



Fahaeel Al-Watanieh Indian Private School, Kuwait

First Terminal Examination 2015-'16

Class XII (PHYSICS)

Time Allowed: 3 Hours

Maximum Marks: 70

General Instructions

1. All questions are compulsory. There are 26 questions in all.
2. This question paper has five sections: Section A, Section B, Section C, Section D and Section E.
3. Section A contains five questions of one mark each, Section B contains five questions of two marks each, Section C contains twelve questions of three marks each, Section D contains one value based question of four marks and Section E contains three questions of five marks each.
4. There is no overall choice. However, an internal choice has been provided in one question of two marks, one question of three marks and all the three questions of five marks weightage. You have to attempt only one of the choices in such questions.
5. You may use the following values of physical constants wherever necessary.

$$c = 3 \times 10^8 \text{ m/s}$$

$$h = 6.63 \times 10^{-34} \text{ Js}$$

$$e = 1.6 \times 10^{-19} \text{ C}$$

$$\mu_0 = 4\pi \times 10^{-7} \text{ T m A}^{-1}$$

$$\epsilon_0 = 8.854 \times 10^{-12} \text{ C}^2 \text{ N}^{-1} \text{ m}^{-2}$$

$$1/4\pi\epsilon_0 = 9 \times 10^9 \text{ N m}^2 \text{ C}^{-2}$$

$$m_e = 9.1 \times 10^{-31} \text{ kg}$$

$$\text{mass of neutron} = 1.675 \times 10^{-27} \text{ kg}$$

$$\text{mass of proton} = 1.673 \times 10^{-27} \text{ kg}$$

$$\text{Avogadro's number} = 6.023 \times 10^{23} \text{ per gram mole}$$

$$\text{Boltzmann constant} = 1.38 \times 10^{-23} \text{ JK}$$

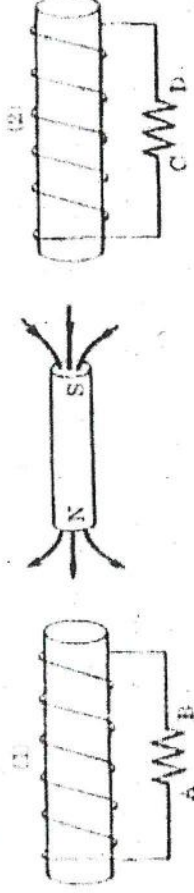
Section A

- 1 Why does the electric field inside a dielectric decrease when it is placed in an external electric field 1
- 2 What is the angle between the directions of electric field at any axial point and that at an equatorial point due to an electric dipole 1
- 3 If the length of a wire conductor is doubled by stretching it, keeping the potential difference across it constant, by what factor does the drift speed of electrons change? 1
- 4 An ammeter and a milliammeter are converted from the same galvanometer. Out of the two measuring instruments which one has a higher shunt resistance? 1

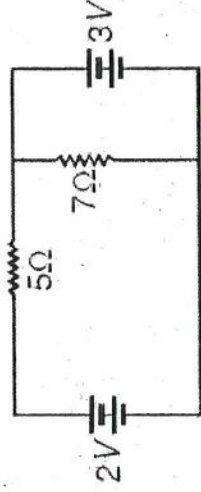
- 5 How would a magnetic needle free to rotate in a vertical plane be oriented at a) the magnetic poles b) at the magnetic equator? 1

Section B

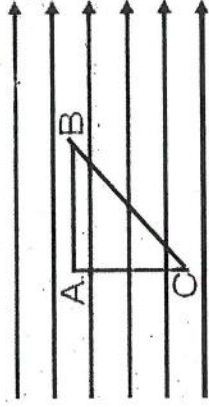
- 6 In the figure given below, a bar magnet moving towards the right or left induces an e.m.f. in the coils (1) and (2). Find, giving reason, the directions of the induced currents through the resistors AB and CD when the magnet is moving (a) towards the right, and (b) towards the left. 2



- 7 Two resistances 5Ω and 7Ω are joined as shown to two batteries of emf $2V$ and $3V$. If the $3V$ battery is short circuited. What will be the current through the 5Ω resistor? 2



- 8 Calculate the work done in taking a charge of $1\mu C$ in a uniform electric field of 10 N/C from B to C given $AB = 5\text{ cm}$ along the field and $AC = 10\text{ cm}$ perpendicular to electric field. 2



- 9 A proton and an alpha particle having the same kinetic energy are in turn allowed to pass through a uniform magnetic field perpendicular to their direction of motion. Compare the radii of the paths of proton and alpha particle. 2
- 10 The magnetic susceptibility of a given material is negative. Identify the type of magnetic material and give the possible range of its relative permeability. How does a sample of this material behave when placed in a region of non uniform magnetic field? 2

OR

What happens to a ferromagnetic material when heated to a high temperature? Explain why.

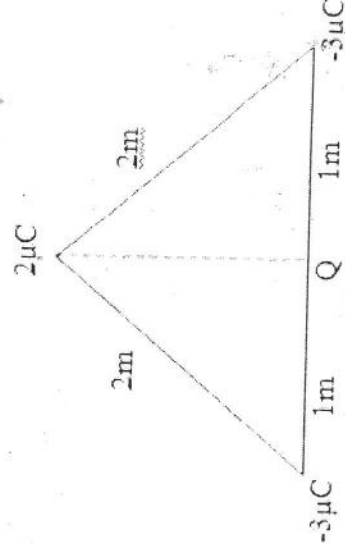
Section C

- 11 A $10\mu F$ capacitor is charged by $30V$ d.c. then disconnected from the source and connected across an uncharged $50\mu F$ capacitor. Calculate the (i) final potential difference across the combination and (ii) initial and final energies. How will you account for the difference in energy? 3

- 12 Use Gauss's law to derive an expression for the field due to a uniformly charged infinite plane sheet. 3
Hence obtain the field between two uniformly charged large parallel sheets of surface charge density $-\sigma$ and $+\sigma$ respectively

- 13 a) Depict the equipotential surfaces for a system of two identical positive charges placed at a distance 'd' apart. 3
b) Deduce the expression for the potential energy of a system of two charges q_1 and q_2 brought from infinity to the points $\vec{r}_1$ and $\vec{r}_2$ respectively in the presence of external field $\vec{E}$

- 14 Find the magnitude and sign of charge 'Q' such that the point charge of $2\mu\text{C}$ is in equilibrium. 3



- 15 a) Draw a schematic sketch of a cyclotron. 3
b) Show that the time period of ions in a cyclotron is independent of both the speed and radius of circular path.

ii) What is resonance condition? Explain how is it used to accelerate the charged particle?

OR

Derive an expression for the magnetic field at a point on the axis of a circular coil carrying current. Hence write the expression for the field at the centre of the coil. How is the direction of field specified?

- 16 a) Derive an expression for drift velocity of the electron in a conductor in the presence of an electric field. 3
b) What is meant by mobility of a charge carrier? Write an expression for the mobility of an electron in a conductor.
- 17 A potentiometer wire of length 100cm having a resistance of 10Ω is connected in series with a resistance R and source of emf 2V of negligible internal resistance. A cell of emf 10mV is balanced against a length of 40cm of potentiometer wire. What is the value of the external resistance R? 3

- 18 a) Explain the difference between the emf 'E' of a cell and the terminal potential difference 'V'. 3

b) A cell of e.m.f. 'E' and internal resistance 'r' is connected across a variable resistor 'R'. Plot a graph showing the variation of terminal potential 'V' with resistance 'R'. Predict from the graph the condition under which 'V' becomes equal to 'E'.

