



**St. Mary's School, Dwarka**  
**Holiday Homework**  
**Std. XII**  
**Week 4**  
**Worksheet 4**

**Subject: English**

**Q1. Read the following passage and answer the questions that follow:**

There is no denying that the major function of the army is to maintain law and order in times of deep crisis. However, we must not forget that the need to maintain law and order also arises in normal times. It is in these times that we need another force that **compels** citizens to obey the law and to act with due regard to the rights of others. The force also protects the lives and the properties of law-abiding citizens.

Laws are essentially made to secure the personal safety of the citizens of a country. They aim to prevent different types of crimes that pose threat to the security of people and safety of their property, such as larceny, murder and numerous other illegal practices involving **violence** of any type. Besides ensuring security of the property of the citizens against theft and damage, laws also try to protect the rights of communities and castes to carry out their customs and ceremonies, so long as they do not conflict with the rights of others.

It is important to note that the enforcement of laws multiplies the duties and responsibilities of citizens towards themselves. Those among them, who can be identified as good citizens, obey these laws and take care that everything they do is done with due regard to the rights and well-being of others. Sadly, however, there are people who do not show a natural keenness to understand the true significance of laws.

These people, who can be called bad citizens, often seem to be reluctant in terms of their willingness to follow laws. Such citizens are only **restrained** from breaking these laws by fear of the consequence of their actions. That is why it becomes necessary for the law-enforcing agencies to take steps to compel a bad citizen, so that they may start acting as a good citizen.

It is significant to note in this regard that the supreme control of law and order in a State is usually in the hands of the home minister who is responsible to the State Assembly. He/she is assisted by a number of bureaucrats, including the Home Secretary, besides additional and joint secretaries. The Inspector General of Police, who heads the police force in a state, carries out the orders issued by the Home Ministry. He / she too has a hierarchy of police officers under him. Thus, to maintain law and order in any state, there is a vast chain of officials.

**Based on the reading of the passage, answer the following:**

**(5)**

i. Give the meaning of each of the following words as used in the passage.

One word answer or short phrases will be accepted.

a) violence

b) restrained

ii. What does the force or law help in?

iii. State the role played by the police in the day- to -day life of man.

iv. Who has the supreme control of law and order situation of the state? How?

v. Briefly describe the importance of laws.

Q2. You have received an invitation from the Principal and staff of Govt Senior Secondary School, Rajakhera which is going to celebrate its annual function on 6th February 20– at 03:00 p.m. Dr Pradeep Bhatia will be the Chief Guest of the function. Write a formal reply for not being able to accept the invitation. (3)

Q3. You are Neeti/ Nitin of B-17, Avas Vikas, Jaipur and have been invited by your friend Malinee, House No. 152, Rajshree Apartments, Kota at her sister's engagement on 27th November 20.- at 4:00 p.m. at Hotel Deep Akash. Write an informal reply declining the invitation. (3)

Q4. By 2050, India will be amongst the countries which will face acute water shortage. You are highly alarmed and terrified of the future world without water. As Rita/Raman Sethi, write an article on "Save water- are we doing enough?" for the local daily in 150-200 words. (4)

**Answer the questions in 30-40 words:**

**(2x2=4)**

Q5. How is Hana's perspective about the white man different from Yumi's perspective?

Q6. In what context does Hana remember General Takima? What does she infer?

Q7. As Franz, write a notice informing students of your school that German would be taught in school instead of French. (3)

Q8. How does "The Tiger King" criticize the hunting culture prevalent during its time?  
(Word limit- 80- 100 ) (3)

## **Subject: Informatics Practices**

### **Q1 Choose the correct option**

**1x5=5**

- (1) To create an empty Series object, you can use :
- (a) pd.Series(empty)
  - (b) pd.Series(np.NaN)
  - (c) pd.Series()
  - (d) all of these
- (2) To get the number of dimensions of a Series object, \_\_\_\_\_ attribute is displayed.
- (a) index
  - (b) size
  - (c) itemsize
  - (d) ndim
- (3) 5. To get the number of elements in a Series object, \_\_\_\_\_ attribute may be used.
- (a) index
  - (b) size
  - (c) itemsize
  - (d) ndim
- (4) 8. To display third element of a Series object S, you will write \_\_\_\_\_.
- (a) S[:3]
  - (b) S[2]
  - (c) S[3]
  - (d) S[:2]
- (5) Missing data in Pandas object is represented through:
- (a) Null
  - (b) None
  - (c) Missing
  - (d) NaN

### **Q2**

**2**

Given a DataFrame df:

	Age	Name	Weight
0	15	Arnav	42
1	22	Charles	75
2	35	Guru	66

Write a program to display only the Weight of first and third rows.

Q3 . Dictionary S\_marks contains the following data:

**2**

S\_marks = {'name': ['Pashmi', 'Harsh', 'Ganesh', 'Priya', 'Vivek'], 'Grade': ['A1', 'A2', 'B1', 'A1', 'B2']}

Write a statement to create dataframe called df. Assume that Pandas has been imported as pd.

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Q4 Write a program to create a Series object that stores the table of number 5.

