Xeroxed

SINDHI HIGH SCHOOL, HEBBAL
ANNUAL EXAMINATION (2015-16)
SUBJECT:- ENGLISH CORE

Class XI **Max marks: 80**
Date: 06.02.2016 **Time: 3 hours**
General Instructions: **No. Of sides:- 04**

This paper is divided into three sections.
Section A: Reading 20 marks
Section B: Writing Skills and Grammar 30 marks
Section C: Literature and Long Reading Text 30 marks.
Attempt all questions and adhere to the word limit.

==========

SECTION A (READING & COMPREHENSION) 20 MARKS

1. Read the given poem and answer the questions that follow: (12 Marks)

HOPE

"Hope" is the thing with feathers -
That perches in the soul -
And sings the tune without the words -
And never stops - at all -

And sweetest - in the Gale - is heard -
And sore must be the storm -
That could abash the little Bird
That kept so many warm -

I've heard it in the chilliest land -
And on the strangest Sea -
Yet - never - in Extremity,
It asked a crumb - of me.

Emily Dickinson

A. In this poem the author, Emily Dickinson, compares hope to:
(a) hope (b) a storm (c) a bird (d) nothing

B. Each stanza in this poem has _____lines.
(a) 0 (b) 1 (c) 4 (d)12

C. Using the word "perches" instead of "sits" makes the reader think of a bird. This is an example of:
(a) diction (b) climax (c) rhyme (d) all of the above

D. Dickinson's comparison of hope to a bird is made in the form of a:
(a) lie (b) simile (c) non-fiction (d) metaphor

E. In the second stanza, which begins with the line "And sweetest - in the Gale - is heard -" the rhyme scheme is:
(a) A A A B (b) A B A B (c) A B C A (d) A B B A

F. The theme of the poem is:
(a) Hope flies away and leaves us alone.
(b) Hope sings, waits patiently and never asks for anything from us.
(c) Birds are everywhere, you can't escape them.
(d) Birds hurt people by attacking them during a storm.

ii. **Answer the following questions briefly:** (2x3=6)

a. Why is hope called 'that which perches on the soul'?
b. Bring out how hope makes an impact on everyone.
c. Interpret the last stanza in your own words.

2. On the basis of your reading of the passage given below make notes on it, in points only using headings and sub-headings. Use recognizable abbreviations (wherever necessary – minimum 5) and a format you consider suitable. Also supply an appropriate title to it. After making notes, do write the summary in brief. (5+3=8)

(1) "Cancer is one offshoot of smoking. There is much more," says Dr. Vikram Jaggi, a chest specialist who runs a Quit Smoking Clinic at his Asthma, Chest and Allergy Centre in Delhi. He sounds ominous when he says, "A person who has smoked 20-30 cigarettes regularly for more than 10 to 15 years has reduced his life expectancy by about 10 years. 50 percent of the heavy smokers will die due to a cause related to smoking."

(2) When you take a puff, the nicotine in the cigarette reaches the oral cavity, goes into the blood stream, liver and reaches the brain in eight seconds flat. With every cigarette you smoke, 2.5 mg of nicotine enters your body. Gradually, this affects the brain – like a drug addiction. In fact, nicotine addiction is much stronger than cocaine or morphine, says Dr. Jaggi. It affects the blood stream, has an adverse effect on cholesterol, causes thickening of arteries, affects the heart, increases the heart rate and heart attack propensity, causes stroke, various kinds of cancer, and problems in the lungs, particularly in the air tubes (like bronchitis and emphysema). There are approximately 4,000 identified chemicals in cigarette smoke, of which about 600 are known to be carcinogenic.

(3) It is clearly documented that a pregnant woman who smokes has more still births, more abortions, and her children will weigh 20-25 percent less than children of non-smoking mothers. Even after child birth, if a woman continues to smoke and the child is around, there is possibility of crib death. Children of women who smoke have two times more infection of the throat and ear than non smoking mothers' kids.

(4) A smoker has wrinkled skin, yellow teeth, sagging cheeks, greying hair and is prone to baldness. Teeth become yellow and prone to dental problems and fall spontaneously. Smokers have a coated tongue and lose their taste buds. Those who quit smoking suddenly realize the taste of food.

