

**General Instruction-**

1. All the questions are compulsory.
2. Marks are given against the questions. Answer the questions accordingly.

**SECTION- A (STATISTICS)**

- 1) Statistics in singular sense is-..... 1
- 2) A questionnaire is-..... 1
- 3) Define multiple bar diagram. 1
- 4) Give any two essentials of a good average. 1
- 5) Define diagrammatic presentation of data. How is it different from tabulation? 3

**OR**

Draw the histogram for the following distribution-

Wages	10-15	15-20	20-25	25-30	30-40	40-60
No. of works	4	16	24	32	40	48

- 6) Draw the pie diagram for- 3

Status	Marginal workers	Main workers	Non-workers
Population ( crore)	9	31	62

- 7) a) Define series. 1+3=4
- b) Construct continuous and cumulative series for the following-  
36,22,44,43,21,32,33,34,23,24,25,26,28,40,42.
- 8) a) Define sample. How is it different from population? 2+2=4
- b) Explain stratified sampling with two merits and two demerits.
- 9) The government and policy makers use statistical data to formulate suitable policies of economic development. Illustrate with example. 4

**OR**

- a) Which type of data involves less time and less expense? 2+2=4
- b) Differentiate between direct personal and indirect oral investigation.

- 10) Find mean, median and mode for the following- 2+2+2=6

Variable	0-100	100-200	200-300	300-400	400-500	500-600
F-	3	7	15	9	5	5

- 11) Find standard deviation and its co-efficient from the following- 6

Marks	0-10	10-20	20-30	30-40	40-50
No. of students	2	6	10	6	2

Find mean deviation using mean and median for the following-

C I	20-30	30-40	40-60	60-80	80-90
F-	5	10	20	9	6

- 12) Find rank correlation from the following- 6

X	90	88	78	78	74	70	65	62
Y	18	25	30	30	30	42	38	47

**OR**

Find out coefficient of correlation from the following-

X-	50	54	56	58	59	60	61	62	65	75
Y-	20	22	24	30	32	36	38	40	44	54

**SECTION- B (Indian Economic Development)**

- 13) Define jobless growth. 1
- 14) What do you mean by disinvestment? 1
- 15) Give the meaning of outsourcing. 1
- 16) When was railway introduced in India? 1
- 17) Explain two fold motive of British rule in India. 3
- 18) Discuss the categories under industrial reform during planning period. 3

**OR**

Critically assess the outcome of planning period.

- 19) a) Explain demographic condition on the eve of independence. 2+2=4  
b) Write about two fold motive of British regarding industry.
- 20) a) Differentiate between economic and social infrastructure. 2+2=4  
b) Human capital and human development
- 21) Define inflation. Discuss monetary measures for controlling inflation. 4

**OR**

What are different types of inflation? Discuss the fiscal measure to control it.

- 22) What is liberalization? Explain industrial reform during planning period. 1+5=6
- 23) What do you mean by sustainable development? Write the challenges regarding sustainable development.

**OR**

Write about organic farming? Discuss its advantages. 3+3=6

- 24) a) Explain any three poverty alleviation programme for removing poverty. 6

# ACCOUNTANCY

Time : 3 hrs.

M.M:90

## GENERAL INSTRUCTIONS

- This question paper contains two parts A and B.
- All questions in both the parts are compulsory.
- All parts of questions should be attempted at one place.
- Marks for question are indicated against each question
- Answers should be brief and to the point.

### PART A

1. An accountant advised his client, who is a doctor to maintain his accounts on cash basis Is the advice of the accountant correct? (1)
2. Name the category of account that is not balanced. (1)
3. In case of errors of partial omission, will the trial balance agree? Why? (1)
4. Give the formula to calculate the annual depreciation as per 'straight line method'. (1)
5. Define briefly management accounting, social responsibility accounting and human resource accounting. (3)
6. Prepare accounting equation on the basis of the following

	<b>Amt</b>
▪ Harsha started business with cash	2,00,000
▪ Purchased goods from Naman for cash	40,000
▪ Sold goods to Bhanu costing Rs 10,000	12,000
▪ Bought furniture on credit	7,000
▪	

7. Prepare a bank reconciliation statement from the following particulars.

On the 31<sup>st</sup> December, 2015, I had an overdraft of Rs. 7,500 as shown by my pass book.

