrate the concept of mirror reflection about the line y – x = 0.

19) Demonstrate the definition of relation.

20) Sketch the graph of $\tan^{-1}$ (x) and sigum function define on XY plane.

Subject : Accountancy

1. Do illustration of the given topics. (Any 2 illustrations of each topics)
   - (i) Interest on Capital
   - (ii) Interest on Drawings
   - (iii) Interest on Loan
   - (iv) Profit & loss Appropriation A /c
   - (v) Past Adjustment
   - (vi) Guarantee of Profit
2. Any five practical questions of Goodwill.
3. Do practice of admission of Partnership.
4. Prepare Project Report:-

   One specialized project based on Co's financial statement analysis that cover any two of the following.
   - (i) Comparative and common size financial statements
   - (ii) Accounting Ratios
   - (iii) Segment Reports
   - (iv) Cash flow statements

Subject : Business Studies

- **Do Case Study based questions from chapters 2 & 4. (minimum 05)**
- **Prepare a project on Marketing.**

Subject : Economics

Answer the following questions:-

1. **PREPARE DETAILED NOTES OF THE FOLLOWING CHAPTERS (TO BE DONE ON FAIR NOTEBOOK)**
   1. Money and Banking
   2. Govt. Budget
   3. Balance of Payments
2. **Project work (TO BE DONE IN A FILE)**

   (Choose any one from the following topics)
   - Micro and Small Scale Industries
   - Contemporary Employment situation in India
   - Goods and Services Tax Act and its Impact on GDP
   - Disinvestment policy of the government
   - Health Expenditure (of any state)
   - Human Development Index
   - Self-help group
   - Inclusive Growth Strategy
   - Trends in Credit availability in India
   - Monetary Policy Committee and its functions
   - Government Budget & its Components
   - Role of RBI in Control of Credit
   - Trends in budgetary condition of India
   - Exchange Rate determination – Methods and Technique
   - Currency War – reasons and repercussions
   - Livestock – Backbone of Rural India
   - Sarva Shiksha Abhiyan – Cost Ratio Benefit
   - Alternate fuel – types and importance
   - Golden Quadrilateral – Cost ratio benefit
   - Minimum Support Prices

- Waste Management in India – Need of the hour
- Digital India- Step towards the future
- Relation between Stock Price Index and Economic Health of a Nation
- Minimum Wage Rate – Approach and Application
- Rain Water Harvesting – A solution to water crisis
- Vertical Farming – An alternate way
- Make in India – The way ahead
- Silk Route – Revival of the past
- Bumper Production – Boon or Bane for the farmer
- Rise of Concrete Jungle – Trend Analysis
- Aatmanirbhar Bharat

Subject : Sociology

Q1. "The struggle for women's upliftment in the 19th and early 20th centuries was led by male reformers". Discuss the suitable examples.

Q2. "Women are the basic unit of Society". What were the major women's issues taken up by various reformers in Indian history?

Q3. "The structure of family can be studied both as a social institution in itself and also in its relationship to other social institutions of society. Elaborate.

Q4. Critically examine the process of Sanskritization.

- **Prepare a detailed project on any one of the suggested topics.**

Suggested topics

1. Changes in the rural and urban centers
2. Green Revolution
3. Sanskrization, modernization westernization
4. Tribal societies
5. Colonialisation
6. The struggle for the Women's Equality and Rights
7. The struggle of the differently abled
8. Caste and the caste system

Subject : Political Science

A. Project Work.

Some suggested topics are:

- The importance of elections in a democratic country especially in India.
- Partition – Theory behind it and its legacy.
- One Party Dominance – Congress to BJP.
- Change in India's Foreign Policy.
- India's relation with its neighbours – (Choose any one country)
- Emergency – Reasons and Consequences
- New centre of power - EU, ASEAN, (Choose any one and explain).
- UN and its agencies.
- Environment – Sustainable development – Need of the hour.
- Globalisation – Economic, Political and Cultural Impact on Third World

(You may choose any other topic based on the syllabus)

General Instructions:

1. It should be a handwritten project on a A4 size sheet.
2. Project should be summed up in 12-15 pages.
3. It should be well researched and pictorial.
4. Title/ Cover page, acknowledgement, list of contents, Bibliography, headings and sub-headings are a must.

B. Read the newspaper daily especially the editorial page to update yourself. The current topics will be discussed in the class post summer break.

C. Answer the following questions.

1. What are the major differences between ASEAN and European Union as an alternative centres of power?
2. Explain Japan and South Korea as New centre of power.
3. Analyse India's changing relationship with post-communist Russia.
4. Critically evaluate the difficulties involved in implementing the suggested reforms to reconstruct the UN.
5. Explain any four reasons as to why India should be given a permanent membership in the UN Security Council.
6. Discuss the consequences of the partition.
7. Explain the ideology of Indian National Congress party and BJP.

Subject : History

A. Answer the following questions:-

Q1. Describe the distinctive features of domestic architecture of Mohenjodaro.

Q2. Describe the trade relations of the Harappans with West Asia.

Q3. What do you know about the authors and period when Mahabharata was compiled? Explain.

Q4. Buddha laid stress on Right of Conduct and Value.
In the light of above message, explain his teaching on life.