(5) Everybody knows smoking causes lung cancer but it also causes emphysema and bronchitis. These are very, very serious long-term conditions which are debilitating. It increases the bad cholesterol and decreases good cholesterol. It narrows the arteries which take blood to the heart. The heart rate in turn increases, so does the pulse rate, and more adrenaline is pumped into the body, which causes the heart to pump faster. All this in turn, can cause heart attack. Gangrene in the lower limb is mostly 100 percent related to smoking. The arteries that supply blood to the lower limbs, toe etc., get thin and blocked. In this case, there is no choice but to amputate the limb. Smoking also causes impotence.

(6) Nicotine causes addiction to cigarettes. But nicotine is not solely responsible for all the harmful effects of smoking. Other constituents like carbon monoxide, tar, etc. cause the other damage associated with smoking.

(7) Roughly one fourth of whatever smoking does to smokers is what it does to passive smokers. "Quitting is ideal but more ideal would be not to start smoking in the first place. After all, smokers start young and they begin because of the advertisements. Ten percent of the government's excise revenue comes from cigarettes; two percent of the total government revenue again comes from cigarettes. The government is not going to let go of it," says Dr. Jaggi. He further adds, "Some sports brands have them on sports gear due to which children actually think sportsmen smoke".

(8) "Remember the Marlboro man, who was considered the macho man in the US? He died of smoking. The next model they took also died of smoking. Need we say more?"

SECTION B (WRITING AND GRAMMAR) (30 Marks)

3. You are Anupam/Anupama Mishra, a resident of Yelahanka, Bangalore. You own a commercial space at a reputed shopping arcade at Bangalore, which you wish to place on lease. Draft an advertisement in this regard in the classified columns of the daily newspaper, in not more than 50 words. Invent necessary details. **(4)**

4. You are Asha/AmitAnand, a college student, actively involved an NGO, SUSHIKSHA, which promotes the noble endeavor of eliminating illiteracy from Indian society. Write a letter to the Editor of The Times of India, in about 150 words, elaborating the Each One, Teach One endeavor and inviting more young volunteers to join hands towards the issue. **(6)**

5. Many road accidents culminate in deaths, due to non-availability of swift medical care. Reluctance of the public to react practically to such situations could be counted as a valid reason. Draft an article in about 200-250 words pondering on other flaws that lead to this state and possible measures to better the prevailing condition. You are Raj/Rajni Sanyal, Sub-Editor to the fortnightly magazine, The Citizen. **(10)**

6. The following passage has not been edited. There is one error in each line. Find the error in the line. Write the error and the correct word in the space provided. **(5)**

Tens of thousands of bats emerge	eg. emerge emerged
from under the bridge. It were	a) ....
a amazing sight. I learnt a	b) ....
few about these creatures. The baby	c) ....
bats is known as pups. Each	d) ....
mother bat delivers only one pups.	e) ....
They are usually born on June/July.	f) ....
On an average a pup weigh	g) ....
about a third off mother's weight.	h) ....
The mother bird nurses his	i) ....
baby in five weeks.	j) ....

7. Do as directed: **(1x5=5)**

a. The teacher told me to go out of the class. (Change into passive voice)
b. The milkmaid said, "How I wish I could marry a prince!"
(Change into reported speech)
c. The student stood first in academics. The student excels in co-curricular activities. (Combine using not only, but also)
d. The judge gave the verdict in the opponent's favour.
(Re-write using past continuous tense)
e. Raman is an excellent swimmer. (Pick out the adjective from the sentence)

SECTION C (LITERATURE & LONG READING TEXT) (30 Marks)

8. Read the given extract and answer the questions that follow: (3)

"When did my childhood go?
Was it when I found my mind was really mine
To use whichever way I choose,
Producing thoughts that were not those of other people,
But my own, and mine alone
Was that the day!"

a. What is the thought that dwells in the speaker's mind, when he says these lines? (1)

b. Why does the speaker prioritize the spirit of independence? (1)

c. Elaborate in your own words the poet's mindset and perceptions on life, as is understood from the above lines. (1)

9. Answer any 3 of the following questions in about 50-60 words. (3x3=9)

a. How did the narrator derive the will to fight out the challenge before him, despite being bowed down, in the narrative "We are not afraid to die……"?

b. "Among all the things, this was easiest to forget." concludes the narrator of The Address. What prompts her to say these words?

c. What are the principal biological systems that sustain the earth's ecological balance? In what context has it been mentioned in the lesson The Ailing Planet?

d. State any three instances that justify the plot of The Tale of Melon City to be a political satire.