- 19 a) Give two essential characteristics of a material suitable for use as the core of an electromagnet. Give an example. 3
 b) Give three factors on which the strength of an electromagnet depends. 3
- 20 How does a rise in temperature affect the resistivity of a) copper and b) gallium arsenide? 3
 Explain using relevant expression for resistivity.
 Also draw the graph showing the variation of resistivity with temperature for each of the substances. 3
- 21 (i) State Faraday's law of electromagnetic induction. 3
 (ii) A jet plane is travelling towards west at a speed of 1800 km/h. What is the voltage difference developed between the ends of the wing having a span of 25 m, if the Earth's magnetic field at the location has a magnitude of 5×10^{-4} T and the dip angle is 30° ? 3
- 22 A circular coil of 16 turns and radius 10 cm carrying a current of 0.75A rests with its plane normal to a uniform external magnetic field. The coil is free to rotate about an axis in its plane perpendicular to the field direction. When the coil is slightly turned and released, it oscillates about its stable equilibrium position with a time period of 0.5 s. If the moment of inertia of the coil is $1.2 \times 10^{-4} \text{ kgm}^2$, find the magnitude of the magnetic field. 3

Section D

- 23 Rakesh purchased cells for his transistor radio. He felt that cells were not working properly. So, he took the cells to the physics lab and with the help of the potentiometer checked their emf. The emf. was found to be less than the value claimed by the manufacturer. He lodged the complaint with the Consumer forum and received the deserving response. 4
 (a) What values does Rakesh display in taking the matter to the Consumer forum?
 (b) Why, according to you, is it important to act like Rakesh did?
 (c) What is the advantage of using a potentiometer instead of a voltmeter to find the e.m.f. of the cell?
 (d) What is meant by potential gradient of the potentiometer? Would a high value or a low value of potential gradient be desirable for more precise measurement?

Section E

- 24 a) Obtain an expression for the electric potential at a point on the axial line of an electric dipole. 5
 b) Two point charges $-q$ and $-q$ are separated by some distance. A third point charge Q is placed at the mid point of the line joining them. For what ratio of q / Q will the total electrostatic potential energy of the system be zero?

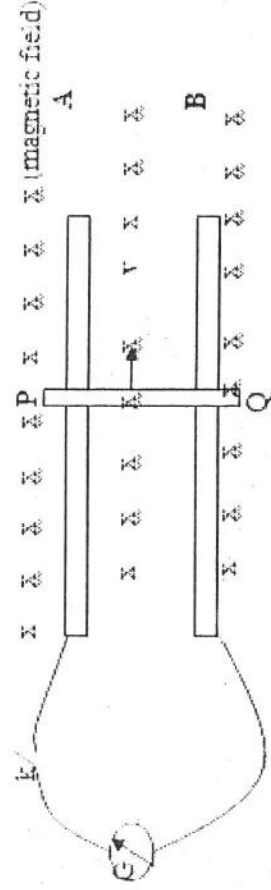
OR

- a) Obtain an expression for the electric field at a point on the equatorial plane of an electric dipole.
 b) An electric dipole is placed in a uniform electric field E with its dipole moment $\vec{p}$ parallel to the field. Find
 (i) the work done in turning the dipole till its dipole moment points in the direction opposite to $\vec{E}$.
 (ii) the orientation of the dipole for which the torque acting on it becomes maximum.

- What are eddy currents? Explain how they are produced.
- Give one drawback of eddy currents. How can eddy currents be reduced?
- Explain two useful applications of eddy currents.

OR

Figure below shows a metal rod 'PQ' resting on the rails 'AB' and positioned between the pole pieces of a permanent magnet producing magnetic field as shown. A galvanometer 'G' is connected to the rails through a switch 'k'. Length of the rod = 15cm, magnetic field = 0.50 T, resistance of the closed loop containing the rod = 9.0m Ω .



- Suppose 'k' is open and the rod moves with the speed of 12cm/s in the direction shown. Give the polarity and magnitude of the induced emf on PQ
- Is there an excess charge built up at the ends of the rod when key is open?
- How much force is required to keep the rod moving at the same speed when the key is closed?
- What is the emf induced in the rod when the permanent magnet is rotated through 90° so that the field becomes parallel to the rails?

- State Ampere's circuital law.

- Derive an expression for magnetic field inside a current carrying toroid. Also show that the field outside the toroid is zero.
- Draw magnetic lines of force for toroid.

OR

- With the help of a labeled diagram, explain the construction and working of a moving coil galvanometer.
- Give two reasons why a galvanometer cannot as such be used as an ammeter.
- Explain with relevant equations how a galvanometer can be converted to a Voltmeter.



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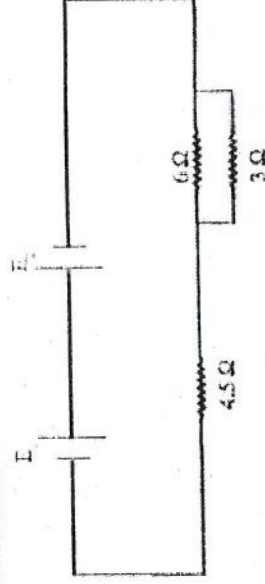
$$\text{Boltzmann constant} = 1.38 \times 10^{-23} \text{ JK}$$

SECTION A

- 1 What is the permittivity of a medium whose dielectric constant is 2? 1
- 2 If the radius of Gaussian surface enclosing a charge is halved. How does the electric flux through the Gaussian surface change? 2
- 3 An ammeter and a milliammeter are converted from the same galvanometer. Out of the two measuring instruments which one has a higher shunt resistance? 3
- 4 Two wire of different areas of cross section are joined in series and connected across a source. If the area of cross section of the first one is double that of the second what is the ratio of the drift velocity of electrons in the two wires? 4
- 5 The value of magnetic inclination at a place is 90° . What is the horizontal component of the earth's magnetic field at that place? 5

SECTION B

- 6 An electric dipole of length 4 cm and charges $\pm 5\mu\text{C}$, when placed with the axis making an angle of 60° with a uniform electric field experiences a torque of $4\sqrt{3}\text{ Nm}$. Calculate the magnitude of the electric field.
- 7 Two cells E1 and E2 in the given circuit diagram have an emf of 5 V and 9 V and internal resistance of 0.3Ω and 1.2Ω respectively. Calculate the value of current flowing through the resistance of 3Ω .



- 8 A charged particle having a charge of 2 nC moving in a magnetic field B with a velocity, $\vec{v} = 10^5 \hat{i} \text{ ms}^{-1}$ experiences a magnetic force $\vec{F} = 2 \times 10^{-5} (-\hat{j}) \text{ N}$. Find the direction and magnitude of the magnetic field.
- 9 Relative permeability of a material, $\mu_r = 400$. Identify the nature of the magnetic material and explain its magnetic behaviour with reference to its internal structure.

OR

What happens to a ferromagnetic material when heated to a high temperature? Explain why.