- I have issued cheques amounting to Rs. 2,500 of which cheques worth Rs. 2,000 only seem to have been presented for payment.
- Cheques amounting to Rs. 1,000 have been paid in by me on the 30<sup>th</sup> December but out of these only Rs. 750 were credited in the pass book.
- I also find that a cheque for Rs. 100 which I had debited to bank account in my books has been omitted to be banked.
- There is debit in my pass book Rs. 250 for Interest.
- An entry of Rs. 300 of a payment by a customer directly into the bank appears in the pass book.
- My pass book also shows a credit of Rs. 600 to my account being interest on my investment collected directly by my bankers. (3)

8. Accounting information refers to the financial statements. The information provided by these statements can be categorized into various types. Briefly discuss them. (3)

9. Enter the following transactions in a simple cash book for December 2015.

Particulars	Amt.
Dec	
1 Cash in hand	12,000
5 Cash received from Srikant	4,000
7 Rent paid	2,000
10 Purchased goods from Vengasarkar for cash	6,000
15 Sold goods for cash	9,000
18 Purchased stationery	300
22 Cash paid to Amarnath on account	2,000
28 Paid salary	1,000
30 Paid rent	500 (3)

**10.(1)** From the following information, draw up a trial balance in the books of Shri Manmohan as on 31<sup>st</sup> March, 2015.

Capital Rs. 1,12,000; purchases Rs. 28,800; discount allowed Rs. 960; carriage inwards Rs. 6,960; carriage outwards Rs. 1,840; sales Rs. 48,000; return inwards Rs. 240; return outwards Rs. 560; rent and taxes Rs. 960; plant and machinery Rs. 64,560; stock on 1<sup>st</sup> April, 2014 Rs. 12,400; sundry debtors Rs. 16,160; sundry creditory Rs. 96,00; investment Rs. 2,880' commission received Rs. 1,440; cash in hand Rs. 80; cash at bank Rs. 8,080; motors cycle Rs. 27,680 and stock on 31<sup>st</sup> March, 2014 (not adjusted) Rs. 16,400.

(2) Sparsh Ltd with help of their accountant recorded bribe given to government officers as business gift in the books of account. Identify the value being violated by the accountant. (3)

**11.** International Accounting Standards Board (IASB) has a number of objectives to serve State any four such objectives. (4)

**12.** Rectify the following errors using suspense account where necessary.

(1) Goods amounting to Rs. 18,500 sold to Manish were correctly entered in sales book but posted to Manish's account for Rs. 20,000.

(2) Sales return book was overcast by Rs. 2,000.

(3) Goods invoiced at Rs. 11,500 and debited on 21<sup>st</sup> December to Puneet were returned on the 25<sup>th</sup> and taken into stock on 31<sup>st</sup> December but no entries were in the books of account.

(4) The balance in the account of Mr Ankit Rs. 6,000 has been written –off as bad but no other account has been debited. (4)

**13.** Explain full disclosure principle. Identify any two values reflected in full disclosure principle. (4)

**14.** Journalise the following transaction in the books of Divij.

(1) Raunak, who owed him Rs. 7,000 was declared insolvent. A final compensation of 60 paise in a rupee was received from him.

(2) Provide interest on capital of Rs. 5,00,000 @ 15% per annum for 8 months.

(3) He paid RS. 2,500 in cash as wages on installation of a machinery.

(4) Divij sold goods to Ayaan worth RS. 10,000, allowing him a trade discount of 5% and a cash discount of 10%. Ayaan paid 1/4<sup>th</sup> of the amount in cash at time of purchase. (4)

15. On 1<sup>st</sup> January, Rajeev who owes Rs.30,000 to Renu accepts a 3 months bill for the amount. On the date of maturity, Rajeev, not being able to meet the bill, offers Renu Rs.12,000 and ask her to draw another bill for 3 month for the balance plus interest at 12% per annum. Renu agrees to this proposal. Pass the necessary journal entries in the books of Renu and Rajeev. (6)

16. On 1<sup>st</sup> January, 2012, Satkar Transport Ltd purchased 3 buses for RS.10,00,000 each .On 1<sup>st</sup> July, 2014, one bus was involved in an accident and was completely destroyed and Rs.7,00,000 were received from the insurance company in full settlement .Depreciation is written-off @15% per annum on diminishing balance method. Prepare bus account from 2012 to 2015. Books are closed on 31<sup>st</sup> December, every year. (6)

## PART B

17. Give the formula to calculate the 'cost of goods sold'.

18. State one major feature of not-for-profit organizations.

19 .With the help of a diagram, show the relationship of the accounting system with the other functional management information system.