10. Answer any one of the given questions in about 150 words: (6)

Elaborate the gradual transition observed in the relationship the Khushwant Singh shared with his grandmother.

OR

Why was King Tutankhamun's death associated with so much controversy and intrigue?

11. Answer any one of the questions below in about 150 words: (6)

How does the small mining town of Bryngower help the young medical intern Andrew Manson change his negative perspectives on life?

OR

How does Mrs Fitzgerald contribute to bringing about a change for the better in the Pearson home?

12. Answer any one of the following questions in not more than 150 words: (6)

Booker Washington is convinced that the knowledge he acquired from life far outweighed the knowledge he gained from books. How far is his conviction justified?

OR

General Armstrong exerted a deep influence on Booker Washington, so much so that he considers Armstrong to be his mentor. Elicit reasons mentioned in the book to re-instate this statement.

SINDHI HIGH SCHOOL, HEBBAL
ANNUAL EXAMINATION 2015 - 16
SUB:- PHYSICS

CLASS: XI **MARKS: 70**
DATE : 08.02.2016 **TIME: 3 hrs**
No of sides:03

General Instructions:

1. All Questions are compulsory.
2. Question numbers 1 to 5 are to be answered in one word or one sentence each carries 1 mark .
3. Question numbers 6 to 10 are to be answered in approximately 20 to 30 words each carries 2 marks.
4. Question numbers 11 to 22 are to be answered in approximately 30 to 50 words each carries 3 marks.
5. Question number 23 is to be answered in approximately 40 to 70 words each carries 4 marks.
5. Question numbers 24 - 26 are to be answered in approximately 80-120 words each carries 5 marks.

==========

1. Can a body have zero velocity and still be accelerating?

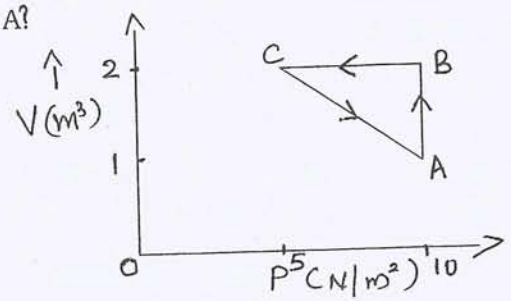
2. A truck and a car are moving with the same kinetic energy on a straight road. Their engines are simultaneously switched off. Which one will stop at a lesser distance?

3. The moon has no atmosphere. Why?

4. The block of wood is floating on water at 0°C with a certain volume 'V' above the level of water. The temperature of water is gradually increased from 0°C to 8°C. How does the volume V change with this change in temperature?

5. 400J of work is done on a gas to reduce its volume by compression adiabatically. What is the change in internal energy of the gas?

6. An ideal gas is taken through the cycle A -> B -> C -> A as shown in fig. If the net heat supplied to the gas in the cycle is 5J, what is the work done by the gas in the process C -> A?



7. The temperature of an ideal gas is increased from 120k to 480k. If at 100k the root mean square velocity of the gas molecular is 'V', then what will be the root means square velocity at 480k.

8. Find the torque of a force $(7\hat{i} - 3\hat{j} - 5\hat{k})$ about the origin, which acts on a particle whose position velocity is $(\hat{i} + \hat{j} - \hat{k})$

9. How does the kinetic energy of a body change if its momentum is doubled?

10. Which of the following functions of time represent
    (a) Simple harmonic motion (b)periodic but not simple harmonic:
    i) $\sin\omega t + \cos\omega t$ ii) $\sin^2\omega t$ iii) $\cos(2\omega t + \pi/2)$ iv) $\sin\pi t + \cos 2\pi t$

11. What is the analogue of mass in rotational motion? Derive the expression for the kinetic energy of the rotating body.

12. The radius of curvature of a concave mirror measured by spherometer is given by $R=\frac{l^2}{6h}+\frac{h}{2}$. The value of l and h are 4cm and 0.065 cm respectively. Compute the error in measurement of R.