- 10 The electric current passing through a wire in the direction from Q to P is decreasing.
- a) What is the direction of induced current in the metallic loop kept above the wire as shown in the figure?



- b) Give the statement of the law on which the above conclusion is based.

SECTION C

- 11 A parallel plate capacitor is charged to a potential difference V by a d.c. source. The capacitor is then disconnected from the source. If the distance between the plates is then doubled, state with reason how the following will change:
- a) Electric field between the plates
b) Capacitance
c) Energy stored in the capacitor.
- 12 Use Gauss's law to obtain the field due to an infinite line of charge having uniform linear charge density. Justify the choice of shape of the Gaussian surface considered.
- 13 a) What is the principle of working of a cyclotron? With the help of a schematic sketch explain its working.
b) What is the important limitation encountered in accelerating a light elementary particle such as electron to high energies?

OR

Derive an expression for the magnetic field at a point on the axis of a circular coil carrying

current. Hence write the expression for the field at the centre of the coil. How is the direction of field specified?

- 14 A circular coil of 16 turns and radius 10 cm carrying a current of 0.75A rests with its plane 3

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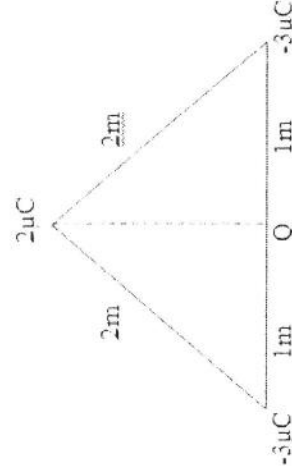
b) Draw a graph showing the variation of 'V' with current 'I' drawn from the cell. How can you determine the internal resistance of the cell from the graph?

- 16 a) Give two essential characteristics of a material suitable for use as the core of an 3
electromagnet. Give an example.

b) Give three factors on which the strength of an electromagnet depends.

- 17 Two extremely small charged copper spheres have their centres separated by a distance of 3
50cm in vacuum. (a) What is the mutual force of electrostatic repulsion if the charge on each is $6.5 \times 10^{-7} \text{ C}$? (b) What will the force of repulsion if (i) the charge on each sphere is doubled and their separation is halved (ii) Two spheres are placed in water (dielectric constant of water is 80)?

- 18 Find the magnitude and sign of charge 'Q' such that the point charge of $2\mu\text{C}$ is in 3
equilibrium.



- 19 In a meter bridge experiment, with a resistance R_1 in left gap and X in right gap, a null 3
point is obtained at 40 cm from left end. When the resistance R_1 is replaced by another resistance R_2 , the null point is obtained at 50 cm from the left end. Find the position of the null point if R_1 & R_2 are put in series in the left gap, with the same 'X' in right gap?

- 20 a) Derive an expression for drift velocity of the electron in conductor in the presence of 3
an electric field.

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SECTION E

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a) State Ampere's circuital law.

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- Derive an expression for magnetic field inside a current carrying toroid. Also show that the field outside the toroid is zero.
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OR

a) With the help of a labeled diagram, explain the construction and working of a moving coil galvanometer.

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c) Explain with relevant equations how a galvanometer can be converted to a Voltmeter.

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a) What are eddy currents? Explain how they are produced.

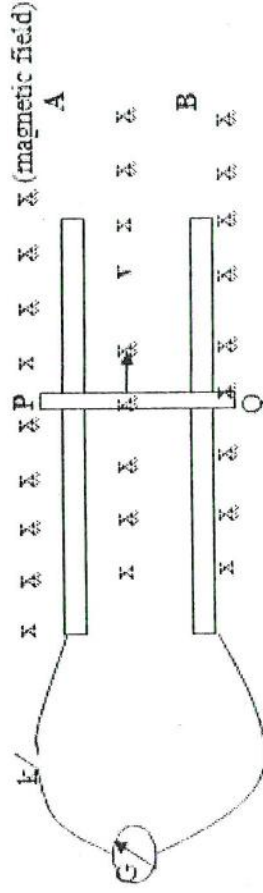
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 - What is the emf induced in the rod when the permanent magnet is rotated through 90° so that the field becomes parallel to the rails?
- 5
- Obtain an expression for the electric potential at a point on the axial line of an electric dipole.
 - Two point charges ' $-q$ ' and ' $-q$ ' are separated by some distance. A third point charge ' Q ' is placed at the midpoint of the line joining them. For what ratio of q / Q will the total electrostatic potential energy of the system be zero?

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- Obtain an expression for the electric field at a point on the equatorial plane of an electric dipole.
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FAHAHEEL AL-WATANIEH INDIAN PRIVATE SCHOOL
AHMADI-KUWAIT

FIRST TERM EXAMINATION 2015 (Set-1)

CLASS - XII - Subject – Accountancy

Time allowed: 3 hrs

Total Pages: -6

Maximum Marks: 80

General Instructions:-

- All questions are compulsory.*
- Calculators are not permitted.*

1. Give four items that appear on the credit and debit side each of the partner's current/c. [1]
2. Why goodwill is considered as an intangible assets but not fictitious assets? [1]
3. What is the nature of revaluation account? [1]
4. Who should compensate whom in case of change in profit sharing ratio of existing partners? [1]
5. Name the account which is opened to credit the share of profit of the deceased partner, till the time of his death to his capital account. [1]
6. If the retiring partner is not paid fully immediately on retirement . How should his capital account be shown in subsequent Balance sheet? [1]
7. In the event of dissolution of a partnership firm , where is provision for doubtful debts transferred. [1]
8. Calculate the interest on drawings @ 15% for the year ended 31-3-2006 when Mr. X withdrew Rs.2,000 at the end of each quarter. [1]
9. K and L are partners in a firm sharing profit and losses in ratio of 3:2 . On 1.4.2014 their Balance sheet was as follows;

Liabilities	Amount(Rs)	Assets	Amount (Rs)
Capitals ; K	80,000	Sundry Assets	1,80,000
L	1,00,000		
	1,80,000		1,80,000.

The profit for the year ended 31.3.2014; Rs 90,000 was divided between the partners without allowing Interest on capital at 6%p.a and commission to K Rs 4,000 per quarter. During the year K with drew Rs 20,000 and L withdrew Rs 27,000.

Pass single journal entry to rectify the error.

[3]

10. P, Q and R are partners sharing profits in the ratio 2:2:1 ratio. The firm closes its book on 31st March every year. P died on 30th June and according to the agreement, the share of profits of a deceased partner up to the date of death is to be calculated on the basis of the average profits of the last 5 years. The net profit of the last 5 years have been 2005- Rs 16,000, 2006- Rs 18,000, 2007- Rs 16,000, 2008- Loss Rs 10,000 and 2009 – Rs 16,000. Calculate P's share of profit up to the date of death and pass necessary journal entry. [3]

11. Deepak and Ganesh were partners in a firm sharing profits in the ratio of 4:3. They admitted Gogi in to partnership who has won a gold medal in world boxing meet for 25% share in the profits. Gogoi acquired his share for profits in the ratio of 1:2 from Deepak and Ganesh. You are required to

- Identify the value in admitting Mr. Gogoi into partnership.
- Calculate the new profit sharing ratio of the partnership [3]

12. Pass journal entry at the time of dissolution of the partnership firm. After transferring of assets & external liabilities to realization account.