20 .Amitoj maintains her account on single enter system. Calculate her profit on 31<sup>st</sup> March, 2015 from the following information.

Liabilities and Assets	1 <sup>st</sup> April, 2014 amt.	31 <sup>st</sup> March, 2015 amt.
Cash in hand	30,000	10,000
Bank balance	90,000	70,000
Furniture	40,000	40,000
Stock	20,000	60,000
Creditors	80,000	60,000
Debtors	60,000	80,000

During the year, her drawings were rs.20,000 and additional capital invested rs.40,000.

21 .From the information given below, prepare receipts and payment account of Arihant Club, Delhi for the year ending on 31<sup>st</sup> December, 2015.

Particulars	Amt	Particulars	Amt
Cash as at 1-1-2015	1,02,500	Sales of old bats etc.	5,000
Subscription recived (including rs 4,000 for 2014 and rs 6,000 for 2016)	2,15,000	12% General investments (made on 1-08-2015)	50,000
Upkeep of fields	22,000	12% Tournament fund investments (made on 1- 08- 2015)	1,50,000
Admission fees	4,000	Tournament expenses	1,20,000
Salaries	60,000	Sales of old furniture (cost rs 10,000)	6,000
Drama expenses	45,000	Bats of old furniture (cost rs 10,000)	70,000
Life membership subscription	10,000	Prtoceeds of drama purchased	95,000
News papers purchased	15,000	Interest on 12% general	1,250

		investment receivable	
Book purchased	10,000	Interest on 12% tournament fund	3,750
Donations receivable (on 1-08-2015)	50,000	Printing and stationery	10,000
Subscription for tournament receivable (on 1-08-2015)	1,50,000	Furniture	25,000
Municipal taxes	4,000	Subscription received for governor's party	3,45,000
Charity given	35,000		
Sale of old news papers	4,500		

22 .Briefly explain the various components of a computer hardware.

23. The following balances have been extracted from the trial of M/s Haryana Chemical Ltd. You are required to prepare a trading and profit and loss account and balance sheet as on 31<sup>st</sup> December,2015 from the given information.

Name of Accounts	Amt	Name of Accounts	Amt
Opening stock	50,000	Sales	3,50,000
Purchases	1,25,500	Purchases return	2,500
Sales return	2,000	Creditors	25,000
Cash in hand	21,200	Rent	5,000
Cash at bank	12,000	Interest	2,000
Carriage	100	Bills payable	1,71,700
Freehold land	3,20,000	Capital	3,00,000
Patents	1,20,000		
General expenses	2,000		
Sundry debtors	32,500		
Building	86,000		
Machinery	34,500		
Insurance	12,400		
Drawings	10,000		
Motor vehicle	10,500		
Bad debts	2,000		
Light and water	1,200		
Trade expenses	2,000		
Power	3,900		
Salary and wages	5,400		
Loan 15%(1-9-2015)	3,000		
	<b>8,56,200</b>		<b>8,56,200</b>

#### Adjustments

- Closing stock was valued at the end of the year rs 40,000.
- Salary amounting rs 500 and trade expenses rs 300 are due.
- Depreciation charged on building and machinery are @ 4% respectively.
- Make a provision of 5% on sundry debtors.

Or

On 31<sup>st</sup> March, 2015, the following trial balance was extracted from the book of Mohan.