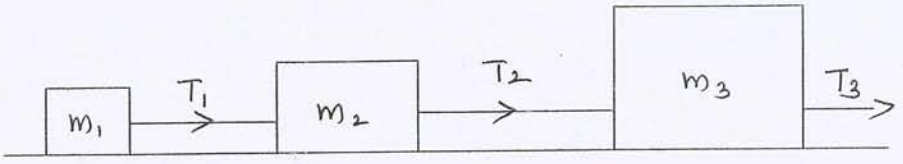
13. Draw the following graphs for an object under free fall.
    a) Variation of acceleration with respect to time.
    b) Variation of velocity with respect to time.
    c) Variation of distance with respect to time.

14. Two balls are thrown simultaneously. 'A' vertically upwards with a speed of 20m/s from the ground and 'B' vertically downwards from a height of 40m with the same speed and along the same line of motion. At what points do the two balls collide?

15. An aeroplane travelling at a speed of 5000km/hr tilts at an angle of 30^0 as it makes a turn. What is the radius of the curve?

16. A person of mass m is standing in a lift. Find his apparent weight when the lift is
    (a) Moving upward with uniform acceleration a
    (b) Moving downward with uniform acceleration a (<g)
    (c) Falls freely

17. Three blocks are connected as shown on a horizontal frictionless table, and pulled to the right with a force of $T_3 = 60N$.



If $m_1 = 10kg$, $m_2 = 20kg$, $m_3 = 30kg$. Find T_1/T_2.

18. State and prove equation of continuity?

19. A stone is dropped from a height h. Prove that the energy at any point in its path is mgh.

20. State Newton's law of cooling. Deduce the relation $\log (T - T_0) = -kt + c$. Where the symbols have their usual meaning?

21. Using the law of equipartition of energy, determine the value of γ for
    a) Monoatomic & b) Triatomic gases.

22. Show that SHM may be regarded as the projection of uniform circular motion along the diameter of the circle. Hence derive an expression for
    (i) displacement (ii) velocity (iii) acceleration of a particle executing SHM.

23. Construction for metro line was carried out day and night. One night when the work was in full swing, suddenly chain of the Crain, lifting a heavy concrete block, snapped and it fell down. Immediately, people from nearby area came for help. They lifted the concrete and saved many lives. Injured were transferred to hospital without waiting for police to arrive.
    i) What values of locals helped in saving lives?
    ii) A Crain having steel ropes is used to lift heavy loads up to 10^4 kg. The elastic limit for steel is 3×10^8 N/m^2. What should be the radius of the steel rope used?
    iii) Which is more elastic – rubber or steel?

24. With the help of P-V diagram, Explain the construction and various operations for Carnot's heat engine working between two temperatures. Hence derive the expression for efficiency of the engine in terms of two temperatures. .

25.(i) Derive an expression for 'g' at a depth 'd' from the surface of the earth. Consider the earth as sphere of uniform mass density.

(ii) At what height from the surface of the earth, will the value of 'g' be reduced by 36% from the value of the surface? Radius of earth = 6400km.

26.(i) What is a projectile? Derive the expression for a) Time of flight and b) Horizontal range, for a projectile thrown upwards making an angle θ with the horizontal direction.

(ii) A ball is kicked at an angle of 30^0 with the vertical. If the horizontal component of its velocity is 19.6 m/s. find the maximum height.

****

24. With the help of P-V diagram, Explain the construction and various operations for Carnot's heat engine working between two temperatures. Hence derive the expression for efficiency of the engine in terms of two temperatures. .

25.(i) Derive an expression for 'g' at a depth 'd' from the surface of the earth. Consider the earth as sphere of uniform mass density.

(ii) At what height from the surface of the earth, will the value of 'g' be reduced by 36% from the value of the surface? Radius of earth = 6400km.

26.(i) What is a projectile? Derive the expression for a) Time of flight and b) Horizontal range, for a projectile thrown upwards making an angle θ with the horizontal direction.

(ii) A ball is kicked at an angle of 30^0 with the vertical. If the horizontal component of its velocity is 19.6 m/s. find the maximum height.

****

24. With the help of P-V diagram, Explain the construction and various operations for Carnot's heat engine working between two temperatures. Hence derive the expression for efficiency of the engine in terms of two temperatures. .

25.(i) Derive an expression for 'g' at a depth 'd' from the surface of the earth. Consider the earth as sphere of uniform mass density.

