



Sachdeva Public School

Sector 13, Rohini



HOLIDAYS HOMEWORK
CLASS XI
SESSION 2019-2020



SPS, ROHINI

HOLIDAY HOMEWORK (2019-2020)

CLASS-XI

ENGLISH

Attempt these questions in your practice register.

1. The Sports Club of Bishop Cotton School, Shimla, is planning to organize a hiking-trekking expedition in Nepal. Draft a notice about the expedition for the school notice board in not more than 50 words. You are John / Joanna, the Secretary of Sports Club.
2. You are Parthasarthy Mishra, the Head Boy of St John's High School, Dalhousie. You have been asked to write a notice regarding a sports kit found in the school playground. Write the notice in not more than 50 words. Invent necessary details.
3. You are Romi/Rohit, Sports Captain of Sunshine International School. Your school has organised a marathon to promote awareness about obesity among school children. Design a visually appealing poster in about 50 words. Include all relevant details.
4. Draft a poster for promoting the need for joining the Defence Services. (50 words.)
5. You are Samita/Sunit, a resident of C-9, VasantKunj, Delhi. You find participation of children in various reality shows on T.V. a form of child exploitation. Write a letter to the editor of a national daily showing your concern about various forms of child exploitation prevalent in educated, urban society, giving some suggestions to curtail it.
6. You are Kavita/Kailash a resident of B-101, Yamuna Vihar, Delhi. You find it disturbing that despite a ban on the use of polythene bags, its use is rampant in city. Write a letter to the editor of a national daily expressing your concern about the apathy of people towards environmental degradation.
7. On the threshold of being a world super power, India does have a large young workforce but unfortunately not many in this force are employable for want of necessary skills. Write in about 150-200 words, an article for a newspaper on the topic 'Skill Development is the need of the hour'. You are Anita/Arnav.
8. 'Homes for the aged is a necessity in India'. Write a debate in 150-200 words either for or against the motion. You are Shivam/Shivani.
9. On the occasion of International Museum day, prepare a speech, in about 150-200 words, for the morning assembly on the role of museums in preserving history and heritage. Also mention how students can benefit from visiting museums. You are Karuna/Karan.
10. You are Sona/Sandeep, a worker in NGO – 'Awareness India'. You feel that media which has reached every part of the country can play an important role in spreading awareness about "Rights and Responsibilities". Write an article in about 150–200 words.
11. You are Sudha/Sudhir, a counsellor in BBP School, Palam. You come across cases of Domestic Violence frequently. You found through your interaction with the victims that children are affected most by this. Write an article in 150–200 words on the "Impact of Domestic Violence on Young Minds".
12. Read the chapter The Ailing Planet : Green Movement's Role from your book 'Hornbill' and make notes on it in a suitable format.



MATHEMATICS

Attempt these questions in your practice register

1. Describe $\left\{x : x = \frac{n}{n^2 + 1}, 1 \leq n \leq 3, n \in N\right\}$ in Roster form.
2. Find $P(P(A))$ if $A = \{1\}$
3. Two finite sets have m and n elements. The total number of subsets of first set is 56 more than total number of subsets of second set. Find the value of m and n .
4. Write all possible subsets of $\{2, 3\}$.
5. Two finite sets A and B have m and k elements respectively. If the ratio of number of elements of power set of A to number of elements of power set of B is 64:1 and $n(A) + n(B) = 12$, find the values of m and k .
6. For sets, A , B and C , using properties of sets, prove that
 - i) $(A \cup B) \cap (A \cup B') = A$
 - ii) $(A \cup B) - C = (A - C) \cup (B - C)$
 - iii) $A - (B \cup C) = (A - B) \cap (A - C)$
 - iv) $A \cap (B - C) = (A \cap B) - (A \cap C)$
7. Using principle of mathematical induction, prove the following for all $n \in N$.
 - (i) $\frac{1}{1.2.3} + \frac{1}{2.3.4} + \frac{1}{3.4.5} + \dots + \frac{1}{n(n+1)(n+2)} = \frac{n(n+3)}{4(n+1)(n+2)}$
 - (ii) $1.2 + 2.3 + 3.4 + \dots + n(n+1) = \frac{n(n+1)(n+2)}{3}$
 - (iii) $3.2^2 + 3^2.2^3 + 3^3.2^4 + \dots + 3^n.2^{n+1} = \frac{12}{5}(6^n - 1)$
 - (iv) $2.7^n + 3.5^n - 5$ is divisible by 24.
 - (v) $(2n + 7) < (n+3)^2$
8. Solve the following system of inequalities graphically.
 - (i) $x - y \leq 1, x + 2y \leq 8, 2x + y \geq 2, x \geq 0, y \geq 0$
 - (ii) $x - 2y \leq 2, -3x + 2y \leq 3, 2x + 3y \leq 12, 2x + 3y \geq 6$
 - (iii) $x + 2y \geq 20, 3x + y \leq 15, x \geq 0, y \geq 0$
9. Solve for x and represent the solution on the number line:
 - (i) $-11 \leq 4x - 3 \leq 13$
 - (ii) $3x - 7 < 5 + x; 11 - 5x \leq 1$