B. Prepare a detailed project on any one of the following:-

(i) Buddha's path of Enlightenment
(ii) Mahatma Gandhi – The Legendary Soul
(iii) The process Behind Framing the Indian Constitution
(iv) Mauryas the Empire Builders
(v) To reconstruct the History of Vijayanagra through the Archaeology of Hampi
(vi) Divine Apostle of Guru Nanak Dev

Note:- Students should prepare the project under the following headings.

(i) Acknowledgment
(ii) Index
(iii) Cover page
(iv) Project synopsis
(v) Data / Statistics/ Map work
(vi) Analysis, explanation and interpretation.

Activity: Study the articles on Mahabharata by some Indian scholars. Prepare the topic for group discussion in the class after vacation.

Subject : Physical Education

Learn the following topics:-

- Test for CWSN (any 4 items out of 27 items. One item from each component: Aerobic Function, Body Composition, Muscular strength & Endurance. Range of Motion or Flexibility)
- CWSN (Children with Special Needs - Divyang): Bocce/ Boccia, Sitting Volleyball, Wheel Chair Basketball, Unified Badminton, Unified Basketball, Unified Football, Blind Cricket, Goalball, Floorball, Wheel Chair Races and Throws, or any other Sport/Game of your choice.
- Children with Special Needs can also opt any one Sport/Game from the list as alternative to Yogic Practices. However, the Sport/ Game must be different from Test - Proficiency in Games and Sports.

Record File shall Include:

- Practical-1: Fitness tests administration. (SAI Khelo India Test)
- Practical-2: Procedure for Asanas, Benefits & Contraindication for any two Asanas for each lifestyle disease.
- Practical-3: Anyone one IOA recognized Sport/Game of choice. Labelled diagram of Field & Equipment. Also mention its Rules, Terminologies & Skills.

Subject : Applied Arts

Make a poster on the given topics on A3 size portfolio.

1. Advertisement
2. Logo
3. National festival

PROJECT WORK - Make a beautiful painting on sheet and frame it.
THEME : Mandala, Folk, Basholi, Madhubani

Subject : Hindustani Music

Q1. Write down the notation of Bhagaeshree in full formation with its description, Aaroh Avroh, Pakad, Sthai, Antra and Taan.

Q2. Write down the notation of Rupak Taal, in Thah (single) and Dugun (Double) speed or tempo.

Q3. Do practice of performing of Taals on hand by showing Sam, Taali, Khali.

Note:- All the work should be done on practical file or note book.

Subject : Computer Science

A. Submit the Project (in soft) on the topic that you have been assigned or any other which is based on management.

B. Do the following:

1. A list contains the following elements: 3, 25, 13, 6, 35, 8, 14, 45
   Write a function to swap the content with the next value divisible by 5 so that the resultant List will look like: 25, 3, 13, 35, 6, 8, 45, 14.
2. Write a program to accept values from a user in a tuple. Add a tuple to it and display its elements one by one. Also display its maximum and minimum value.
3. Write a program to input any values for two tuples. Print it, interchange it and then compare them.
4. Write a Python program to input 'n' classes and names of their class teachers to store them in a dictionary and display the same. Also accept a particular class from the user and display the name of the class teacher of that class.
5. Write a program to store student names and their percentage in a dictionary and delete a particular student name from the dictionary. Also display the dictionary after deletion.
6. Write a Python program to input names of 'n' customers and their details like items bought, cost and phone number, etc., store them in a dictionary and display all the details in a tabular form.

7. Write a Python program to capitalize first and last letters of each word of a given string.
8. Write a Python program to remove duplicate characters of a given string.
9. Write a Python program to compute sum of digits of a given string.
10. Write a Python program to find the second most repeated word in a given string.
11. Write a Python program to change a given string to a new string where the first and last chars have been exchanged.
12. Write a Python program to multiply all the items in a list.
13. Write a Python program to get the smallest number from a list.
14. Write a Python program to append a list to the second list.
15. Write a Python program to generate and print a list of first and last 5 elements where the values are square of numbers between 1 and 30 (both included).
16. Write a Python program to get unique values from a list.
17. Write a Python program to convert a string to a list.
18. Write a Python script to concatenate the following dictionaries to create a new one:
    d1={‘A’:1,’B’:2,’C’:3} d2={‘D’:4} Output should be: ={‘A’:1,’B’:2,’C’:3,’D’:4}
19. Write a Python script to check if a given key already exists in a dictionary.
20. Write a Python script to print a dictionary where the keys are numbers between 1 and 15 (both included) and the values are square of keys. Sample Dictionary {1: 1, 2: 4, 3: 9, 4: 16, 5: 25, 6: 36, 7: 49, 8: 64, 9: 81, 10: 100, 11: 121, 12: 144, 13: 169, 14: 196, 15: 225}
21. Write a Python script to merge two Python dictionaries. Write a Python program to sort a dictionary by key.
22. Write a Python program to combine two dictionary adding values for common keys.
    d1 = {‘a’:100,’b’: 200, 'c':300} d2 = {‘a’:300, ‘b’:200, 'd':400} Sample output: {‘a’:400,’b’:400,’d’:400,'c': 300}
23. Write a Python program to find the highest 3 values in a dictionary.
24. Write a Python program to sort a list alphabetically in a dictionary.
25. Write a Python program to count number of items in a dictionary value that is a list.