EVERWIN MATRIC. HR. SEC. SCHOOL

21.10.19   Special Test – Biology   Time: 1¼ hrs

STD: XII (A,C)   Bio-Botany   Marks: 25

I. Answer the following questions: 3x1=3

1. The unit for measuring ozone thickness _____.

2. INSAT 3DR   –   Disaster management

   CARTOSAT2 -   _____

3. People's movement for the protection of environment at Sirisi of Karnataka is called _____.

    a) Chipko movement   b) Appiko movement

    c) Amirtha Devi Bsihwas movement   d) None of the above

II. Answer any 3 of the following: 3x2=6

4. List out the green house gases.

5. What is Dobson unit?

6. Expand CCS and Define it.

7. List out the benefits of EIA to society.

III. Answer any 2 of the following: 2x3=6

8. What is carbon sequestration? Give examples.

9. What are plant indicators? Give examples.

10. List out the Importance of GIS.

IV. Answer any 2 of the following: 2x5=10

11. Suggest solution to water crisis. Explain its advantages.

12. What are the effect of deforestation and benefits of agroforestry?

13. List out the sources of Green house gases emission – Natural and Anthropogenic. Explain.

Bio-Zoology   Marks: 25

I. Answer any 4 of the following: 4x1=4

1. What is a summer inactive state called as?

2. What is the term given for animals having camouflaging ability?

3. What is the term given for winter inactive state?

4. Name the receptors of lateral line.

5. Give an example of Desert fauna.

II. Answer any 5 of the following: 5x2=10

6. What is meant by commensalism? Give eg.

7. What is meant by Amensalism? Give example.

8. Draw the growth curve.

9. Write a note on Emigration.

10. Write a note on Natality.

11. Write a note on two features of Tropical forest.

12. Write a note on two features of Conformers.

III. Answer any 2 of the following: 2x3=6

13. Write a note on physiological adaptations.

14. Write a note on Desert Biome and adaptations.

15. Write a note on Migration.

IV. Answer any 1 of the following: 1x5=5

16. Write a note on Adaptations of aquatic animals.

17. Write a note on r-selected and k-selected species.

21.10.19   Special Test – Accountancy   Time: 1½ hrs

STD: XII (H,I,J)   Marks: 45

I. Choose the correct answer: 5x1=5

1. A partner retires from the partnership firm on 30th June. He is liable for all the acts of the firm up to the:

(a) End of the current accounting period

(b) End of the previous accounting period

(c) Date of his retirement

(d) Date of his final settlement

2. On retirement of a partner from a partnership firm, accumulated profits and losses are distributed to the partners in the:

(a) New profit sharing ratio   (b) Old profit sharing ratio

(c) Gaining ratio   (d) Sacrificing ratio

3. On revaluation, the increase in liabilities leads to:

(a) Gain   (b) Loss   (c) Profit   (d) None of these

4. If the final amount due to a retiring partner is not paid immediately, it is transferred to

(a) Bank A/c   (b) Retiring partner's capital A/c

(c) Retiring partner's loan A/c   (d) Other partners' capital A/c

5. X, Y and Z were partners sharing profits and losses equally. X died on 1st April 2019. Find out the share of X in the profit of 2019 based on the profit of 2018 which showed 36,000.

(a) 1,000   (b) 3,000   (c) 12,000   (d) 36,000

II. Answer the following: 1x2=2

6. Rahul, Ravi and Rohit are partners sharing profits and losses in the ratio of 5:3:2. Rohit retires and the share is taken by Rahul and Ravi in the ratio of 3:2. Find out the new profit sharing ratio and gaining ratio.

1x3=3

7. Rathna, Baskar and Ibrahim are partners sharing profits and losses in the ratio of 2:3:4 respectively. Rathna died on 31st December, 2018. Final amount due to her showed a credit balance of 1,00,000. Pass journal entries if,

(a) The amount due is paid off immediately by cheque.

(b) The amount due is not paid immediately.