PHYSICS

Answer the following questions in the register.

Q.1. Name the physical quantity whose unit is 'light year'.

Q.2. Find the dimensions of a/b in the relation :

$F = ax + bt^2$, where F is force, x is distance and t is time.

Q.3. State the number of significant figures in the following: (a) 0.007 m^2 (b) 6.230 J

Q.4. (i) Can a quantity have units and still be dimensionless?

(ii) Can a quantity have dimensions and still have no units?

If yes, give an example for each case.

Q.5. On a 60 km track, a train travels the first 30 km with a uniform speed of 30 km/hr. How fast must the train travel the next 30 km so as to have an average of 40 km/hr for the entire trip?

Q.6. On a certain day rain was falling vertically with a speed of 35 m/s. A wind started blowing after some time with a speed of 12 m/s in east to west direction. In which direction should a boy waiting at a bus stop hold his umbrella?

Q.7. A planet moves around the sun in a nearly circular orbit. Its period of revolution ' T ' depends upon: (i) radius ' r ' of orbit (ii) mass ' M ' of the sun and (iii) the gravitational constant ' G '.

Show dimensionally that $T^2 \propto r^3$.

Q.8. A balloon is ascending at the rate of 14 m/s at the height of 98 m above the ground when the food packet is dropped from the balloon. After how much time and with what velocity does it reach the ground? Take $g = 9.8 \text{ m/s}^2$.

Q.9. Derive the following equations of motion for a uniformly accelerated motion from velocity-time graph:

$$(i) \ v = u + at \quad (ii) \ s = ut + \frac{1}{2} at^2 \quad (iii) \ v^2 - u^2 = 2as$$

Q.10. Find an expression for centripetal force ' F ' acting on a particle of mass ' m ', moving with velocity ' v ' along a circle of radius ' r ' by the method of dimensional analysis.



CHEMISTRY

Answer the following questions in the register:

Q1. State the number of significant figures in each of the following numbers:

- | | |
|----------------------------|-------------|
| (a) 823.05 | (b) 2890.0 |
| (c) 780892 | (d) 0.00692 |
| (e) 2.062×10^{-3} | (f) 0.0560 |

Q2. The population of India based on 1981 census figure was 684 millions. Express the results in scientific notation and write the number of significant figures.

Q3. Classify the following as pure substances or mixtures. Separate the pure substances into elements and compounds and divide the mixtures into homogeneous and heterogeneous:

Air, milk, graphite, diamond, tap water, distilled water, brass, 22 carat gold, steel, iodized table salt, honey, phosphorous, toothpaste, marble, slaked lime, gasoline, sugar.

Q4. An hourly requirement of an astronaut can be satisfied by the energy released when 34 grams of sucrose is burnt in his body. How many grams of oxygen would he require to carry in space to meet his requirement for one day?

Q5. Derive the empirical and molecular formula of the compounds having following percentage composition:

- | | |
|------------------------------------|----------------|
| (a) C = 57.8%, H = 3.6%, O = 38.6% | M.Mass = 166 u |
| (b) H = 5.88%, O = 94.12% | M.Mass = 34 u |
| (c) C = 66.7%, H = 7.4%, N = 25.9% | M.Mass = 108 u |

Q6. Haemoglobin contains 0.33% of iron by weight. The molecular mass of haemoglobin is approximately 67200 u. Calculate the number of iron atoms present in one molecule.

Q7. The density of 3 molal aqueous solution of NaOH is 1.110 g/ml. Calculate the molarity of the solution.

Q8. 200 ml of water is added to 500 ml of 0.2 M solution. What is the molarity of the diluted solution?

Q9. Calculate the amount of CO₂ produced when 1.5 kg of carbon is burnt in air.