(ii) At what height from the surface of the earth, will the value of 'g' be reduced by 36% from the value of the surface? Radius of earth = 6400km.

26.(i) What is a projectile? Derive the expression for a) Time of flight and b) Horizontal range, for a projectile thrown upwards making an angle θ with the horizontal direction.

(ii) A ball is kicked at an angle of 30^0 with the vertical. If the horizontal component of its velocity is 19.6 m/s. find the maximum height.

****

SINDHI HIGH SCHOOL, HEBBAL
ANNUAL EXAMINATION 2015-16
Subject: CHEMISTRY

CLASS: XI **MARKS:70**
DATE: 03.02.16 **TIME:3Hrs**
General Instructions: **No. of sides:- 03**

1. All questions are compulsory.
2. Marks for each question are indicated against it.
3. Question numbers 1 to 5 carries 1mark each.
4. Question numbers 6 to 10 carries 2 mark each.
5. Question numbers 11 to 22 carries 3 mark each.
6. Question number23 carry 4 marks .
7. Question numbers 24 to 26 carries 5 mark each.
8. Use log tables if necessary .Use of calculators is not permitted .

---

1. Arrange the given carbocations in the increasing order of their stability; $(CH_3)_2CH^+$, $CH_3CH_2^+$, $(CH_3)_3C^+$, CH_3^+. Give reason for your answer. **(1)**

2. Zn, Cd and Hg are generally not considered as transition metals. Give reason. **(1)**

3. Out of methanol and water which has higher viscosity and why? **(1)**

4. Define BOD? **(1)**

5. At what temperature, average velocity of oxygen molecule is equal to the rms velocity at 27°C ? **(1)**

6. Explain the structure of trimethylamine and trisilylamine. Out of these two which is more basic? **(2)**

7. (a) Li has highest I.E in group 1 elements, yet it is the strongest reducing agent. Why? **(1+1)**
   (b) Name the alkali metal which floats on water without any apparent react with it.

8. What are smog? How are classical and photochemical smog different? **(2)**

9. The density of a gas is 3.80 g/L at S.T.P. Calculate its density at 27°C and 700 torr pressure. **(2)**

10. Define with suitable example ; (a) salt hydrolysis. (b)Lewis acid **(1+1)**

11. (a) Discuss the principle and method of softening of hard water by synthetic ion-exchange resins. **(2 +1)**
    (b) What do you understand by water gas shift reaction?

12. A compound contains 4.07% hydrogen, 24.27% carbon and 71.65% chlorine. Its molar mass is 98.96 g. What are its empirical and molecular formulas? **(3)**

13. (a) Mention the main constituents of Portland cement? **(1+1+1)**
    (b) Why is the temperature maintained around 393 K during the preparation of plaster of Paris?
    (c) Halides of Be dissolve in organic solvents while those of Ba do not. Why is it so?

14. (a) CO_2 is a gas. Explain. **(1+1+1)**
    (b) Out of Cl or Ar which has more radii. Why?
    (c) Why second electron gain enthalpy of sulphur is positive?

15. (a) An ion with mass no. 56 contains 3 units of positive charge and 30.4% more neutrons than electrons. Assign the symbol to this ion. **(2+1)**
    (b) With what velocity must an electron travel so that its momentum is equal to that of a photon of wavelength 560 nm?

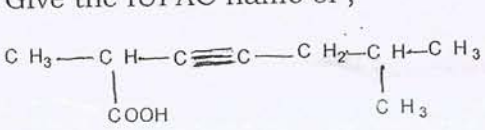
16. Calculate the entropy change for the rusting of iron according to the reaction: $4\ Fe(s) + 3\ O_2(g) \text{------>}\ 2\ Fe_2O_3(s)$, $\Delta H^0 = -1648$ KJ/mol. Given that the standard entropies of Fe, O_2 and Fe_2O_3 are 27.3,205.0 and 87.4 J/K/mol respectively. Will the reaction be spontaneous at room temperature(25°C)? Justify your answer with appropriate calculations. (3)

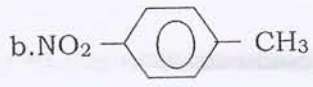
17.(a) Which of the two is paramagnetic: V(IV) or V(V) and why? (1+1+1)
(b) What is the maximum number of electrons that can be present in an atom in which the highest principal quantum no. is 4?
(c) How many electrons in sulphur can have n+l=3?