(c) 60,000 is paid immediately by cheque.

III. Answer the following: 5x5=25

8. Suresh, Senthamarai and Raj were partners in a firm sharing profits and losses in the ratio of 3:2:1. Suresh retired from partnership. The goodwill of the firm on the date of retirement was valued at 36,000. Pass necessary journal entries for goodwill on the assumption that the fluctuating capital system is followed.

9. Vinoth, Karthi and Pranav are partners sharing profits and losses in the ratio of 2:2:1. Pranav retires from partnership on 1st April 2018. The following adjustments are to be made.

(i) Increase the value of land and building by 18,000 (ii) Reduce the value of machinery by 15,000

(iii) A provision would also be made for outstanding expenses for 8,000. prepare revaluation account.

10. Rajan, Suman and Jegan were partners in a firm sharing profits and losses in the ratio of 4:3:2. Suman retired from partnership. The goodwill of the firm on the date of retirement was valued at 45,000. Pass necessary journal entries for goodwill on the assumption that the fluctuating capital method is followed.

11. Balu, Chandru and Nirmal are partners in a firm sharing profits and losses in the ratio of 5:3:2. On 31st March 2018, Nirmal retires from the firm. On the date of Nirmal's retirement, goodwill appeared in the books of the firm at 60,000. By assuming fluctuating capital account, pass the necessary journal entry if the partners decide to

(a) write off the entire amount of existing goodwill

(b) write off half of the existing goodwill.

12. Rani, Jaya and Rathi are partners sharing profits and losses in the ratio of 2:2:1. On 31.3.2018, Rathi retired from the partnership. Profit of the preceding years is as follows:

2014: 10,000; 2015: 20,000; 2016: 18,000 and 2017: 32,000

Find out the share of profit of Rathi for the year 2018 till the date of retirement if

(a) Profit is to be distributed on the basis of the previous year's profit

(b) Profit is to be distributed on the basis of the average profit of the past 4 years .Also pass necessary journal entries by assuming partners capitals are fluctuating.

IV. Answer the following: 1x10=10

13. Saran, Arun and Karan are partners in a firm sharing profits and losses in the ratio of 4:3:3.

Their balance sheet as on 31.12.2016 was as follows:

Liabilities	Amount	Assets	Amount
Capital accounts:		Buildings	60,000
Saran 60,000		Machinery	40,000
Arun 50,000		Investment	20,000
Karan 40,000	150000	Stock	12,000
General reserve	15000	Debtors 25,000	

Creditors	35000	Less:Provision		
		For bad debts 1000		24,000
		Cash at bank		44,000
	2,00,000			2,00,000

Karan retires on 1.1.2017 subject to the following conditions:

(i) Goodwill of the firm is valued at 21,000

(ii) Machinery to be appreciated by 10%

(iii) Building to be valued at 80,000

(iv) Provision for bad debts to be raised to 2,000

(v) Stock to be depreciated by 2,000

(vi) Final amount due to Karan is not paid immediately.

Prepare the necessary ledger accounts and show the balance sheet of the firm after retirement.

21.10.19   Special Test – Business Maths   Time: 1½ hrs
STD: XII (F,G)   Marks: 50
I. Choose the correct answer: 10x1=10

1. If c is a constant, then E(c)=_____
    a) 0   b) 1   c) cf(c)   d) c

2. $E[x-E(x)]$ is equal to _____.
    a) $E(x)$ b) $V(x)$ c) 0   d) $E(x)=x$

3. If the random variable takes negative values, then the negative values will have _____.
    a) positive probabilities   b) negative probabilities
    c) constant probabilities   d) difficult to tell

4. Given $E(x)=5$ and $E(y)=-2$, then $E(x-y)=$
    a) 3   b) 5   c) 7   d) -2

5. A probability density function may be represented by _____.
    a) table   b) graph   c) mathematical equation
    d) both (b) and (c)

6. A discrete probability distribution may be represented by _____
    a) table   b) graph   c) mathematical equation
    d) all of these