- Realization expenses amounted to Rs 3,000. Mr. X a partner has to bear these expenses.
- B to bear realization expenses for which he will get Rs 1,900. The actual expenses paid by B were Rs 1,500.
- There was a credit balance of Rs 75,000 in the profit & loss account. The firm has two partners Jim & Harry who shares profits in the ratio of 3:2. [3]

Q13. Mamata and Seem are partners sharing profits in the ratio of 3:2. They admit Rakhi as a partner for $\frac{1}{4}$ th share in the profits of the firm. Rakhi brings Rs 8,00,000 as her capital. The value of the total assets of the firm was Rs 16,00,000 and outside liabilities were valued at Rs 2,00,000 on that date.

Give the necessary journal entry to record goodwill at the time of Rakhi admission also show your workings. [4]

14. X, Y, Z, D were partners in a firm sharing profits in the ratio of 3; 3; 2; 2. Their capitals were X Rs 1,00,000, Y, 80,000, Z Rs 60,000, D Rs 50,000 respectively. On 1st April 2009 D retired from the firm and the new profit sharing ratio between X, Y & Z was decided in the ratio 3:2:1. On D retirement the goodwill of the firm is valued at Rs 1,80,000. Showing your calculation clearly.

Pass the journal entry of treatment of goodwill on a retirement. [4]

15. Ajit and Baljit were sharing profits in the ratio of 3:2. They decided to admit Chaman into the partnership of $\frac{1}{6}$ th share of the future profits. Goodwill, valued at 4 times the average super profits of the firm, was Rs. 18,000. The firm had assets worth Rs. 15 lakhs and liabilities to the tune of Rs. 12 lakhs. The normal earning capacity of such firms is expected to be 10% p.a. find the average profits/actual profits earned by the firm during the last 4 years. [4]

Q16. A B C was sharing profits in the ratio 3:2:1. They decided to share future profits equally with effect from 1.04.08. They decided to record the effect of the following without affecting the Book value

- i) Profit & loss Rs 40,000
- ii) Advertisement suspense Rs 10,000
- iii) General reserve Rs 40,000.

Pass necessary adjusting entry.

[4]

Q17. In a partnership firm, partners are charged interest on drawings at 12% p.a. During the year ended 31.12.2013, a partner drew as follows:

Date	Amount withdrawn
1.1.2013	Rs 10,000.
31.3.2013.	Rs 16,000.
1.7.2013	Rs 20,000.
31.12.2013	Rs 4,000.

Calculate Interest on drawings.

- b. Hina and Rahim are partners in a partnership firm. The partnership deed provides that interest on drawings will be charged 6%p.a. During the year ended 31st December, 2012. Hina withdrawn Rs 5,000 in the beginning of every month for six months. Rahim withdrew Rs 5,000 at the end of each month for six months. Calculate Interest on partner's drawings.

[4]

Q18. A, B and C are partners in a firm sharing profits and losses in the ratio of 2:2:1. Their fixed capitals were Rs 5,00,000 Rs. 4,00,000 and Rs. 3,00,000 respectively. For the year ending December 31st 2012 the profit of the firm was Rs. 6,00,000. It was subsequently discovered that following transactions were omitted:

- Interest on capital @ 10%p.a.
- Salary to A Rs. 60,000.
- Commission to B Rs. 20,000.
- C had been guaranteed a minimum profit of Rs. 1,20,000.

Pass necessary journal entry to give effect to the above.

[6]

Q19.. Aman and Neha are partners sharing profits and losses in the ratio of 3:2. They decided to dissolve the firm on 1st May, 2014. From the following information given below, complete Realization A/c, Partner's Capital A/c, Bank A/c.

Realization Account

Particulars	Amount(Rs)	Particulars	Amount(Rs)
To Sundry Assets		By Creditors	4,90,000
Machinery	9,00,000	By Mrs Aman loan	8,000
Land and Building	10,80,000	By Bank	
Stock	72,000	Machinery	6,30,000
Debtors	3,60,000	Land and building	12,60,000
To Bank	-----	By Neha's capital	60,000
Creditors		(Stock)	
To Aman capital	8,000	By Net loss	
(Mrs Aman loan)			
To Neha capital	10,000		
(expenses)			

Partner's Capital Account

Particulars	Aman capital (Rs)	Neha capital (Rs)	Particulars	Aman capital (Rs)	Neha capital (Rs)
To Realization			By		
To			By		
To Bank	8,09,600	13,84,400			

Bank A/c

Particulars	Amount(Rs)	Particulars	Amount(Rs)
To Balance b/d		By Realization A/c	
To Realization A/c	18,90,000	By Aman loan A/c	4,000
		By Aman's Capital	
		By Neha's Capital	

Q20 The Balance Sheet of Sindhu, Rahul and Kamlesh, who were sharing profits in the ratio of 3:3:4 respectively, as on 31st March, 2012 was as follows.

Liabilities	Amount (Rs)	Assets	Amount (Rs)
General Reserve	10,000	Cash	16,000
Bills payable	5000	Stock	44,000
Loan	12,000	Investment	67,000
Capital		Land & Building	60,000
Sindhu: 60,000		Sindhu's Loan	10,000
Rahul : 50,000			
Kamlesh: 40,000	1,50,000		
	1,77,000		1,77,000

Sindhu died on 30 June, 2012 . The partnership deed provided for the following on the death of a partner.

- Goodwill of the firm be valued at two years purchases of the average profit for the last three years
- Sindhu's share of profit till the date of death was to be calculated on the basis of sales.

Sales for the year ended 31st March ,2012 amounted to Rs 4,00,000 and that from 1st April to 31st July 2012 Rs 1,50,000. The profit for the year ended 31st March, 2012 was Rs 1, 00,000.

- Interest was to be provided @ 6%p.a.

- The average profits of the last three years were Rs 42,000.

- According to Sindhu's will, the executors should donate his share to "Marti Chaka" an orphanage for girls.

Prepare sindhu's capital account to be rendered to his executor .Also identify the value being highlighted in the question.

[6]

Q21. A & B are partners sharing profits & losses in ratio of 4:1. On April 1, 2014 the capitals of partners were A-Rs. 1, 00,000 and B- Rs. 80,000. The Profit for the year ending 31.3.2015 showed a profit of Rs. 2,50,000. You are required to prepare P & L appropriation account and partners capital account after taking into consideration the following:

- Interest on capital @ 5%p.a.
- Interest on B's loan account of Rs. 80,000 for the whole year.
- Interest on drawings @ 6%p.a. Drawings of the partners; A-Rs. 20,000; B-Rs. 15,000
- Transfer 10% of the distributable profit to the reserve fund of the firm.

[6]

Q22. A and B are partners in a firm sharing profit & losses in the ratio of 3:2. Their Balance sheet as at 31.12.2011

Liabilities	Amount(Rs)	Assets	Amount(Rs)
Capital		Machinery	33,000
A	35,000	Furniture	15,000
B	30,000	Investment	20,000
General Reserve	10,000	Stock	23,000
Bank loan	9,000	Debtors 19,000	
Creditors	30,000	Less: P. D 2,000	17,000
Workmen	6,000	Cash	12,000
Compensation fund	1,20,000		1,20,000

On the date they admitted C in to partnership for $\frac{1}{4}$ th share in the profit on the following terms

- C is brings capital to his share. He brings Rs 7,000 in cash as his share of goodwill.
- Debtors were all good.
- Depreciate Stock by 5% and furniture by 10%.
- An outstanding bill for repairs Rs 1,000 will be brought in the books.
- Half of the investment were to be taken over by A and B in their profit sharing ratio at book value.
- Bank loan paid off.
- Partners agree to share profits in the ratio of 3:3:2.