Particular	Amt (dr)	Amt (cr)
Capital\Drawings	50,000	3,00,000
Debtors and creditors	2,00,000	1,00,000
Loan	-	95,000
Interest on loan	3,000	-
Cash	20,000	-
Provision for doubtful debts	-	7,000

Stock(1-04-2014)	68,000	-
Motor vehicles	1,00,000	-
Bank	35,000	-
Land and buildings	1,20,000	-
Bad debts	5,000	-
Purchases and sales	6,60,000	11,00,000
Returns	80,000	15,000
Carriage outward	25,000	-
Carriage inward	30,000	-
Salaries	90,000	-
Rent and insurance	30,000	-
Advertising	35,000	-
Discount	-	5000
General exp	34,000	-
Bills receivable and bills payable	60,000	20,000
Rent received		3000
	16,45,000 -	16,45,000

Prepare trading and profit and loss account for the year ended on 31<sup>st</sup> March 2015 and balance sheet as on that date after making adjustment for the following.

- Prepaid insurances.2000.
- Provision for doubtful
- Depreciate land and building at 2 1\2% per annum and motor vehicles at 20% per annum.
- Salaries outstanding Rs. 2000.
- Provision for doubtful debts is to be maintained at 5% on sundry debtors.
- Stock-in-hand on 31<sup>st</sup> March, 2015 was valued at rs 70,000

24. The balance sheet of Adhikari Club on 1<sup>st</sup> April, 2014 and the receipts and payments account for the year ended 31<sup>st</sup> March, 2015 are given below

#### Balance Sheet

as at 1<sup>st</sup> April,2014

Liabilities	Amt	Assets	Amt
Capital fund	4,20,000	Premises	4,00,000
Creditors for stationery	10,000	Furniture	20,000
		Bank balance	10,000
	<b>4,30,000</b>		<b>4,30,000</b>

#### Receipts and Payments Account

For the year ended 31<sup>st</sup> March ,2015

Receipts	Amt.	payments	Amt.
To Balance b\ d	10,000	By Electricity charges	12,000
To Subscriptions	86,000	By Furniture	30,000
To Donations (Not to be capitalised)	33,000	By Salaries	60,000
To Sundry receipts	27,500	By Creditors for stationery	25,000
		By General expenses	21,000
		By Balance c\ d	85,000
	<b>1,56,000</b>		<b>1,56,000</b>

**Additional Information**

- I. On 30<sup>th</sup> September, 2014, the old furniture was donated to the Red Cross and new furniture was purchased on 1<sup>st</sup> October, 2014. Depreciation @ 10% per annum is to be provided on the furniture.
- II. On 31<sup>st</sup> March, 2015, the creditors for stationery were rs.4,800 and the value of the unused stationery was rs.5,400.
- III. A payment of Rs.5,000 for stationery by the club was to be debited to the general expenses.

You are required to prepare the income and expenditure account for the year ended 31<sup>st</sup> March, 2015 and the balance sheet as at that date.

**Or**

From the following information of a club, prepare income and expenditure account for the year ended 31<sup>st</sup> March, 2015 and a balance sheet as on that date.

**Cash Book**

<b>Receipts</b>	<b>Amt.</b>	<b>Payments</b>	<b>Amt.</b>
To Member's Subscription	50,000	By Upkeep of pavilion	20,000
To Member's admission	3,000	By Expenses regarding tournaments	7,000
To Sale of old balls, bats, etc	500	By Rates and insurance	2,000
To Hire of ground	3,000	By telephones	500
To Subscription for tournament	10,000	By Printing and stationery	1,000
To Drawn from bank	40,000	By General charges	500
To Donations	1,00,000	By Secretary's honorarium	1,700
		By Grass seeds	200
		By Bats, balls, etc	7,100
		By Deposit in bank	1,66,000
	<b>2,06,500</b>		<b>2,06,500</b>

**Additional Information**

<b>Assets on 1-4-2014</b>	<b>Amt.</b>
Cash at bank	30,000
Stock of balls and bats, etc	15,000
Printing and stationery (stock)	2,000
Subscription due	5,000

Surplus on account of tournament and donations should be kept in reserve for a permanent pavilion. Subscriptions due on 31<sup>st</sup> March, 2015 is rs.7,500. Write-off 50% of bats, balls account and 25% of printing and stationery account.



DELHI PUBLIC SCHOOL, BHILAI (C.G.)