18.(a) Calculate the bond energy of C-H bond , given that the heat of formation of CH_4 , heat of sublimation of carbon and heat of dissociation of H_2 are -74.8, +719.6 and 435.4 KJ/mol respectively. (2+1)
(b) Calculate the difference between heat capacity at constant volume and constant pressure for 10 moles of an ideal gas.

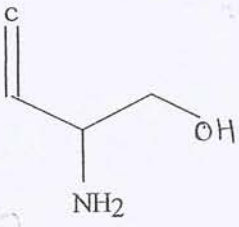
19.(i) Balance the given redox reaction using ion electron method; (2+1)
(a) $MnO_4^- + SO_2 \longrightarrow Mn^{2+} + SO_4^{2-}$ [acidic medium]
(b) $Zn + NO_3^- \longrightarrow Zn^{2+} + NH_4^+$ [basic medium]
(ii) Is it safe to store aluminium salt solution in silver container? Why?
$[E^\theta_{Al^{3+}/Al} = -1.66\ V\ ; E^\theta_{Ag^+/Ag} = 0.80V]$

20.(i) Give the IUPAC name of ; (2+1)

a. 

b. 

d. $C_6H_5COC_6H_5$



(ii) In the estimation of sulphur by Carius method, 0.468 g of an organic compound afforded 0.668 g of barium sulphate. Find out the percentage of sulphur in the compound [molarmass of barium sulphate=233g]

21. Give suitable reason for; (1+1+1)
(a) Iodination of methane can be carried out in the presence of oxidizing agents only.
(b) Addition of hydrogen bromide to propene results in 2-Bromopropane in absence of peroxide, while in its presence 1-Bromopropane is obtained.
(c) Ethylene is acidic compared to ethane.

22.(i)Distinguish between; (2+1)
(a) Electromeric effect and inductive effect (b) Homolysis and heterolysis.
(ii) What is the relationship between the members of the following pairs;
(a) CH_3CH_2CHO and CH_3COCH_3
(b) $CH_3CH_2OCH_2CH_3$ and $CH_3OCH_2CH_2CH_3$

23.(a) The equilibrium constant for $H_2(g) + I_2(g) \longrightarrow 2HI(g)$ is 50 at 300K.If pH_2 and pI_2 is 0.10 atm each and pHI is 0.90 atm , has equilibrium been reached? Explain. (2+2)
(b) Calculate the degree of ionisation of 0.05 M acetic acid ,if its p^{ka} is 4.74.How is the degree of ionisation affected if the solution is also 0.1M in hydrochloric acid

24. (i) Identify the aromatic system; a.  b.  **(1+2+2)**

Give reason for your answer.

(ii) Explain the mechanism of 'Friedel craft's alkylation of benzene'.
(iii) Effect the following conversion ;(a) Bromopropane to benzene
(b) 2-Methylpropene to Propan-2-one.

25. (a) Out of N_2^+ or N_2^{2-} which is more stable? **(1+1+1+1+1)**
(b)Which out of NH_3 and NF_3 has higher dipole moment and why?
(c) Explain the shape of XeO_2F_4
(d) Out of H_2O or H_2S which has more bond angle and why?
(e)Why free rotation about a Π bond is not possible?

26.(a) Out of BF_3 or BBr_3 which act as stronger Lewis acid and why? **(1+1+1+1+1)**
(b) Out of CCl_4 or $SiCl_4$ which is readily hydrolysed and why?
(c) Why is boric acid considered as a weak acid?
(d)Explain what happens when boric acid is heated?
(e) Explain structures of diborane and boric acid.

****

24. (i) Identify the aromatic system; a. b. (1+2+2)

Give reason for your answer.

(ii) Explain the mechanism of 'Friedel craft's alkylation of benzene'.
(iii) Effect the following conversion ;(a) Bromopropane to benzene
(b) 2-Methylpropene to Propan-2-one.

25. (a) Out of N_2^+ or N_2^{2-} which is more stable? (1+1+1+1+1)
(b)Which out of NH_3 and NF_3 has higher dipole moment and why?
(c) Explain the shape of XeO_2F_4
(d) Out of H_2O or H_2S which has more bond angle and why?
(e)Why free rotation about a Π bond is not possible?