Prepare Revaluation Account , Partner's capital account , Balance sheet after admission of C.[8]

Q23. X Y and Z are, partners in a firm sharing profits in the ratio of 4:3:2. Their balance sheet as at March 31, 2007 is as under:

Liabilities	Amount R	Assets	Amounts
Creditors	68,000	cash in Hand	63,000
General Reserve	18,000	Debtors	60,000
Wrokmen compensation fund	9,000	Less : Provision for doubtful	(3,000)
Capital Account :	1,90,000		
X	1,40,000	Stock	70,000
Y	1,20,000	Building	2,50,000
Z		Machinery	1,05,000
	5,45,000		5,45,000

Y retires on January 01, 2013 on the following terms:

- Stock was depreciated by 3%
 - Building is appreciated by 5%.
 - There is an outstanding claim for damage of Rs3,200 and it is to be provided for.
 - Goodwill of the firm is valued at Rs 1,44,000. X and Z to share future profits in the ratio of 5:3.
 - Y is to be paid 50,000 in cash and Balance transferred to his loan account.
 - X and Z maintain their capitals in the new profit sharing ratio and to, bring in or withdraw cash for this purpose.
 - Capital of the new firm is fixed at Rs 2,80,000.
- Prepare Revaluation account, capital account and Balance sheet as on that date on retirement of Y.[8]



Max. Marks : 70

Duration : 3 hrs.

Q1 Answer the following question based on database

- Define Degree & Cardinality (1)
- Explain Candidate Key with example (1)
- Answer the following question based on the table given below

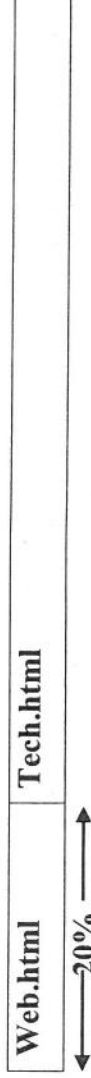
FLIGHT

Flight_No	Flight_Name	Route_No	Starting	Ending	Distance	Fare	Flight_Type	Click to Add
AF902	Indiana	23	New Delhi	Toronto	12000	45000	International	
AI884	Indiana	6	Mumbai	London	7600	25000	International	
IC101	Indigo	10	New Delhi	Lucknow	1200	4500	Domestic	
IC404	Indiana	5	New Delhi	New York	11800	34500	International	
IC884	Indiana	32	New Delhi	Melborne	9000	32000	International	
KF109	King Fisher	1	New Delhi	Chennai	2400	8000	Domestic	
PAS10	San Pascific	8	Chennai	Tokyo	6500	28000	International	
UAE10	Arab Emirates	7	Mumbai	Kuwait	2500	16000	International	
UF430	Jet Airlines	11	New Delhi	Mumbai	1100	3500	Domestic	
USS30	Jet Airlines	65	New Delhi	Dubai	3200	12000	International	
		0				0		

- Write the Primary key for the table Flight? (1)
- Which View is the above table Flight is shown in figure. Can this view be used add new attribute (1)
- What are the Data type for attributes Route_No, Fare and Flight_No, Flight_No (2)
- Give two differences between Text & Memo (2)
- What are two extension of MS Access Database File (1)
- Adarsh is planning to gift a digital album of 'MODEL SAARC CONFERENCE 2014' to his teacher on her farewell. All the images have lots of colour shading and are all static images. Which of the following formats are best suited for this purpose: (1)
 - GIF
 - JPEG
 - AVI
 justify your choice
- What is Virtual Reality? Give Two Uses (2)

Q2. Answer the following questions based on HTML:

- Write a HTML code to create a framed webpage in the following (2)
 - The Page is divided into two frame vertically
 - The left frame is 20% of the page width and display file "Web.html"
 - The right frame is 80% of the page width and displays file "tech.html"



- What is the use of the ALT attribute of an tag? (1)

iii) Name the TAG and ATTRIBUTE to be used in the following situation

1. To start ordered list from 'C'.
2. To set a Check box remain selected by default.

iv) Write the HTML code to generate a Web Page in the format given below :

Multimedia Technology and Education - Windows Internet Explorer

File Edit View Favorites Tools Help

Search: Bing

Multimedia Technology and Education



Multimedia has the capability to combine text, graphics, sounds, still photography, and motion pictures in a smooth and seamless presentation of training programs and other forms of information. Computer and laser disk technologies are integrated in multimedia. An especially effective form of multimedia for use in training activities is digital multimedia.

Career courses

1. Animation
 - 3D animation
 - 2D & 3D animation film making
2. Multimedia
 - Web Designing and Games Development
 - Digital Portfolio Development
3. Web Designing
 - Graphics & Web Design

Courses	
Animation	Available
Multimedia	Available
Web Designing	Available

Consider the following points while writing the HTML code:

1. Title of the page should be "Multimedia Technology and Education".
2. Background color of the page should be "green".
3. Text color of main heading should be "yellow" and font style should be "Arial Bold".
4. Image used in the page is "multimedia.jpg".
5. Page linked to are as specified below:
 - Animation as "animation.html"
 - Multimedia as "multimedia.html"
 - Web Designing as "web.html"
6. Use the concept of lists to display the given numbering.
7. The table should have a border of size 2.

Q2. Answer the following questions based on VBSCRIPT:

- a) Write the equivalent script for the following code using do while--- loop without effecting the output: (2)

```
<SCRIPT LANGUAGE="VBScript">
DIM count,ans
ans=1
count=2
DO
ans=ans*count
count=count+2
LOOP WHILE count<=10
document.write(ans)
</SCRIPT>
```

- b) Give the output of the following code segment: (2)

```
sub result()
dim arr(5)
arr=array(66,55,44,33,22,11)
for i=5 to 0 step -1
    if i mod 2 = 0 then
        arr(i) = arr(i) mod 9
    else
        arr(i)= arr(i)\5
    end if
next
for i=0 to 5
    document.write(arr(i) & "<br>")
next
end sub
```

- c) Rewrite the following code after removing errors with each correction underlined: (2)

```
<Script Type="VBScript">
SUB TOTALJ
DEFINE TOTAL
FOR J = 2 TILL 10 STEP 2
    TOTAL = TOTAL + J
NEXT
MESSAGE ("the total is:"& TOTAL)
END SUB CALL
TOTALJ
</Script>
```

- d) What are the differences between Sub Procedure & Function Explain with Example? (2)
- e) Define the term event. Name the events to be used in the following situations: (2)
- (i) To display a message every time the viewer open a web page.
 - (ii) To select the radio button

- f) Write the HTML code for creating the form given below and also write the embedded VBScript code for the click event of the submit button. (4)

Current Year :	
Current Month Name :	
Enter No :	
Even / Odd	
Click	

Q3. Answer the following questions based on ASP:

- a) What is ASP Engine. (1)
- b) What is the importance of GetallContent method of ContentRotator component? (1)
- c) The alternate command for `<% =("HELLO") %>` (1)
- d) Explain the usage of the REDIM PRESERVE keyword, with an example (1)
- e) Differentiate between Client Side & Server Side Script (2)
- f) Give output of the following statements: (4)
 - i) Response.Write (Abs(4-7*3/2+5))
 - ii) Response.write(strreverse (mid("card game",sqr(25),day(date())/7)))
 - iii) Response.write(left("special character",month(date()+2))
 - iv) Response.write(lcase (mid("Welcome Kuwait",8,instr("performed","rm"))))

Q4. Write a ASP code to read file("data.txt") & display the content of the file in uppercase after replacing every occurrence of Space with "@" for the lines starting with "A" or "T" (4)

Q5. Write a ASP Code to display number of viewer visited the webpage (2)

Q6. Online Bazaar uses its website to make money through banner advertisements. Create an ASP file "online.asp" that uses the AdRotator component to display the advertisements stored in the file "ads.txt". Create a "ads.txt" with 3 advertisements of 200x 600 with border (3)

Online Bazaar
 Grandma's Pickles  Click here

Q7. Answer the following questions based on the unit Web Technologies:

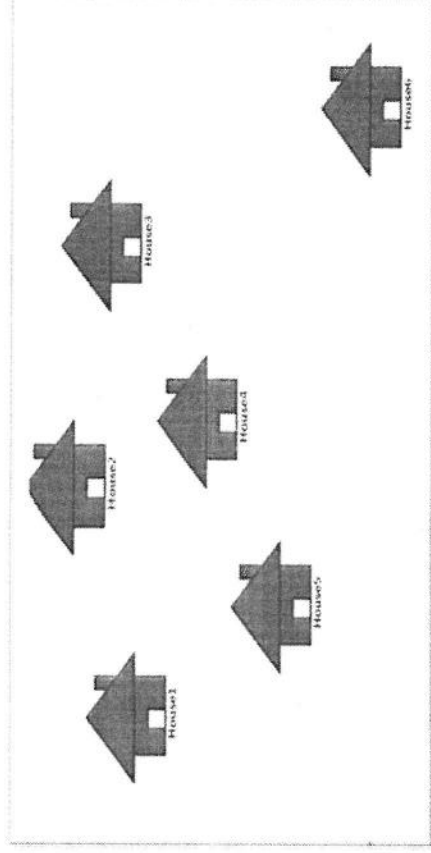
- a) Mr. Ganpati Dudpuri wants to prevent unauthorized access to/from his company's local area network. Write the name of system (software/hardware), which he should install to do the same. (1)
- b) Explain the Following protocol a) FTP b) IMAP (2)
- c) Differentiate between Freeware & Shareware with example (2)
- d) Define UNICODE. (1)

e) Explain Python , Linux

(2)

f) **AVPSchool** of **ANJANI SEN TEHRI GARHWAL** is setting up the network between its different houses. There are 6 houses named as house1 to house 6 as shown below:

(4)



The distances between the different Houses are given below :

House 1 to House 2	150 m
House 2 to House 3	60 m
House 3 to House 4	155 m
House 4 to House 5	5 m
House 5 to House 6	505 m
House 6 to House 1	105 m
House 6 to House 2	7 m
House 4 to House 1	17 m
House 1 to House 3	15 m
House 2 to House 4	90 m

Number of computers

House 1	5
House 2	1
House 3	6
House 4	10
House 5	21
House 6	45

Answer the following questions based on the above given information :

(i) Suggest the most suitable topology for connecting these Houses.

(ii) Where do you think the server should be placed. Justify your choice ?

(iii) APVSchool is planning to link its House situated in the different part of the same village, which type of network will be formed .Give reason.

(iv) Where and why should repeaters and hub/switch be used ?



FAHAHEEL AL-WATANIEH INDIAN PRIVATE SCHOOL
First Terminal Examination 2015-2016
Computer Science (083)
Class XII

Set B

Time: 3 Hours

Maximum Marks: 70

1. a) Identify the incorrect variable names from the list given below: [2]

empID, mob-no, FA1_Marks, long, wk.wage, AhmAdi, \$rate, cost

- b) Name the header files required to compile the program successfully: [2]
void main()

```
{
    int roll=random(40)+1; char lname[15], name[30]; double agg;
    cout<<"First Name & Last Name? "; cin>>name>>lname;
    cout<<"Aggregate? "; cin>>agg;
    strcat(name, " "); strcat(name, lname);
    printf("Roll=%i\nName=%s\nAggregate=%f\n",roll, name, agg);
}
```

- c) Rewrite the complete program after removing the syntax errors (underline the corrections). [3]

```
#include<iostream>
struct passport()
{
    int ppno; name[40]; city[40];
};
void main()
{
    passport pp=(20150729, "PRADIP KRISHNA", "JABBALPUR");
    cout<<pp.ppno<<ppno.name<<ppno::city<<endl;
}
```

2. a) Give the output of following program: [2]

```
#include<iostream.h>
void main()
{
    char str [] ="ExTrANet";
    for (char *p=str; *p; p++)
        *p>='A' && *p<='Z' ? ++(*p) : (*p)--;
    cout<<str<<endl;
}
```

- b) Give the output of following program: [3]

```
#include<iostream.h>
void moo(int& a, int &b, int c)
{
    a+=a+b+c;
    b+=a+b+c;
    c+=a+b+c;
    cout<<a<<', '<<b<<', '<<c<<endl;
}
void main()
{
    int m=7, n=5;
    moo(m, m, n);
    moo(m, n, n);
}
```


b) Declare a class `flysky` with the following specifications:

[5]

Private members:

`pcode` passenger id (integer)
`pname` passenger name (string of 35 character)
`jmls` miles travelled with flysky airline in J class (floating point)
`ymls` miles travelled with flysky airline in Y class (floating point)
`tmls` total miles travelled with flysky airline (floating point)
`points` bonus points (floating point)
void bonus() function to calculate total miles as `jmls + ymls` and calculate bonus points according to the table given below:

Total Miles	Points
<=20000	0
>20000 and <=50000	20
>50000 and <=100000	35
>100000 and <=150000	60
>150000	90

Public members:

Default constructor to initialize `jmls` and `ymls` to zero.

Destructor to display "Object destroyed".

void details() function to input values from keyboard for `pcode`, `pname`, `jmls`, `ymls` and invoke the function bonus().

void display() function to display all the data members on the screen.
 Define all the member functions.