Note - Use arrange function

**2**

Q5 Write a program to create a Dataframe storing salesmen details (name, zone, sales) of five salesmen.

**2**

Q6 A list stores three dictionaries each storing details, (old price, new price, change). Write a program to create a dataframe from it.

**2**

Q7 Three Series objects store the marks of 10 students in three terms. Roll numbers of students from the index of these Series objects. The Three Series objects have the same indexes.

Calculate the total weighted marks obtained by students as per following formula:

**3**

Final marks = 25%. Term 1 + 25% Term 2 + 50% Term 3

Store the Final marks of students in another Series object.

Q8 What is digital footprint? Why is it so important? 2

Q9 What is plagiarism? How can you avoid plagiarism while referring to someone's else's creation? 2

Q10 What is cyber bullying? 2

**Subject: Economics**

Q1. Explain the currency authority function of Central Bank.	2
Q2. Explain lender of the last resort function of the Central Bank.	2
Q3. Explain the banker to the government function of the Central Bank.	2
Q4. Explain the meaning of Cash Reserve Ratio and Statutory Liquidity Ratio.	2
Q5. State three main functions of commercial bank. Explain any one of them.	2
Q6. Explain any two functions of a Central Bank.	3
Q7. What is bank rate policy? How does it work as a method of credit control?	
Q8. What are open market operations? How do these work as a method of credit Control?	3
Q9. State three methods of credit control used by the Central Bank.	3
Q10. Explain any two main functions of commercial banks.	3

**Subject: Mathematics**

**Each question carries 3 marks.**

<b>Q1</b>	Find the derivative of $\frac{\sqrt{x}(x+4)^{3/2}}{(4x-3)^{4/3}}$ w.r.t x.
<b>Q2</b>	If $x^m y^n = (x+y)^{m+n}$ , prove that $\frac{dy}{dx} = \frac{y}{x}$ .
<b>Q3</b>	Differentiate the following functions with respect to x: (i) $x^{x^2-3} + (x-3)^{x^2}$ (ii) $y = x^{\sin x} + (\sin x)^x$
<b>Q4</b>	Differentiate $\sin^{-1}(2x\sqrt{1-x^2})$ with respect to $\tan^{-1}\left(\frac{x}{\sqrt{1-x^2}}\right)$ , if $-\frac{1}{\sqrt{2}} < x < \frac{1}{\sqrt{2}}$
<b>Q5</b>	Differentiate $\tan^{-1}\left(\frac{1+ax}{1-ax}\right)$ with respect to $\sqrt{1+a^2x^2}$
<b>Q6</b>	If $y = \log\left\{x + \sqrt{x^2 + a^2}\right\}$ , prove that $(x^2 + a^2)\frac{d^2y}{dx^2} + x\frac{dy}{dx} = 0$
<b>Q7</b>	$y = x^x$ , prove that $\frac{d^2y}{dx^2} - \frac{1}{y}\left(\frac{dy}{dx}\right)^2 - \frac{y}{x} = 0$ .
<b>Q8</b>	If $x = a \cos \theta + b \sin \theta$ and $y = a \sin \theta - b \cos \theta$ , prove that $y^2 \frac{d^2y}{dx^2} - x \frac{dy}{dx} + y = 0$
<b>Q9</b>	If $y = \sin(\sin x)$ , prove that $\frac{d^2y}{dx^2} + \tan x - \frac{dy}{dx} + y \cos^2 x = 0$
<b>Q10</b>	If $x = \sin\left(\frac{1}{a} \log y\right)$ , show that $(1-x^2)y_2 - xy_1 - a^2y = 0$

## **Subject: Business Studies**

- Q.1 “In one of the principles of scientific management, Taylor emphasises that there should be equal division of work and responsibility between workers and management and management should work almost side by side with workers helping and smoothing the way for them. Identify the principle. 1
- Q.2 Purchase manager of ABC Ltd. Gave order to supply raw material @ Rs.1,000 per quintal to his relative whereas same quality raw material is available @Rs.900 per quintal by another supplier. Which principle of management is violated here? 1
- Q.3 How does coordination ensure unity of action? 1
- Q.4 “Every organization whether it is government owned, a privately owned business or a company in the private sector requires planning.” Name and explain the feature of planning highlighted in the above statement. 1
- Q.5 Alia Enterprises, a company was initially producing grinders and mixers. Now, with the changing scenario and emerging trends of working women there is a greater demand for a product which is more efficient and a multi-tasker. On analyzing the situation, the company decided to penetrate into the market for producing Food Processor.
- a) Which feature of management is highlighted here?
- b) Which level of management will take this decision? 1
- Q.6 ABC Ltd. is engaged in producing electricity from domestic garbage. There is almost equal division of work and responsibilities between workers and the management. The management even takes workers into confidence before taking important decisions. All the workers are satisfied as the behaviour of the management is very good.
- State the principle of management described in the above paragraph. 3
- Q.7 Explain with the help of an example 'differential piece wage system' given by Taylor. 3
- Q.8 Two years ago, Madhu completed her degree in food technology. She worked for some time in a company that manufactured chutneys, pickles, and murabba. She was not happy in the company and decided to have her own organic food processing unit for the same. She set the objectives and the targets and formulated an action plan to achieve the same. One of her objectives was to earn a 10% profit on the amount invested in the first year. It was decided that raw materials like fruits, vegetables, spices, etc. will be purchased on three month's credit from farmers cultivating only organic crops. She also decided to follow the steps required for the marketing of the products through her own outlets. She appointed Mohan as the Production Manager who decided the exact manner in which the production activities were to be carried out. Mohan also prepared a statement showing the number of workers that will be required in the factory throughout the year. Madhu informed Mohan about her area wise sales target for different products for the forthcoming quarter. While working on the production table, a penalty of X 100 per day for not wearing caps, gloves, and apron were announced. Quoting lines from the above paragraph, identify and explain the different types of plans discussed. 4
- Q.9 'Science is a systematised body of knowledge that explains certain general truths or the operation of general laws'. Based on the statement identify and state the characteristics of management that establish it as a science. 4
- Q.10 After completing a diploma in Bakery and Patisserie, Payal sets up a small outlet at Goa Airport to provide a healthy food option to the travellers. To begin with, she has decided to sell five types of patties, three types of pizzas and low sugar muffins in four flavours. Thus, by deciding in advance what to do and how to do, she is able to reduce the risk of uncertainty and avoid overlapping and wasteful activities. But