7. $\int_{-\infty}^{\infty} f(x)dx$ is always equal to _____.
    a) zero   b) one   c) $E(x)$ d) $f(x)+1$

8. A discrete probability function p(x) is always _____.
    a) non-negative   b) negative   c) one   d) zero

9. An expected value of a random variable is equal to its
    a) variance   b) standard deviation   c) mean   d) covariance

10. The probability density function p(x) cannot exceed
    a) zero   b) one   c) mean   d) infinity

II. Answer any 5 of the following: 5x3=15

11. The discrete random variable x has the following probability function $P(X=x)=\begin{cases} kx & x=2,4,6 \\ k(x-2) & x=8 \\ 0 & \text{otherwise} \end{cases}$
where k is a constant. Show that $k=\frac{1}{18}$

12. If $p(x)=\begin{cases} \frac{x}{20}, & x=0,1,2,3,4,5 \\ 0, & \text{otherwise} \end{cases}$
Find i) p(x<3) and ii) p(2<x≤4)

13. A continuous random variable x has the following p.d.f $f(x)=ax$, $0≤x≤1$. Determine the constant a and also find $p\left(x \le \frac{1}{2}\right)$

14. Determine the mean of the random variable x having the following probability distribution.

X=x	1	2	3	4	5	6	7	8	9	10
P(X=x)	0.15	0.10	0.10	0.01	0.08	0.01	0.05	0.02	0.28	0.30

15. In an investment, a man can make a profit of ₹5,000 with a probability of 0.62 or a loss of ₹8,000 with a probability of 0.38. Find the expected gain.

16. A person tosses a coin and its to receive ₹4 for a head and is to pay ₹2 for a tail. Find the expectation and variabce of his gains.

17. Let x be a random variable and y=2x+1. What is the variance of y if variance x is 5?

III. Answer any 5 of the following: 5x5=25

18. Consider a random variable x with probability density function $f(x)=\begin{cases} 4x^3, & \text{if } 0<x<1 \\ 0 & \text{otherwise.} \end{cases}$ Find E(x) and V(x).

19. In a business venture, a man can make a profit of ₹2,000 with a probability of 0.4 or have a loss of ₹ 1,000 with a probability of 0.6. What is his expected variance and standard deviation of profit?

20. The distribution of a continuous random variable x in range (-3, 3) is given by p.d.f
$F(x)=\begin{cases} \frac{1}{16}(3+x)^2, & -3≤x≤-1 \\ \frac{1}{16}(6-2x^2), & -1≤x≤1 \\ \frac{1}{16}(3-x)^2, & 1≤x≤3 \end{cases}$
Verify that the area under the curve is unity.

21. A random variable x has the following probability function

Value of x	0	1	2	3	4	5	6	7
P(x)	0	a	2a	2a	3a	a²	2a²	7a²+a

i) Find a, Evaluate ii) P(x<3)   iii) P(x>2)   iv) P(2<x≤5).

22. Two coins are tossed simultaneously. Getting a head is termed as success. Find the probability distribution of the number of successes.

23. The length of time (in minutes) that a certain person speaks on the telephone is found to be random phenomenon with a probability function specified by the probability density function f(x) as $f(x)=\begin{cases} Ae^{\frac{-x}{5}}, & \text{if } x≥0 \\ 0 & \text{otherwise} \end{cases}$
a) Find the value of A that makes f(x) a p.d.f
b) What is the probability that the number of minutes that person will talk over the phone is i) more than 10 minutes ii) less than 5 minutes and iii) between 5 and 10 minutes.