6. **class** employee

```

{
    int eno; char name[20]; double bsal, hra, gsal;
public:
    void empinput ()
    {
        cout<<"Code? "; cin>>eno;
        cout<<"Name? "; gets(name);
        cout<<"Basic? "; cin>>bsal;
        hra=0.4*bsal;
        gsal=bsal+hra;
    }
    void empdisp ()
    {
        cout<<eno<<" "<<name<<" "<<bsal<<" "<<hra<<" "<<gsal<<endl;
    }
    void update(double bas)
    {
        bsal=bas; hra=0.4*bsal; gsal=bsal+hra;
    }
    double basic () { return bsal; }
};
    
```

- a) Write a C++ function **void** appendrec(), to append n (n is a formal parameter) objects of the type `employee` in a binary data file `SAL.DAT` containing objects of the type `employee`. [3]
- b) Write a C++ function **void** countrec(), to read and display all the objects from a binary data file `SAL.DAT` containing objects of the type `employee`. At the end display number of objects (records) present in the file. [3]

- c) Write a C++ function **void displayrec()**, to read all the objects from a binary data file SAL.DAT containing objects of the type **employee** and display only those records where **bsal** less than 100000. [3]
7. a) HOLIDAY.TXT is a text file containing alphabets, digits and special characters. Write a function C++ **void countword()** to display the text file on the screen. At the end count and display number times the word "THE" appear in the file (while counting the word "THE" ignore the case). [3]
- b) HOLIDAY.TXT is a text file containing alphabets, digits and special characters. Write a function C++ **void countwhite()** to display the text file on the screen. At the end display number of white space characters (space / tab / new line character) present in the text file. [3]
8. **struct book**
- ```
{
 int isbn; char title[20]; double price;
};
```
- a) Write a C++ function **void sortisbn (book arr[], int n)** which performs **insertion sort** on array **arr[]** with **n** elements, in **ascending** order on **isbn**. [3]
- b) Write a C++ function **void findisbn (book arr[], int n, int bcode)** which performs **binary search** to find a book using **bcode (isbn is stored in bcode)** on an array **arr[]** sorted on **isbn** with **n** elements. If the search is successful, then display **isbn, title** and **price**. If the search is not successful then display an error message on the screen. [4]
9. a) **MAT[50][40]** is a 2D array stored in the computer's memory. Each element of **MAT** requires 4 bytes of memory. Base address of **MAT** is 1500, calculate the address of **MAT[37][23]** when **MAT** is stored as: i) Row wise ii) Column wise [3]
- b) **MAT[40][20]** is a 2D array stored in the RAM row wise. Base address of **MAT** is 4000. If the address of **MAT[25][18]** is 8144, then find the address of **MAT[38][15]**. [3]





AL NOURI TEACHING ESTABLISHMENT  
**FAHAHEEL AL-WATANIEH INDIAN PRIVATE SCHOOL**  
AHMADI-KUWAIT

FIRST TERMINAL EXAM 2015-2016

SET B

CLASS X11 SUBJECT – BIOLOGY - Max. Marks-70

Section A (1 mark each)

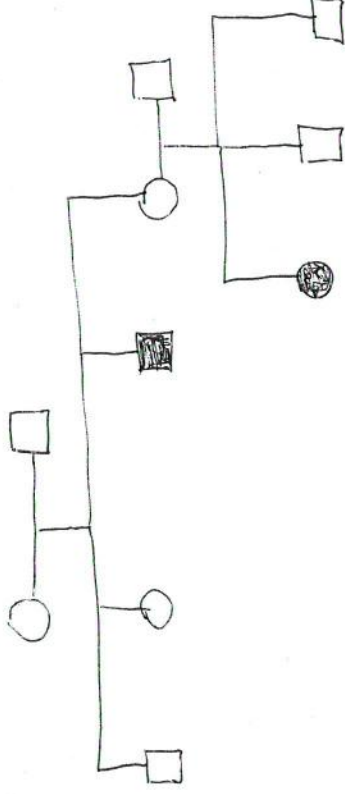
1. Write the full form of PID and CDRI ?
2. A) Note the relationship between the first two words and suggest a suitable word in the third place.  
Proliferative phase: estrogen -----progesrone  
B) Give the no of chromosomes in a) Male germ cells b) Ootid .
3.  $3' \text{AAATACGGATTTCGG} 5'$  .  
Name and mention the significance of the second and fourth codons.
4. Heat killed S +R Nase+ DNAase -> Did the mice live or die ? Illustrate with reason.
5. If there are 40 microspore mother cell in a mature pollen sac in hibiscus how many microspores are produced from anther of this plant. Illustrate with reason.

Section B ( 2 marks each)

6. Name the techniques employed with following cases.
  - a) Transfer of ovum collected from a donor in to the fallopian tube of another female who cannot produce ova but can provide suitable environment for fertilization and development.
  - b) Embryo is formed in laboratory in which sperm is already injected in to ovum.
  - c) Semen is collected either from husband or a healthy donor artificially introduced either into vagina or uterus.
  - d) The Embryo with more than 8 blastomere in to the uterus.
7. Name the interaction in each of the following and explain.
  - a) Ascaris living in the intestine of human.
  - b) Sucker fish attached to the shark.
  - c) Wasp pollinating inflorescence
  - d) Pencillin growing in staphylococcus bacteria.

- 8) What are the tubes that transport the sperms from the testis to the urethra?  
Mention the position of the duct and the pathway in which the sperm passes.

9)



- Is the trait recessive or dominant? Give reason.
- Is the trait sex linked or autosomal? Give reason.
- Give the genotypes of the parents in generation I and of their third and fourth child in generation II.

10a) Draw a Schematic transcriptional unit of DNA and label all the parts. Briefly Explain.

11. Human zygote has xy chromosome along with 45 autosomes. How does it happen? Explain with symptoms.

12a) What are Iso gametes? Give an example. Depict a diagram to show the fusion of isogametes.

b) In date palm plantation only some of the date palm plant has fruits. While some others only had flowers but no fruits. Justify the statement with reason.

13) Name any two bioactive molecules and the respective micro organisms and its role in human welfare.

14) Depict a digrammatic representation of Organismic responses to abiotic factors. Name and explain the three types of responses.

15a) AGA and AGG can code for arginine.

b) AUG can only code for methionine.

What are the features mentioned in the above mentioned codes.

c) How many codons are there in 600 nucleotides

### Section C (3 marks each )

16).How is sex determined in Honey bee ?Depict with the help of a schematic diagram.

17)Meth-phynyl alanine – Valiene glutamic acid- Tyrosine Serine - stopcodon is the polypeptide which is been translated.

a)Mention the DNA base sequence from which the corresponding m-RNA has been transcribed.

.Depict the transcription and translation of the above mentioned poly peptide which has been transcribed.

18).A non Colour blind couple was informed by their doctor that there is a possibility of a Colorblind child being born to them. Draw a checker board and find out the percentage of such a child among the progeny. Briefly explain colour blindness.

19)Name three biocontrol agents (bacteria ,Virus and a fungus) and its role in agriculture.

20)) Repressor protein + -----→ what happens  
Inducer .

Explain briefly with the help of diagram.

21).A black dog is mated with a white dog produced all the white of springs. When these white dogs were crossed they were 19 white puppies and 6 black puppies .

- How many of the white puppies out of the 19 are homozygous.
- What dog will you choose to cross the unknown F1 in order to find its genotype .
- The egg of an animal contains 10chromosome. How many autosomes would these be in karyotype of this animal.

22).Mention the contribution of following scientists.

- Alfred Wallace
- Morgan
- Severo Ochoa

23) The length of the DNA is approximately 2.2 meters. How is such a long polymer packed in a typical mammalian cell. Explain with neat labeled diagram.

24)) A child suffering from thalassemia is born to a normal couple. But the mother is being blamed by the family for developing a sick baby.