DATE : 2018

MODEL PAPER XI (MATHS), 2018

Time : 3 Hours

CLASS : XI

MATHEMATICS

M.M. : 100

GENERAL INSTRUCTIONS:

- All questions are compulsory
- The question paper consists of 29 questions divided into four sections A, B, C and D. Section A comprises 4 questions of 1 mark each, Section B comprises 8 questions of 2 marks each, Section C comprises 11 questions of 4 marks each and Section D comprises 6 questions of 6 marks each.
- All questions in Section A are to be answered in one word, one sentence or as per the exact requirement of the question.
- There is no overall choice. However internal choice has been provided in 4 questions of 4 marks each and 3 questions of 6 marks each. You have to attempt only one of the alternative in all such questions.

SECTION A

- Evaluate  $\tan \frac{13\pi}{6}$
- Find the 5<sup>th</sup> term from the end in the expansion of  $(2x + \frac{4}{x^2})^{11}$
- Find the distance of the point P(6,7,8) from x-z plane.
- Write contra positive of the statement " if the diagonals of a quadrilateral bisect each other, then it is a parallelogram ".

SECTION B

- Is it true for two sets A and B,  $P(A) \cup P(B) = P(A \cup B)$  ? Justify your answer
- Find the domain of the function defined by  $f(x) = \sqrt{9 - x^2}$
- Find the value of  $\sin \frac{\pi}{10}$
- How many 2 digit even numbers can be formed from the digits 1, 2, 3, 4, 5, if the digits can be repeated?
- Evaluate  $\sum_{k=1}^5 (2 + 3^k)$
- Find the coordinates of the fourth vertex D if three vertices of a parallelogram ABCD are  $A(3, -1, 2)$ ,  $B(1, 2, -4)$  and  $C(-1, 1, 2)$
- Show the statement "If  $x$  is a real number such that  $x^3 + 4x = 0$ , then  $x = 0$ " is true by the method of contrapositive
- Prove by using the properties of sets  $(A - B) \cup (B - A) = (A \cup B) - (A \cap B)$

SECTION C

- In a survey of 60 people, it was found that 25 read newspaper H, 26 read newspaper T, 26 read newspaper I, 9 read both H and I, 11 read both H and T, 8 read both T and I and 3 read all three newspapers, then find (i) the number of people who do not read either of the newspaper (ii) the number of people who read exactly one newspaper. Write any two advantages of reading the newspaper
- Let  $f$  be the subset of  $Z \times Z$  defined by  $f = \{(ab, a + b) : a, b \in Z\}$ . Is  $f$  a function from  $Z$  to  $Z$ ? Justify your answer

15 Solve for  $x$ ;  $2 \cos^2 x + 3 \sin x = 0$

OR

In  $\Delta ABC$ , Prove that: (i)  $a \cos A + b \cos B + c \cos C = 2a \sin B \sin C$

16 Prove that  $\cot x \cot 2x - \cot 2x \cot 3x - \cot 3x \cot x = 1$

17 Prove by principle mathematical induction that  $n(n + 1)(n + 5)$  is a multiple of 3

18 Find the square root of the complex number  $-15 - 8i$

OR

Represent the Complex number  $Z = -1 - i\sqrt{3}$  in the polar form

19 Solve the following system of inequalities graphically:  $2x + y \geq 4$ ,  $x + y \leq 3$ ,  $2x - 3y \leq 6$

20 How many words with or without meaning each of 2 vowels and 3 consonants can be formed from the letters of the word DAUGHTER?

- 21 The cable of a uniformly loaded suspension bridge in the form of a parabola. The roadway which is horizontal and 100 meter long is supported by vertical wires attached to the cable, the longest wire being 30 m and shortest being 6 m. Find the length of a supporting wire attached to the roadway 18 m from the middle.

OR

Find the equation of the Circle passing through the points (4,1) and (6,5) and whose centre is on the line  $4x + y = 16$ .

- 22 From a class of 25 students, 10 are to be chosen for an excursion party. There are 3 students who decide that either all of them will join or none of them will join. In how many ways an excursion party is chosen
- 23 The sum of three numbers in G.P. is 56. If we subtract 1,7,21 from these numbers in that order, we obtain an arithmetic progression find the numbers.