21.10.19   Special Test – Computer Science   Marks: 50

STD: XII (A,C)   Time: 1½ hrs

I. Choose the correct answer: 10x1=10

1. _____ is a string used to terminate lines produced by

   writer ( ) method of csv module.

   a) life terminator b) Enter key c) Form feed d) Data Terminator

2. A CSV file is also known as _____.

   a) Flat File   b) 3D File   c) Sting File d) Random File

3. CRLF stands for _____.

   a) Control Return and Line Feed

   b) Carriage Return & Form Feed

   c) Control Router & Line Feed

   d) Carriage Return & Line Feed

4. _____ is provided by python to do several operations on the

   csv file?

   a) py   b) xls   c) csv   d) cs

5. Which of the following creates an object which maps data to a

   dictionary?

   a) list reader ( )   b) reader( )   c) tuple reader ( )

   d) Dict Reader( )

6. _____ is used for removing whitespaces after the delimiter.

   a) Sort   b) Skipinitialspace c) close ( ) d) dict( )

7. The function _____ is used to print the data in dictionary

   format without order.

   a) open ( )   b) print ( )   c) dict ( )   d) list ( )

8. _____ mode can be used when dealing with non-text file like

   image or exe files.

   a) write   b) read   c) binary   d) all

9. To sort by more than one column _____ function is used.

   a) dialect( )   b) itemgetter( ) c) find( ) d) writer( )

10. Python has a _____ collector to clean up unreferenced objects.

   a) carriage return   b) interpreter c) Garbage   d) None

II. Answer the following questions: 5x2=10

1. Differentiate Excel file and csv file. (Any two points)

2. What is the use of next ( ) function?

3. Write the syntax for csv.writer ( ) function.

4. Mention the default modes of the file.

5. What is csv file?

III. Answer the following questions: 5x3=15

6. Write a Python program to modify an existing file.

7. Differentiate between write mode and append mode.

8. Write a python program to read a csv file with default delimiter

   comma (,)

9. What is the difference between reader( ) and Dictreader( )?

10. Define the following function:

   i) dict( )   ii) csv.writer( )   iii) writerow( )

IV. Answer in detail: 3x5=15

11. Write a python program to write csv file with custom quotes.

12. Write the rules to be followed to format the data in a csv file.

13. Write the program to write dictionary data into csv file with

   custom dialects.

I. Choose the correct answer: 10x1=10

1. Co-axial cables are made up of _____.

    a) Steel   b) Iron   c) Copper   d) Aluminium

2. How many types of twisted pair cables are there?

    a) 2   b) 3   c) 4   d) 5

3. The two types of fibre optic cables are _____ and _____.

4. Ethernet was invented in the year _____.

    a) 1972   b) 1973   c) 1976   d) 1978

5. Which interface is typically used for data communication

  trucking applications?

    a) RJ-11   b) RJ-21   c) RJ-28   d) RJ-45

6. OpenNMS Group was created by _____.

    a) Balog   b) Matt Brozowski   c) David Hustace

    d) All of them

7. Which is an example of network simulator?

    a) Simulator   b) TCL   c) NSL   d) C++

8. Which of the following is not a network simulation software?

    a) NSL   b) OPNET   c) SSFNET   d) C++

9. How many freedoms or conditions are defined by Richard

  Stallman for free software foundation?

    a) 2   b) 4   c) 6   d) 8

10. BOSS stands for _____.

    a) Basic Output System Service

    b) Bharat Operating System Solution

    c) Basic Operating System Solutions

    d) Bug Operating System Server

II. Answer any 6 in short: 6x2=12

11. What is an Ethernet Port?

12. What are the uses of USB cables?

13. What is meant by champ connector?

14. What is a trace file?

15. Explain NRCFOSS.

16. What is meant by network simulator?

17. Write short note on Open NMS.

III. Answer any 6 in brief: 6x3=18

18. Write a short note on RJ45 connector.

19. What is meant by null modem?

20. What are the types of Fibre optic cables?

21. List out the popular open source software.

22. Explain Free software.

23. What are the main functional areas of Open NMS?

24. Write a note on open source hardware.

IV. Answer any 2 in detail: 2x5=10

25. Explain wiring techniques used in Ethernet cabling.

26. Explain the types of network cables.

27. List out the benefits of Open source software.

21.10.19   Special Test – Mathematics   Time: 1½ hrs

STD: XII (B,D,E)   Marks: 50

I. Choose the correct answer: 10x1=10

1. If $\vec{a}.\vec{b}=\vec{b}.\vec{c}=\vec{c}.\vec{a}=0$ then $[\vec{a}\,\vec{b}\,\vec{c}]=$_____

    a) $|\vec{a}|\,|\vec{b}|\,|\vec{c}|$ b) $\frac{1}{3}|\vec{a}|\,|\vec{b}|\,|\vec{c}|$ c) 1   d) -1

