

I. Choose the correct answer:

5x1=5

1. The example for non-polar molecule is _____.
a) N_2O b) H_2O c) NH_3 d) N_2
2. When the charge given to a capacitor is doubled its capacitance
a) increases twice b) decreases twice
c) increases four times d) does not change
3. A capacitor of capacitance $6\mu F$ is connected to a 100v battery.
The energy stored in the capacitor is _____.
a) 30J b) 3J c) 0.03J d) 0.06J
4. A parallel plate capacitor stores a charge q at a voltage v .
Suppose the area of the parallel plate capacitor and the
distance between the plates are each doubled then which is the
quantity that will change?
a) capacitance b) charge c) voltage d) energy density
5. Vande Graff generator is used to accelerate _____.
a) deuterons b) electrons c) anions d) none

II. Answer any three of the following:

3x2=6

6. Define dielectric strength.
7. Difference between polar molecule and Non-polar molecule.
8. A parallel plate capacitor has square plates of side 5cm and
separated by a distance of 1mm. (a) Calculate the capacitance
of this capacitor. (b) If a 10v battery is connected to the
capacitor, what is the charge stored in any one of the plates?
($\epsilon_0=8.85 \times 10^{-12} \text{ Nm}^2\text{C}^{-2}$)
9. State the relation between electric field and potential.

III. Answer any three of the following:

3x3=9

10. Obtain the expression for capacitance for a parallel plate
capacitor.
11. Obtain the expression for energy stored in the parallel plate
capacitor.
12. A water molecule has an electric dipole moment of
 $6.3 \times 10^{-30} \text{ cm}$. A sample contains 10^{22} water molecules, with all
the dipole moments aligned parallel to the external electric
field of magnitude $3 \times 10^5 \text{ NC}^{-1}$. How much work is required to
rotate all the water molecules from $\theta=0^\circ$ to 90° ?

13. Define equipotential surface and mention its properties.

IV. Answer any twos of the following:

2x5=10

14. Explain in detail the construction and working of a Vande
Graff Generator.
15. Derive an expression for electrostatic potential due to an
electric dipole.
16. i) Derive an expression for electrostatic potential energy of a
dipole in a uniform electric field.
ii) State the applications of capacitors.

EVERWIN MATRIC. HR. SEC. SCHOOL

02.07.19

T.T Accountancy

Time: 45 Mins

STD: XII (G)

Marks: 40

I. Answer the following questions:

(10 Marks)

1. On 1st April 2017, Ganesh started his business with a capital of ₹ 75,000. He did not maintain proper book of a/c. Following particulars are available from his book as on 31.3.18.

Particulars	Rs.	Particulars	Rs.
Cash	5000	Debtors	16000
Stock	18000	Creditors	9000
Bills receivable	7000	Cash at bank	24000
Furniture	3000	Bills payable	6000
Land & Buildings	30000		

During the year he withdrew ₹15,000 for his personal use. He introduced further capital of ₹20,000 during the year. Calculate his profit or loss.

2. David does not keep proper book of accounts. Following details are given from his records. (15 Marks)

Particulars	01.04.2018	31.03.2019
Cash	43,000	29,000
Stock of goods	1,20,000	1,30,000
Sundry debtors	84,000	1,10,000
Sundry creditors	1,05,000	1,02,000
Loan	25,000	20,000
Business Premises	2,50,000	2,50,000
Furniture	33,000	45,000

During the year he introduced further capital of ₹ 45,000 and withdrew ₹25,000 per month from the business for his personal use. Prepare statement of profit or loss with the above information.

3. From the following particulars, calculate total sales. (15 Marks)

Particulars	Rs.
Debtors on 1 st April 2017	1,50,000
Bills receivable on 1 st April 2017	40,000
Cash received from debtors	3,90,000
Cash received from Bills receivable	90,000
Bills receivable dishonoured	10,000
Sales Return	40,000
Bills receivable on 31 st March, 2018	30,000
Sundry debtors on 31 st March, 2018	1,30,000
Cash Sales	2,00,000

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02.07.19 T.T Accountancy Time: 45 Mins
 STD: XII (F,H) Marks: 40

I. Answer the following questions: (10 Marks)

1. From the following Receipts and Payment account and from the information given below of Ramanathapuram Sports Club, prepare Income and Expenditure Account for the year ended 31st Dec, 2018 and the balance sheet as on that date.

Receipts and Payments Account for the year ended 31st Dec, 2018
 Dr. Cr.