- a) What is Thalassemia?
- b)
- c) How would you counsel the family not to blame the mother for delivering a child suffering from this disease ? Explain.
- d)
- e) List the values your counseling can propagate in the families.

25)A secondary oocyte has been released from the ovary and reaches the fallopian tube .  
.Trace the events till implantation with neat labeled diagram.

#### Section D (5 marks each)

26a) In man assume that black hair is dominant over golden hair and left hand is recessive to right hand. A black hair right handed woman marries a golden hair right handed man and their first child is golden hair and left handed.what are the genotypes of the parents and the possible offspring. Show the cross (take the letters B hair and R hand) .

- a) Explain the process of Transcription in human beings with neat labeled diagram.

27) Explain two types of growth models with graphs and equations.

28) a) Draw a neat labeled diagram of C.S of an apple.

- b) What is pollen pistil interaction? Mention the events happen in this processes.

c) Draw neat labeled stages to show microspore maturing in to a pollen grain.

- f) Name the reproductive vegetative properties of following;

g) 1)water hyacinth 2)banana 3)dahlia 4)ginger





AL NOURI TEACHING ESTABLISHMENT  
**FAHAHEEL AL-WATANIEH INDIAN PRIVATE SCHOOL**  
AHMADI-KUWAIT

FIRST TERMINAL EXAM 2015-2016

SET A

CLASS XII SUBJECT – BIOLOGY - Max. Marks-70

Section A (1 mark each)

1. The meiocyte of an onion plant contain 32 chromosomes. Work out the no of chromosomes found in a) Endosperm b) central cell.



2. Label and name the part which is protective and responsible for producing new plants.
3. In the whip tail lizards only females are born generation after generation. There are no males. How is it possible?
4. Heat killed S+protease +R Nase → Did the mice live or die?. Illustrate with reason?
5. Draw a ribonucleotide with purine as base.

Section B (2 marks each)

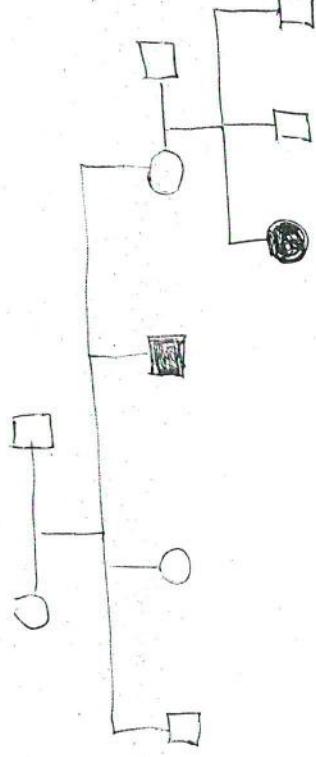
6. Name the source of Gonadotropins in human females. Explain the changes brought about in the ovary by their hormones during menstrual cycle.
7. Name the blank spaces a, b, c and d from the given table below.

| Sr. no. | Types of microbes | Scientific name | Product | Medical application |
|---------|-------------------|-----------------|---------|---------------------|
| i)      | Fungus            | a)              | b)      | immunosuppressant   |
| ii)     | Fungus            | c)              | Statin  | d)                  |

8. A mother of one year daughter wanted to space her child. Her doctor suggested CuT. Explain it contraceptive action.

9. How does VNTR differ from probe?

10.



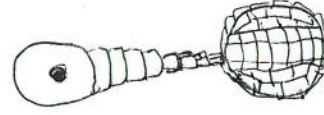
a) Is the trait recessive or dominant? Give reason.

b) Is the trait sex linked or autosomal? Give reason.

c) Give the genotypes of the parents in generation I and of their third and fourth child in generation II

11. Mention the difference between estrous cycle and menstrual cycle?

12. a) Identify the figure.



b) Name the initial cell from which this structure is developed.

c) Draw the next mature stage and label the parts.

13. Name the interaction in each of the following
- Cuckoo lays her eggs in the crow's nest.
  - Orchid grows on a mango tree.
  - Ticks on the skin of dogs
  - Sea anemone is often found on the shell of hermit crab.

14. A) How is cuscute adapted to be a parasitic plant?

b) Why do cattle avoid browsing in *Calotropis* plant?

15) Fill up a, b, c and d;

| Sr. no | item           | What it represents in the plant |
|--------|----------------|---------------------------------|
| i      | pericarp       | a                               |
| ii     | b              | Cotyledon in grass family       |
| iii    | Embryonal axis | c                               |
| iv     | d              | Remains of nucellus in a seed   |

### Section C (3 marks each)

16) How is sex determined in Honey bee?

Depict with the help of a schematic diagram.

17) Methionine, alanine, glutamic acid, valine, Serine – Tyrosine stop codon is the polypeptide which is being translated.

a) Mention the DNA base sequence which from the corresponding m-RNA has been transcribed. Depict the transcription and translation of the above mentioned polypeptide chain.

18) A non haemophilic couple was informed by their doctor that there is a possibility of a hemophilic child being born to them. Draw a checker board and find out the percentage of such a child among the progeny. Briefly explain haemophilia.

19) Microbes play a dual role when used for sewage treatment as they not only help to retrieve usable water but also generate fuel. Explain.

20) Repressor protein

+

-----→ what happens

Inducer

Explain briefly with the help of diagram.

21) Human zygote has xxy chromosome along with its autosomes. How many X chromosomes are present in the ova of the above mentioned zygote. Name the disorder? How does it happen?

22) A barking dog is mated with a silent dog produced all the silent offspring. When these silent dogs were crossed they were 19 silent puppies and 6 barking puppies.

- a) How many of the silent puppies out of the 19 are homozygous.
- b) What dog will you choose to cross the unknown F1 in order to find its genotype?
- c) The egg of an animal contains 10 chromosomes. How many autosomes would these be in karyotype of this animal

23) How do the following reproduce by vegetative propagation.

- 1) Water hyacinth 2) Banana 3) Dahlia 4) Sugar cane.

2) What is common about the above mentioned type of vegetative propagation?

3) In papaya orchid only some of the papaya plant has fruits. While some others only had flowers but no fruits. Justify the statement with reason.

24). The length of the DNA is approximately 2.2 meters. How is such a long polymer packed in a typical mammalian cell. Explain with neat labeled diagram.

25) A child suffering from thalassemia is born to a normal couple. But the mother is being blamed by the family for developing a sick baby.

- a) What is thalassemia?
- b) How would you counsel the family not to blame the mother for delivering a child suffering from this disease? Explain.
- c) List the values your counseling can propagate in the families.



**Section D (5 marks each)**

- 26a) In man assume that black hair is dominant **over golden** hair and left hand is recessive to right hand. A black hair right handed woman marries a golden hair right handed man and their first child is golden hair and left handed. what are the genotypes of the parents and the possible offspring. Show the cross (take the letters B hair and R hand)
- b) Explain the process of Transcription in human beings with neat labeled diagram.
- 27) Explain two types of growth models with graphs and equations.
- 28a) Draw a neat labeled diagram of C.S of an apple.
- b) What is pollen pistil interaction? Mention the events happen in this processes.
- c) Draw neat labeled stages to show microspore maturing in to a pollen grain.
- d) If there are 50 microspore mother cell in a microsporangium how many pollen grains are produced from an anther.