2. If $\vec{a},\vec{b},\vec{c}$ are 3 non-coplanar vectors such that $\vec{a}\times(\vec{b}\times\vec{c})=\frac{\vec{b}+\vec{c}}{\sqrt{2}}$

   then the angle between $\vec{a}$ and $\vec{b}$ is _____

     a) $\frac{\pi}{2}$ b) $\frac{3\pi}{4}$ c) $\frac{\pi}{4}$ d) π

3. If $\vec{a}$ and $\vec{b}$ are unit vectors such that $[\vec{a}\,\vec{b}\;\vec{a}\times\vec{b}]=\frac{\pi}{4}$ then the

   angle between $\vec{a}$ and $\vec{b}$ is _____.

     a) $\frac{\pi}{6}$ b) $\frac{\pi}{4}$ c) $\frac{\pi}{3}$ d) $\frac{\pi}{2}$

4. If a vector $\vec{\alpha}$ lies in the plane of $\vec{\beta}$ and $\vec{\gamma}$ then _____

     a) $[\vec{\alpha}\,\vec{\beta}\,\vec{\gamma}]=1$ b) $[\vec{\alpha}\,\vec{\beta}\,\vec{\gamma}]=-1$ c) $[\vec{\alpha}\,\vec{\beta}\,\vec{\gamma}]=0$ d) $[\vec{\alpha}\,\vec{\beta}\,\vec{\gamma}]=2$

5. If $\vec{a}$ and $\vec{b}$ are parallel then _____

     a) $\vec{a}.\vec{b}=0$ b) $\vec{a}\times\vec{b}=0$ c) $\vec{a}+\vec{b}=0$ d) $\vec{a}\times\vec{b}=-1$

6. If $\vec{a}$ and $\vec{b}$ are parallel then $[\vec{a}\;\vec{c}\;\vec{b}]=$_____

     a) 2   b) -1   c) 1   d) 0

7. $[\vec{a}\,\vec{b}\,\vec{c}]=$ _____

     a) $[\vec{a}\,\vec{c}\,\vec{b}]$ b) $[\vec{b}\,\vec{a}\,\vec{c}]$ c) $[\vec{a}\,\vec{a}\,\vec{a}]$ d) $[\vec{b}\,\vec{c}\,\vec{a}]$

8. $\vec{a}.(\vec{b}\times\vec{b})=$_____

     a) 0   b) 1   c) -1   d) 2

9. The volume of the parallelepiped with its edges represented by

   $\hat{i}+\hat{j}$, $\hat{i}+2\hat{j}$, $\hat{i}+\hat{j}+\pi\hat{k}$ is _____.

     a) $\frac{\pi}{2}$ b) $\frac{\pi}{3}$ c) $\frac{\pi}{4}$ d) π

10. If $\vec{a},\vec{b},\vec{c}$ are 3 unit vectors such that $\vec{a}\perp\vec{b}$ and $\vec{a}\|\vec{c}$ then

   $\vec{a}\times(\vec{b}\times\vec{c})=$_____

     a) $\vec{a}$ b) $\vec{b}$ c) $\vec{c}$ d) $\vec{0}$

II. Answer the following: 6x2=12

11. Show that $\hat{i}+2\hat{j}-3\hat{k}$, $2\hat{i}-\hat{j}+2\hat{k}$ and $3\hat{i}+\hat{j}-\hat{k}$ are coplanar.

12. Find the volume of the parallelopiped represented by the

   vectors $-6\hat{i}+14\hat{j}+10\hat{k}$, $14\hat{i}-10\hat{j}-6\hat{k}$ and $2\hat{i}+4\hat{j}-2\hat{k}$