Q10. Calculate molarity, molality and normality of 98% (mass/volume) aqueous solution of H₂SO₄. (Given : density = 1.19 g/cm⁻³)



BIOLOGY

Attempt these questions in the Biology register.

- Q1. Who was the person who coined the term cell?
- Q2. Name the equivalent term for Golgi apparatus in plant cells.
- Q3. Define the term Cell Inclusions.
- Q4. Mitochondria and Chloroplasts are called semiautonomous structures. Why?
- Q5. What is Go phase?
- Q6. Amoeba multiplies by mitotic cell division. Is this phenomenon growth or reproduction? Explain.
- Q7. Give two differences between the internal structure of cilia and flagella.
- Q8. A special internal structure is mesosome. In which type of cells is it present and what are its functions?
- Q9. Differentiate between metacentric, sub – metacentric, acrocentric and telecentric chromosomes.
- Q10. Define the following:
(i) Synapsis (ii) Synaptonemal Complex (iii) Bivalent
- Q11. Draw a neat labeled diagram of Endoplasmic Reticulum.
- Q12. What are the functions of the three types of plastids in plant cells?
- Q13. Plants and animals grow by mitotic cell division. What differences do they exhibit in their growth?
- Q14. Enlist the significance of Mitosis.
- Q15. Explain the structure and function of the following:
(i) Golgi Apparatus (ii) Lysosomes
- Q16. How does cytokinesis in plant cells differ from that of animal cells?
- Q17. Describe Anaphase of Mitosis. How does it differ from Anaphase – I of Meiosis?
- Q18. Name the stage of cell cycle at which the following events occur:
(i) Amount of DNA per cell doubles
(ii) Exchange of parts of chromatids between homologous chromosomes takes place.
(iii) Cell plate formation takes place.
(iv) Chromosomes are shortest and thickest.
(v) Chromosomes cluster at opposite poles of the cell.
- Q19. Why is plasma membrane described as protein icebergs in a sea of lipids? Draw a neat labeled diagram to explain.
- Q20. Describe the EM structure of the interphase nucleus.



COMPUTER SCIENCE

Answer the following questions in the class register:

- Q1. What are the advantages of python programming language?
- Q2. What is application software? Why is it required?
- Q3. Differentiate between compiler and interpreter.
- Q4. What is the difference between interactive mode and script mode in python?
- Q5. Describe following cybercrimes:
 - (i) Cyber Bullying
 - (ii) Cyber Stalking
- Q6. What is cyber safety? Why is it important?
- Q7. Define cookies. How are they used by websites to track you?
- Q8. What is cyber crime? How can you report it?
- Q9. Write a python program that accepts radius of a circle and prints its area and circumference.
- Q10. Write a python program to input a number and print its table with proper format.



ENGINEERING GRAPHICS

Attempt these questions in EG file.

- Q1. Divide a given line AB, in the ratio 3:5:6.
- Q2. Construct a right angle having hypotenuse equal to 65 mm and the median from the angular point O makes the angle with the hypotenuse equal to 40° .
- Q3. Construct a triangle having its base equal to 55 mm and its angle are in the ratio of 4:6:8.
- Q4. On a given line AB, construct an angle BAC of 72° . Indicate angles of 36° & 108° in that figure.
- Q5. Construct a rectangle having each of its diagonals equal to 70 mm and the included angle between them equal to 45° .
- Q6. Construct a trapezium having the difference of its diagonal equal to 30 mm.
- Q7. On a given line AB of length 30 mm, construct by common method, Triangle , Square, Pentagon, wHeptagon, Octagon, Nanogon and Decagon.
- Q8. Construct curves of parabola by using methods of intersecting arcs and by using methods of intersecting lines. Use suitable and convenient sizes .
- Q9. By using different methods , draw ellipses, keeping major axis equal to 100 mm and minor axis as 68 mm.
- Q10. Print freehand letters from A to Z numbers from 1 to 10, 5 mm in height. Repeat it 10 times.



ACCOUNTANCY

Attempt these questions in your register.