**SECTION D**

- 24 Prove that  $\cos 6x = 32 \cos^6 x - 48 \cos^4 x + 18 \cos^2 x - 1$

OR

Prove that, in any triangle ABC,  $\frac{\cos A}{a} + \frac{\cos B}{b} + \frac{\cos C}{c} = \frac{a^2+b^2+c^2}{2abc}$

- 25 The coefficients of the  $(r - 1)^{\text{th}}$ ,  $r^{\text{th}}$  and  $(r + 1)^{\text{th}}$  terms in the expansion of  $(x + 1)^n$  are in the ratio 1 : 3 : 5. Find n and r
- 26 Find the sum to n terms of the series  $3 \times 1^2 + 5 \times 2^2 + 7 \times 3^2 \dots\dots\dots$

OR

If A and G be AM and GM respectively between two positive numbers, prove that the numbers are  $A \pm \sqrt{(A + G)(A - G)}$

- 27 If the lines  $y = 3x + 1$  and  $2y = x + 3$  are equally inclined to the line  $y = mx + 4$ , find the value of m

OR

Find the equation of the line through the intersection of the lines  $x - 3y + 1 = 0$  and  $2x + 5y - 9 = 0$  and whose distance from the origin is  $\sqrt{5}$ .

- 28 i) Find derivative of  $x^2 \sin x$  using first principle.  
ii) Evaluate:-  $\lim_{x \rightarrow 0} \frac{\tan 2x - \sin 2x}{x^3}$
- 29 Calculate mean, variance and standard deviation for the following distribution

Classes	10-20	20-30	30-40	40-50	50-60	60-70	70-80
Frequency	3	7	12	15	8	3	2

A trust failed to meet its daily mean expenditure due to lack of funds, its expecting donors from all corners, if you are one of the donors, what moral values you reflect ?

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DVK  
Sumar  
8/02/2018

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- There is no overall choice. However, internal choice has been provided in 3 questions of four marks each and 3 questions of six marks each. You have to attempt only one of the alternatives in all such questions.
- Use of calculators is not permitted. You may ask for logarithmic tables, if required.

**Section-A**

1. Write all the subsets of  $\{2, (1)\}$
2. Write the negation of the statement "The number 2 is greater than 7".
3. Express the complex number  $(1 - i)^4$  in the form  $a + ib$ .
4. Find the parabola with vertex at  $(0,0)$  and passing through  $(2,3)$  and axis is along x-axis.

**Section - B**

5. Prove that  $\frac{\sin x - \sin 3x}{\sin^2 x - \cos^2 x} = 2 \sin x$ .
6. Find the equation of the line passing through  $(2,2)$  and cutting off intercepts on the axes whose sum is 9.
7. Find the square root of  $-15 - 8i$
8. Solve:  $5(2x-7) - 3(2x+3) \leq 0$ ,  $2x + 19 \leq 6x + 47$ .
9. Find the equation of the perpendicular bisector of the line joining  $(-3,5)$  and  $(7,-7)$ .
10.  $\lim_{x \rightarrow 0} (\operatorname{cosec} x - \cot x)$
11. Show that the following statement is true by the method of contra positive. "If  $x$  is an integer and  $x^2$  is even, then  $x$  is also even".
12. A coin is tossed 3 times, consider the following events. A : 'No head appears', B : 'Exactly one head appears', C : 'Atleast two heads appear'. Do they form a set of mutually exclusive and exhaustive events?

**Section - C**

13. For any three sets A, B and C if  $A \cup B = A \cup C$  and  $A \cap B = A \cap C$ , then prove that  $B = C$ .
14. Differentiate  $\sec^9 x$  from first principles.

(OR)

Differentiate  $y = \frac{x^9 - \cos x}{\tan x}$ .

15. Find the domain of definition of the function :  $y = \frac{x}{\sqrt{x^2 - 3x + 2}}$
16. Find  $n$ , if the ratio of the fifth term from the beginning to the fifth term from the end in the expansion of  $(\sqrt[4]{2} + \frac{1}{\sqrt[4]{3}})^n$  is  $\sqrt{6} : 1$ .
17. In any  $\Delta ABC$ , prove that  $(\frac{b^2 - c^2}{a^2}) \sin 2A + (\frac{c^2 - a^2}{b^2}) \sin 2B + (\frac{a^2 - b^2}{c^2}) \sin 2C = 0$ .
18. Find the length of axes of the ellipse whose eccentricity is  $\frac{4}{5}$  and whose foci coincide with those of the hyperbola  $9x^2 - 16y^2 + 144 = 0$ .

