

EVERWIN MATRIC. HR. SEC. SCHOOL

6.11.2019 TT Time: 45 Mins  
 STD:XII (F,G,H) Commerce Marks: 30

I. Answer the following:

1. Define Bill of Exchange. (5)
2. Define Endorsement. (5)
3. Difference between Negotiability and Assignability. (6)
4. Distinguish between Bill of Exchange and Promissory note. (6)
5. Discuss the two types of crossing. (8)

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6.11.2019 TT Time: 45 Mins  
 STD:XII (A,B,C) Chemistry Marks: 30

I. Answer any 5 of the following questions: 5x3=15

1. State Kohlraush's law.
2. A conductivity cell has two platinum electrodes separated by a distance of 1.5cm and the cross sectional area of each electrode is 4.5 sq cm. Using this cell, the resistance of 0.5N electrolytic solution was measured as 15Ω. Find the specific conductance of the solution.
3. Explain three factors affecting electrolytic conductance.
4. Why is anode in galvanic cell considered to be negative?
5. Why does conductivity of a solution decrease on dilution of the solution?
6. State ohm's law.

II. Answer any 3 in brief: 3x5=15

7. a) Calculate the molar conductance of acetic acid by using Kohlraush's law. (3)
- b) Explain the classification of electrochemical cell. (2)
8. Derive Nernst equation.
9. Explain the relation between Gibb's free energy and emf of a cell.
10. a) Write the half cell reactions and the cell notation for the following galvanic cell.  

$$2\text{Cr}_{(s)} + 3\text{Cu}^{2+}_{(aq)} \rightarrow 2\text{Cr}^{3+}_{(aq)} + 3\text{Cu}_{(s)} \quad (3)$$
- b) Give the Galvanic cell notations by taking Daniel cell as example. (2)

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6.11.2019 TT Time: 45 Mins  
 STD:XII (I & J) Accountancy Marks: 30

I. Answer the following questions: 6x5=30

1. Joy company issued 10,000 equity shares at ₹10 per share payable ₹5 on application, ₹3 on allotment and ₹2 on first and final call. The public subscribed for 9000 shares. The directors allotted all the 9,000 shares and duly received the money. Pass the necessary journal entries.

2. Bharath Ltd issued 1,00,000 equity shares ₹10 each to the public at par. The details of the amount payable on the shares are as follows:

On application	₹ 5 per share
On allotment	₹ 3 per share
On first and final call	₹ 2 per share

Application money was received for 1,20,000 shares. Excess application money was refunded immediately. Pass journal entries to record the above.

3. Khan Ltd issued 50,000 shares of ₹10 each to the public payable ₹4 on application, ₹4 on allotment and ₹2 on first and final call. Applications were received for 65,000 shares. The directors decided to allot 50,000 shares on pro rata basis and surplus application money was utilized for allotment. Pass journal entries assuming that the amounts due were received.

4. Aruna Mills Ltd with a registered capital of ₹5,00,000 in equity shares of ₹10 each issued 20,000 of such shares payable as follows: ₹4 per share on application, ₹4 per share on allotment and ₹2 per share on first and final call. The issue was duly subscribed. All the money payable was duly received. But on allotment, one shareholder paid the entire balance on his holding of 300 shares. Give Journal entries to record the above.

5. Abdul Ltd issues 50,000 shares ₹10 each payable fully on application. Pass Journal entries if shares are issued i) at par ii) at a premium of ₹3 per share.

6. Paradise Ltd purchased assets ₹4,40,000 from Suguna Furniture Ltd. It issued equity shares of ₹10 each fully paid in satisfaction of their claim. What entries will be made if such issue is: (a) at par and (b) at premium of 10%

6.11.2019

TT

Time: 45 Mins

STD:XII (D &amp; E)

Maths

Marks: 30

I. Choose the correct answer:

5x1=5

1. A balloon rises straight up at 10 m/s. An observer is 40m away from the spot where the balloon left the ground. Find the rate of change of the balloon's angle of elevation in radian per second when the balloon is 30 metres above the ground.

- a)  $\frac{3}{25}$  radians/sec      b)  $\frac{4}{25}$  radians/sec  
 c)  $\frac{1}{5}$  radians/sec      d)  $\frac{1}{3}$  radians/sec

2. A stone is thrown up vertically. The height it reaches at time  $t$  seconds is given by  $x=80t-16t^2$ . The stone reaches the maximum height in time  $t$  seconds is given by

- a) 2      b) 2.5      c) 3      d) 3.5

3. The abscissa of the point on the curve  $f(x)=\sqrt{8-2x}$  at which the slope of the tangent is -0.25?

- a) -8      b) -4      c) -2      d) 0

4. The tangent to the curve  $y^2-xy+9=0$  is vertical when

- a)  $y=0$       b)  $y=\pm\sqrt{3}$       c)  $y=\frac{1}{2}$       d)  $y=\pm 3$

5. The value of the limit  $\lim_{x \rightarrow 0} \left( \cot x - \frac{1}{x} \right)$  is

- a) 0      b) 1      c) 2      d)  $\infty$

II. Answer any 5 of the following:

5x5=25

6. Find the tangent and normal equations to the curves

$$x=a \cos^3 t, y=b \sin^3 t \text{ at } t=\frac{\pi}{2}$$

7. Find the points on the curve  $y^2-4xy=x^2+5$  for which the tangent is horizontal.

8. Find the angle between  $y=x^2$  and  $y=(x-3)^2$

9. A particle moves along a line according to the law

$$s(t)=2t^3-9t^2+12t-4, \text{ where } t \geq 0.$$

i) At what times the particle changes direction?

ii) Find the total distance travelled by the particle in the first 4 seconds.

iii) Find the particle's acceleration each time the velocity is zero.

10. A beacon makes one revolution every 10 seconds. It is located on a ship which is anchored 5km from a straight shore line.

How fast is the beam moving along the shore line when it makes an angle of  $45^\circ$  with the shore?

11. If we blow air into a balloon of spherical shape at a rate of  $1000 \text{ cm}^3$  per second, at what rate the radius of the balloon changes when the radius is 7cm? Also compute the rate at which the surface area changes.