Q1. Define the following basic accounting terms with examples:

- i. Capital
- ii. Asset
- iii. Expenses
- iv. Profits
- v. Sales
- vi. Revenue

Q2. Explain the following accounting conventions:

- i. Full disclosure
- ii. Materiality
- iii. Conservatism

Q3. Show an accounting equation for the following transactions of param:

- i. Started business with cash ₹60,000, goods ₹30,000 and furniture ₹10,000
- ii. Purchased goods on credit ₹12,000 and for cash ₹18,000
- iii. Goods costing ₹ 40,000 sold at a profit of 25%. Half the payment received in cash.
- iv. Paid for commission ₹2,000 and for salaries ₹4,000
- v. Bought a scooter for personal use ₹20,000
- vi. Paid to creditors ₹10,000
- vii. Rent outstanding ₹10,000
- viii. Wages paid ₹1,000

Q4. On February 24, 2018 Neha Saxena was appointed as manager in the firm with a salary of 40,000 per month. State whether this event will be recorded in the books of accounts? Give reasons.

Q5. Give the meaning of the term “expenditure”.

Q6. Dr. Kamal, a homeopathy doctor in practice has been advised by his accountant to maintain his accounts on accrual basis instead of the presently followed cash basis of accounting. Do you agree with the advice of the accountant. Give reasons.

Q7. Rohan started a retailing business on Oct 1, 2014. He desires that he should prepare first profit and loss account and balance sheet on March 31, 2015. You are required to appraise his decision and ascertain whether his decision is justified.



Q8. Record the following transactions in the Journal of Ashoka Furniture Traders:

2018		₹
Jan 1	Started business with cash	50,000
Jan 2	Deposited into bank from his savings account	3,50,000
Jan 10	Purchased machinery of ₹10,000. An old machine (personal) valued at ₹15,000 was given in exchange and balance was paid by cheque. IGST was levied and charged at 12%	
Jan 15	Paid installation charges of machinery	2,000
Jan 20	Purchased timber from Singh and Co. of the list price of ₹20,000 plus CGST and SGST at 6% each. He allowed 10% trade discount	
Jan 25	Timber costing ₹5,000 was used for furnishing the office	
Jan 31	Sold furniture to Rakesh of the list price ₹10,000 and allowed him 10% trade discount. Charged CGST and SGST at 6% each.	
Jan 31	Old furniture valued at ₹500 was taken from Rakesh in exchange. CGST and SGST at 6% each was paid.	
Feb 10	Sent cheque to Singh & co. in full settlement	19,000
Feb 15	Received from Rakesh in full settlement	9,000
Feb 20	Paid wages	15,000
Feb 25	Issued a cheque for ₹5,000 in favour of the landlord for rent of February	



BUSINESS STUDIES

Attempt these questions in your register.

- Q1. Write the difference between economic and non economic activities.
- Q2. Rohan sells his video game to his friend at a profit of Rs 2000. Will it be considered as a business? State the feature of business which is being highlighted in the given example.
- Q3. Misha took advanced fashion designing course at Pearl Institute to become fashion designer. After completion of the course she got the job in a company. Identify and explain the type of economic activity Misha is engaged in.
- Q4. How is sole proprietorship better than any other form of business?
- Q5. “Karta is the most active member of Joint Hindu Family business”. Comment.
- Q6. ‘Business is an institution organised and operated to provide goods and services under the incentive of earning profit’. Discuss by highlighting the features of business.
- Q7. What is a business risk? State and explain the nature of business risk.
- Q8 ‘Profit maximization can’t be the sole objective of a business’. Comment.
- Q9 Tushar runs a well known fashion store in Mumbai. He procures garments from different fashion designers and sells them to dealers all over country. He also owns a godown to hold surplus stock. Tushar took a loan of Rs 1000000 from Kotak Bank. He also has taken insurance policy for his business. Identify and explain the auxiliaries to trade being used by Tushar in his business by quoting the lines from given case.



ECONOMICS

Attempt these questions in your class register.

Q1. 'Statistics, although helpful in making data comparisons and forecasting the behaviour of economic variables, may also have certain shortcomings.' State any three limitations of statistics in this regard.

Q2. Present the following information using a percentage bar diagram:

Years	2015	2016
Wheat production (in kg)	400	1200
Rice production (in kg)	600	200
Oil seeds production (in kg)	500	600

Q3. 'All statistics are numerical statements of facts but all numerical statements of facts are not statistics.' Discuss giving suitable points.

Q4. Explain the most suitable method of primary data collection in case the information is to be obtained from respondents who are literate and spread over a wide area. Also, state one merit and demerit each of this method.

Q5. Differentiate between the following with the help of examples:

- (a) Geographical and chronological classification
- (b) Exclusive and inclusive series

Q6. (a) Explain the method of systematic random sampling with the help of an example.

(b) Discuss the advantages of using sampling over census method of data collection.