Receipts	₹	₹	Payments	₹	₹
To Balance b/d			By Rent		11,000
Cash in hand	5,000		By Entertainment Expenses		11,200
Cash at bank	10,000	15,000	By Furniture		10,000
To subscription 2017	12,000		By Sports materials Purchased		13,000
2018	33,000		By Match expenses		12,000
2019	16,000	61,000	By Investments Made		28,000
To Entrance fees		6,000	By Balance c/d		
To General Donations		7,000	Cash in hand	1,300	
To Sale of old sports materials		1,000	Cash at bank	4,000	5,300
To Miscellaneous receipts		500			
		90,500			90,500

Additional information:

- Capital fund as on 1st January 2018 ₹30,000.
- Opening stock of sports material ₹3,000 and closing stock of sports material ₹5,000.

(15 Marks)

2. From the following Receipts and Payments account of Coimbatore Cricket Club for the year ending 31st March 2016, prepare income and expenditure account for the year ending 31st March, 2016 and a balance sheet as on that date.

In the books of Coimbatore Cricket Club

Receipts and Payments Account for the year ending 31st March, 2016

Receipts	₹	Payments	₹
To Balance b/d		By Maintenance	5,000
Cash at bank	8,000	By Furniture	15,000
To Subscriptions	11,000	By Tournament expenses	1,400
To Sale of old bats and balls	100	By Secretary's Honorarium	4,500
To Subscription for Tournament	2,000	By Bats and balls	7,400
To Legacies	20,000	By Balance c/d: Cash at bank	7,800
	41,100		41,100

Additional information:

On 1st April, 2015 the club had stock of balls and bats ₹3,000 and an advance subscription of ₹500. Surplus on account of tournament should be kept in reserve for permanent pavilion. Subscription due on 31.03.2016 was ₹2,000. Stock of bats and balls on 31.3.2016 was ₹1,000.

3. The following is the summary of cash transactions of Delhi Literary Club for the year ending 31st March, 2019. (15 Marks)

Delhi Literary Club

Receipts and Payments Account for the year ending 31st March, 2019

Receipts	₹	Payments	₹
To Balance b/d		By Rents and Rates	21,000
Cash in hand	3,200	By Lecture fees	4,500
To Entrance fees	2,300	By Sundry expenses	7,200
To Subscriptions	46,000	By Fixed deposit	40,000
To Life membership fees	2,500	By Balance c/d	
To Interest received on fixed deposit	500	Cash in hand	4,300
To Sale of furniture (on 1.4.2018)	22,500		
(Book value ₹25,000)	77,000		77,000

Additional information:

- At the beginning of the year the club possessed books worth ₹20,000 and furniture worth ₹40,000.
- Subscription received in advance during the current year amounted to ₹1,000.

Prepare Income and Expenditure account for the club for the year ending 31st March, 2019 and the Balance sheet as on that date.

EVERWIN MATRIC. HR. SEC. SCHOOL

02.07.19

T.T Business Maths

Time: 45 Mins

STD: XII (I,J)

Marks: 30

I. Choose the correct answer:

5x1=5

1. $\int_0^1 (2x + 1) dx$ is _____

- a) 1 b) 2 c) 3 d) 4

2. $\int_0^1 \sqrt{x^4(1-x)^2} dx$ is _____

- a) $\frac{1}{12}$ b) $\frac{-7}{12}$ c) $\frac{7}{12}$ d) $\frac{-1}{12}$

3. $\int_0^\infty x^4 e^{-x} dx$ is _____

- a) 12 b) 4 c) 4! d) 64

4. $\int 2^x dx$ is _____

- a) $2^x \log 2 + c$ b) $2^x + c$ c) $\frac{2^x}{\log 2} + c$ d) $\frac{\log 2}{2^x} + c$

5. $\int \frac{2x^3}{4+x^4} dx$ is _____

- a) $\log |4 + x^4| + c$ b) $2x^3 \log(4+x^4)$
 c) $\frac{1}{4} \log |4 + x^4| + c$ d) $\frac{1}{2} \log |4 + x^4| + c$

II. Answer any three from the following:

3x2=6

6. $\int (e^{x \log a} + e^{a \log x} - e^{n \log x}) dx$

7. $\int \frac{\cos 2x}{\sin^2 x \cos^2 x} dx$

8. $\int \frac{e^{x+7}}{e^x} dx$

9. $\int (e^x + 1)^2 e^x dx$

III. Answer any three from the following:

3x3=9

10. $\int \frac{1}{x(\log x)^2} dx$

11. Evaluate $\int \cos^3 x dx$

12. Integrate the following with respect to 'x': $\int (x^3 e^{3x}) dx$

13. Evaluate $\int \log x dx$

IV. Answer any two from the following:

2x5=10

14. Evaluate $\int (x^5 e^{x^2}) dx$

15. Evaluate $\int \sin^3 x dx$

16. Evaluate $\int (\log x)^2 () dx$