(OR)

Find the equation of the circle that passes through the points  $(1,-2)$ ,  $(3,0)$  and whose centre lies on the line  $x + 2y + 5 = 0$ .

19. Find the ratio in which the line joining the points  $(4, 8, 10)$  and  $(6, 10, -8)$  is divided by  $YZ$  - plane.
20. Express  $\frac{1+7i}{(2-i)^2}$  in the polar form.
21. Find the number of ways in which 4 boys and 4 girls be seated in a row so that
  - (i) No two girls may sit together.
  - (ii) All the girls sit together and all the boys sit together.
  - (iii) All the girls are never together.

(PTO)

22. Prove by the principle of mathematical induction that for all  $n \in \mathbb{N}$  :

$$1.3+2.3^2+3.3^3+\dots\dots\dots+n.3^n = \frac{(2n-1)3^{n+1}+3}{4}$$

(OR)

Prove by the principle of mathematical induction that for all  $n \in \mathbb{N}$  :

$$1.2.3+2.3.4+3.4.5+\dots\dots\dots+n(n+1)(n+2) = \frac{n(n+1)(n+2)(n+3)}{4}$$

23. A committee of two persons is selected from two men and two women. What is the probability that the committee will have (i) no man ? (ii) one man ? (iii) two men?

**Section – D**

24. Solve the following system of inequalities graphically :

$$2x + y \leq 24, x + y \leq 11, 2x + 5y \leq 40, x \geq 0, y \geq 0.$$

25. The 3rd, 4th and 5th terms in the expansion of  $(x + a)^n$  are respectively 84, 280 and 560, find the values of  $x$ ,  $a$  and  $n$ .

(OR)

If the coefficient of  $a^{r-1}$ ,  $a^r$  and  $a^{r+1}$  in the expansion of  $(1 + a)^n$  are in A.P., Prove that  $n^2 - n(4r + 1) + 4r^2 - 2 = 0$ .

26. Find the sum to  $n$  terms of the series  $1^2 + (1^2 + 2^2) + (1^2 + 2^2 + 3^2) + \dots \dots \dots$ ,

(OR)

Find the sum to  $n$  terms of the series :  $5+11+19+29+41+\dots\dots$

27. In a survey of 50 villages of a state, about the use of L. P. G gas as a cooking mode the following information about the families using L. P. G. gas obtained.

No. of families	0-10	10-20	20-30	30-40	40-50	50-60
No. of villages	6	8	14	10	4	8

Find the mean deviation about median for the following data. Do you think more awareness was needed for the villagers to use L. P. G. gas as a mode of cooking.

28. In a survey of 100 students, the number of students studying the various languages were found to be : English only 18, English but not Hindi 23, English and Sanskrit 8, English 26, Sanskrit 48, Sanskrit and Hindi 8, no language 24. Find : (i) How many students were studying Hindi? (ii) How many were studying English and Hindi?

29. (i) Prove that  $\cos 4x = 1 - 8\sin^2 x \cdot \cos^2 x$ .

(ii) Prove that  $\sin 20^\circ \cdot \sin 40^\circ \cdot \sin 80^\circ = \frac{\sqrt{3}}{8}$

(OR)

Prove that  $\cos^4 \frac{\pi}{8} + \cos^4 \frac{3\pi}{8} + \cos^4 \frac{5\pi}{8} + \cos^4 \frac{7\pi}{8} = \frac{3}{2}$ .

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CLASS - XI - BUSINESS STUDIES

SAMPLE PAPER

1. Name the occupation in which people work for others and get remunerated in return. (1)
2. What do you mean by joint venture? (1)
3. To which insurance, principle of indemnity is not applicable? (1)
4. Funds required for purchasing current assets is an example of \_\_\_\_\_ (1)
5. Refund of excise duty is known as \_\_\_\_\_ (1)
6. In which business are goods bought and sold through postal services? (1)
7. Where national security is concerned, which form of public enterprises is most suitable? (1)
8. Give the full form of NSIC. (1)
9. Shreeji is a well-known cardiologist of her town. Identify the type of economic activity and state its characteristics also. (1+2=3)
10. Distinguish between sole proprietorship and Partnership form of business. (3)
11. "Equity shareholders are known as the owners of the company". Do you agree? Give reasons in support of your answer? (3)
12. Pad Chikan limited is a large-sized company manufacturing shoes. It has to determine whether it should use wholesalers or set up its own chain stores for

distributing its products. What alternatives would you suggest? Give reasons in support of your answer. (3)