13. If $\vec{a}=\hat{i}-2\hat{j}+3\hat{k}$, $\vec{b}=3\hat{i}+2\hat{j}+\hat{k}$ find $\vec{a}\times\vec{b}$

14. Prove that $[\vec{a}.(\vec{b}\times\vec{c})]\vec{a}=(\vec{a}\times\vec{b})\times(\vec{a}\times\vec{c})$

15. If $\vec{a}=\hat{i}-\hat{j}$, $\vec{b}=\hat{i}-\hat{j}-4\hat{k}$, $\vec{c}=3\hat{j}-\hat{k}$ find $[\vec{b}\,\vec{c}\,\vec{a}]$

16. If $\vec{a}=2\hat{i}+3\hat{j}-\hat{k}$, $\vec{b}=-\hat{i}+2\hat{j}-4\hat{k}$, $\vec{c}=\hat{i}+\hat{j}+\hat{k}$ then find $(\vec{a}\times\vec{b}).(\vec{a}\times\vec{c})$

III. Answer the following: 6x3=18

17. Prove that $[\vec{a}\times\vec{b}\;\;\vec{b}\times\vec{c}\;\;\vec{c}\times\vec{a}]=[\vec{a}\,\vec{b}\,\vec{c}]^2$

18. Prove that $\hat{i}\times(\vec{a}\times\hat{i})+\hat{j}\times(\vec{a}\times\hat{j})+\hat{k}\times(\vec{a}\times\hat{k})=2\vec{a}$

19. If $\vec{a},\vec{b},\vec{c},\vec{d}$ are coplanar, show that $(\vec{a}\times\vec{b})\times(\vec{c}\times\vec{d})=0$

20. The volume of the parallelepiped whose edges are $7\hat{i}+\lambda\hat{j}-3\hat{k}$,

   $\hat{i}+2\hat{j}-\hat{k}$, $-3\hat{i}+7\hat{j}+5\hat{k}$ is 90 cu.units. Find λ

21. Let $\vec{a}=\hat{i}+\hat{j}+\hat{k}$, $\vec{b}=\hat{i}$ and $\vec{c}=c_1\hat{i}+c_2\hat{j}+c_3\hat{k}$. If $c_1=1$ and $c_2=2$ find c_3 such that

   $\vec{a}$, $\vec{b}$ and $\vec{c}$ are coplanar.

22. Let $\vec{a},\vec{b},\vec{c}$ be three non-zero vectors such that $\vec{c}$ is a unit

   vector perpendicular to both $\vec{a}$ and $\vec{b}$. If the angle between

   $\vec{a}$ and $\vec{b}$ is $\frac{\pi}{6}$, show that $[\vec{a}\,\vec{b}\,\vec{c}]^2=\frac{1}{4}|\vec{a}|^2\,|\vec{b}|^2$

IV. Answer the following: 5x2=10

23. If $\vec{a}=2\hat{i}+3\hat{j}-\hat{k}$, $\vec{b}=3\hat{i}+5\hat{j}+2\hat{k}$ and $\vec{c}=-\hat{i}-2\hat{j}+3\hat{k}$ verify that

   $(\vec{a}\times\vec{b})\times\vec{c}=(\vec{a}.\vec{c})\vec{b}-(\vec{b}.\vec{c})\vec{a}$

24. For any four vectors $\vec{a},\vec{b},\vec{c},\vec{d}$ we have

   $(\vec{a}\times\vec{b})\times(\vec{c}\times\vec{d})=[\vec{a}\,\vec{b}\,\vec{d}]\vec{c}-[\vec{a}\,\vec{b}\,\vec{c}]\vec{d}=[\vec{a}\,\vec{c}\,\vec{d}]\vec{b}-[\vec{b}\,\vec{c}\,\vec{d}]\vec{a}$