Q7. Represent the following data using a suitable bar diagram:

Year	Humanities	Commerce	Science
2005	400	350	250
2006	650	350	500
2007	200	500	300

Q8. Present the following information using a pie diagram:

Items of expenditure	Food	Clothing	Rent	Others
Total expenditure (₹)	7000	3000	8000	2000

Q9. Explain the most suitable method of primary data collection when a high degree of accuracy is required and the reactions of the respondents are considered to be important. Also, state one merit and demerit each of this method.



PSYCHOLOGY

Answer the following questions in the register.

Q1. Discuss the following in detail:

- a. Psychological Testing
- b. Observation Method
- c. Interview Method
- d. Case Study Method

Q2. Prepare a case profile on any one of the psychological disorders mentioned in the book.



PHYSICAL EDUCATION

Answer the following questions in the register:

- Q1. Define Physical Education and explain its aim and objectives in detail.
- Q2. Name the careers available in the field of physical education in India. Discuss the performance related careers in detail.
- Q3. Elucidate about the development of values through Olympic Movement.
- Q4. Write a detailed note on Indian Olympic Association.
- Q5. Briefly explain International Olympic Committee.
- Q6. Write short notes in brief on the following.
 - i) Olympic Moto ii) Olympic Flag iii) Olympic Oath.
- Q7. Define physical fitness and wellness. Elaborate the importance of physical fitness and wellness in detail.
- Q8. Briefly explain the components of physical fitness and wellness.
- Q9. Discuss the objectives of adaptive physical education in detail.
- Q10. Describe in detail the role of various professionals for children with special needs.



INFORMATICS PRACTICES

Answer the following questions in the register.

1. Briefly explain the salient features of Python.
2. What is the difference between interactive mode and script mode in Python?
3. What are the advantages of python programming language ?
4. What are the demerits of social networking?
5. What are the privacy and security features being provided by web browsers?
6. What do you mean by cybercrime?
7. How do websites crack us?
8. Differentiate between hacker and cracker.
9. How will you identify from a URL whether the website you are visiting is safe or not?
10. What steps you should take to protect yourself from online fraud?



GEOGRAPHY

On the outline political map of the world, mark the following-

1. Distribution of oceans and continents
2. Major and minor plates
3. Distribution of earthquakes and volcanoes
4. Mid Oceanic ridge
5. Major ocean currents
6. Climatic regions
7. Ecological Hotspots

On the outline political of India, mark the following-

1. Political divisions
2. Latitudinal and longitudinal extension
3. Standard Meridian.
4. Neighbouring countries
5. Annual rainfall
6. Natural vegetation
7. Physical features
8. Major rivers
9. Directions of S. W. and N. E. monsoon winds
10. Climatic Regions according to Koeppen`s scheme
11. Biosphere Reserves
12. Major soil types
13. Earthquake Hazard Zones
14. Tropical Cyclone Hazard Zones
15. Drought prone areas
16. Flood Hazard Zones



POLITICAL SCIENCE

Instructions:

All the questions are compulsory.

Answer each question in 200-300 words.

Provide bibliography or source of every answer.

Consult the NCERT book as suggested by CBSE.

Do the holiday homework in a separate notebook.

Read newspaper daily.

1. Right to constitutional remedies is the heart and soul of the constitution.” Who made this statement and why?
2. “The Election Commission of India has a wide range of functions.” Explain this statement.
3. Indian democracy is now ready to shift from First Past the Post System to Proportional Representation. Do you agree with this statement? Give your reason.
4. Highlight the main points of Cabinet Mission Plan.
5. Briefly write about Preventive Detention.
6. Name the states in India with bi-cameral legislature.
7. Define Objectives Resolution of the Constituent Assembly. How was the Constitution Assembly formed?
8. Mention any two political rights given by the Indian Constitution.
9. Write short notes on-
 - a) Fundamental Duties
 - b) Right to Property
 - c) NHRC
10. Define – Constitution, Constituent Assembly, Panchayati Raj, Direct and Indirect democracy.
11. Why is it necessary for a country to have a clear demarcation of powers and responsibilities in the Constitution? What would happen in the absence of such a demarcation?
12. Collect cartoons from various newspapers and paste them in the notebook. Explain what are the various issues that they are concerned with? Which political concept do they highlight?



PAINTING

1. Draw sketches from Life and Nature in a sketch book. (Minimum 30 sketches)
2. Any two Still Life drawings on a half imperial super white/cartridge sheet.
3. Learn thoroughly the chapter : Prehistoric Rock Paintings

SPS ROHINI