13. Classify, on the basis of size, the business enterprises in the manufacturing sector. (3)

14. What kind of public enterprise RBI is? State any two merits of such enterprise. (1+2=3)

15. Biju is a vegetable seller who sells all kinds of vegetables on his hand cart every morning and moves from one place to another during the day to sell his stock at the doorstep of the customers.

In context of the above case:

(a) Biju will be classified as which type of retailer and why?

(b) Name the category of the type of retail trade as identified in part (a).

(c) State any two features of the type of retailers as identified in part (b) of the question. (1+1+2=4)

16. Gagan runs a garment shop in a mall. Two years back he had taken a loan of Rs 20 lakhs from HDFC Bank for the renovation of his shop. However, due to his poor health for the past one year, his earnings have reduced considerably as he is not able to devote sufficient time to the business. He now plans to sell off his shop.

In context of the above case:

- (a) Identify the limitation of sole proprietorship form of business being discussed above.
- (b) Describe briefly any three other limitations of the same form of business organization. (1+3=4)

17. Shreya wants to start her own business dealing in high end crockery items. She decides to arrange for initial finance from her savings. However, her savings are not enough to fulfill all the initial needs of business. She seeks help of her husband, who works in government sector. He advises her to start her business with limited finance and then use the revenues earned by the business to fulfil other financial requirements.

- (a) Which source of finance has been suggested by Shreya's husband?
- (b) State and explain any three merits of such source of finance. (1+3=4)

18. Saathak is a consumer. List certain responsibilities that he will expect from a businessman. (4)

19. Deepak owns a well known departmental store in Mumbai. He procures different kinds of products from all over the country through railways, roadways

and airways. He also owns a godown to hold the stocks. He has also taken an insurance policy worth Rs 10 crores for his business. Moreover, he has taken a loan of Rs 200000 from ICICI Bank in order to meet short term financial needs of his business. He has placed information about his store on the hoardings, bill boards etc in order to popularize them.

(a) Identify and explain the different auxiliaries to trade that are being used by Deepak in his business by quoting lines from the paragraph. (4)

20. Itinerant traders have been an integral part of internal trade in India. Analyse the reasons for their survival in spite of competition from large scale retailers. (5)

21. ABC Ltd is a well diversified company engaged in development of real estate, tourism and textiles. The company plans to raise a sum of Rs 120 crores in order to finance its expansion plans. Presently, there is a conflict among its financial managers as to whether the company should issue equity shares or debentures to raise the funds. Which of the two sources of funds will you suggest considering the fact that company has not raised much debt capital so far and why? (14 = 5)



22. Aman is successfully doing a business of manufacturing ready made theme party costumes. Recently, his friend Sameer suggested to him to start selling his products online. However, Aman is quite hesitant to implement his friend's suggestion.

- (a) State briefly any three limitations because of which Aman may be hesitant to implement his friend's suggestion.
- (b) Briefly explain any two benefits that Aman can avail of by venturing into ~~the~~ e-business. (3+2=5)

23. What do you mean by an Indent? Discuss the formalities involved in getting an export licence. (1+4=5)

24. Explain the various kinds of partners in a partnership firm. (6)

OR  
Explain briefly the limitations of a company form of organisation. (6)

25. What are the incentives provided by the government for industries in backward and hilly areas? (6)

OR  
How do small scale industries contribute to the socio-economic development of India? (6)

26. What do you mean by Commercial banks?  
Explain different types of accounts which  
can be opened with the banks. (1+5 = 6)

OR  
Write a detailed note on various  
facilities offered by Indian Postal Department  
(6)

27. Jitesh had placed an order for import  
of medical equipments from USA for his  
diagnostic centre. He has now received an  
intimation about the arrival of the goods  
in India. What are the various formalities  
that he will have to complete before taking  
the delivery of goods? (6)

OR  
Explain briefly the various problems related to  
international trade. (6)