sometimes her planning does not work due to some unavoidable circumstances like cancellation of flights due to bad weather conditions, government alert, etc. which adversely affects her clientele. In the context of the above case:

- a. Identify and explain the points highlighting the importance of planning mentioned in the above paragraph.
- b. Describe briefly the limitation of planning which adversely affects Payal's business.

6



## Subject: Accountancy

- Q.1 R Ltd. paid Rs.60,000 as instalment for Machinery purchased on credit which included interest of Rs.10,000. How will this payment be presented while preparing Cash Flow Statement? 1
- Q.2 What will be the impact of cash paid to trade payables on current ratio of 8:1? State with reason. 1
- Q.3 Why do we add back preliminary expenses to net profit while calculating cash flows from operating activities? 1
- Q.4 The debt equity ratio of a company is 1:2. What is the effect of conversion of debentures into preference shares on this ratio? 1
- Q.5 How is Financial Statements Analysis useful to potential investors? 1
- Q.6 What is meant by analysis of financial statement? Explain the disadvantages. 3
- Q.7 Calculate return on Investment from the following information: 3
- Net profit after Tax Rs.6,50,000, 12.5% convertible debentures Rs 8,00,000, Income Tax 50%,  
Fixed Assets at cost Rs.24,60,000, Depreciation reserve Rs.4,60,000, Current Assets Rs. 15,00,000,  
Current Liabilities Rs. 7,00,000
- Q.8 Calculate cost of Revenue from operations from the following information: Revenue from operations Rs.12,00,000, Sale Return Rs.80,000, operating expenses Rs.1,82,000, operating ratio 92%. 4
- Q.9 Classify the following into non-current assets and current assets and give reasons for such classification: 4
- (i) A company has an operating cycle of 11 months and the expected period of realisation of trade receivables is 10 months.
- (ii) A company has an operating cycle of 11 months and the expected period of realisation of trade receivables is 12 months.
- (iii) A company has an operating cycle of 11 months and the expected period of realisation of trade receivables is 15 months.
- (iv) A company has an operating cycle of 20 months and the expected period of realisation of trade receivables is 24 months.
- Q.10 Prepare Cash Flow Statement from the following information: 6

Particulars	Note no.	31.3.2017	31.3.2016
<b>I. Equity and liabilities</b>			
<b>Shareholder's Fund:</b>			
Share capital		4,50,000	4,50,000
Reserves and Surplus	1	3,78,000	3,56,000
<b>Non Current Liabilities</b>			
Long Term Borrowings: Mortgage Loan		2,70,000	---
<b>Current liabilities</b>			
Trade Payables		1,34,000	1,68,000
Short term Provisions (provision for tax)		10,000	75,000
<b>Total</b>		12,42,000	10,49,000

<b>II. Assets</b>		3,20,000	4,00,000
<b>Non- current Assets</b>		60,000	50,000
Tangible Assets			
Non Current Investment		17,000	19,000
<b>Current Assets</b>		2,10,000	2,40,000
Current investments		4,55,000	2,10,000
Inventory		1,80,000	1,30,000
Trade Receivable			
Cash and cash equivalents			
<b>Total</b>		12,42,000	10,49,000

### Notes to Accounts

#### 1. Reserves and Surplus

General Reserve	3,10,000	3,00,000
Surplus i.e. Balance in Statement of P/L	68,000	56,000
	<b>3,78,000</b>	<b>3,56,000</b>

#### Additional Information:

- i) Investments costing Rs.8,000 were sold during the year for Rs.8,500
- ii) Provision for Tax made during the year was Rs.9,000
- iii) A part of the fixed assets costing Rs.10,000 was sold for Rs.12,000 during the year and profit was included in the Statement of Profit and Loss
- iv) Dividend paid during the year amounted to Rs.40,000