26.(a) Out of BF_3 or BBr_3 which act as stronger Lewis acid and why? (1+1+1+1+1)
(b) Out of CCl_4 or $SiCl_4$ which is readily hydrolysed and why?
(c) Why is boric acid considered as a weak acid?
(d)Explain what happens when boric acid is heated?
(e) Explain structures of diborane and boric acid.

****

Sindhi High School, Hebbal.
Annual Examination 2015 – 16
Subject: Mathematics

Class: XI
Date: 05.02.2016

Marks: 100
Time: 3 hours

Instructions:
1. Questions 1 – 6, i.e. Section A, carry 1 mark each.
2. Questions 7 – 19, i.e. Section B, carry 4 marks each.
3. Questions 21 – 26, i.e. Section C, carry 6 marks each

SECTION A

1. If A = {1,2,3} and the relation R in set A is defined as {(1,2), (3,2)}, then is R a function ? Give reason.

2. Solve $2x^2 + 3 = 4x$.

3. Write the 3rd term of the sequence, $a_1 = -3, a_2 = 1$, and $a_n = \frac{a_{n-2} + a_{n-1}}{n}$.

4. In which octant does $(-1, 2, 3)$ lie ?

5. Find x so that the point $(6, 5, -3)$is at distance of 13 units from $(x, -7, 0)$

6. Find the mean deviation about median for the data: 2, 15, 9, 7.

SECTION B

7. If X and Y are two sets in sample space S such that $n(S) = 50, n(X) = 17, n(Y) = 23$, and $n(X \cup Y) = 38$ then find how many elements are there in (i)X only, (ii)Y only, and (iii)neither in X nor Y.

8. Write the domain and range of the function

$$f(x) = \begin{cases} -1, & x \leq 1 \\ x, & -1 < x < 1. \\ 1, & x \geq 1 \end{cases}$$

9. Prove that $\frac{\cos x}{1 - \sin x} = \tan\left(\frac{\pi}{4} + \frac{x}{2}\right)$.

10. Using PMI, prove that $1^2 + 2^2 + 3^2 + \cdots + n^2 = \frac{n(n+1)(2n+1)}{6}$, for all $n \in N$.

11. Write the polar form of $z = 25 - i\,25$.

12. How many numbers are there between 99 and 1000 that have (i) 7 in the units place, and. (ii) at least one of the digits as 7 ?

13. Find the value of r, if the coefficients of $(2r + 4)$th term and $(r - 2)$th term in the expansion of $(1 + x)^{18}$ are equal.

14. The sum of first three terms of a GP is $\frac{39}{10}$, and their product is 1. Find the three terms.

15. Find the equation of a straight line whose $y-$ interept is -3 and which is perpendicular to the line joining $(0,-5)$and $(-1,3)$.

16. Using section formula, show that the points A $(-2,3,5)$, B $(1,2,3)$and C $(7,0,-1)$ are collinear. Also find the ratio in which C divides the line segment AB .

17. If $f(x) = \begin{cases} \frac{3x}{|x|+2x}, & x \neq 0 \\ 0, & x = 0 \end{cases}$, then does $\lim_{x\to 0} f(x)$exist ?

18. (i) Write the component statements of the compound statement : "If 1024 bytes is a kilobyte then green plants undergo photo synthesis".
(ii) What is the truth value of the above compound statement. ?
(iii)Identify whether the following is an exclusive or inclusive 'or':
"February 2016 has 29 days or February 2016 has four Tuesdays".
(iv) Rewrite the following using the phrase 'necessary condition':
"If I live in Kempapura then i live in Bangalore".

19. Two days are selected from seven days of the week. Find the conditional probability that these two days contain two vowels, given that that the two days are consecutive days.

SECTION C

20. (i)Find the principal solutions of $\cos x = \frac{1}{2}$.
(ii)Find the general solutions of the equation:
$2(\cos x + \cos 2x) + \sin 2x(1 + 2\cos x) = 2\sin x$.

21. Find the maximum value of $z = 5x + 3y$, subject to the constraints :
$x \geq 0, \quad y \geq 0, \quad x - y \leq 1, \quad x + y \leq 8$ and $2x + y \geq 2$.

22. The vertices of a triangle are A$(-1,4)$, B$(-3,1)$and C$(3,4)$. (i) Find the equation of the side AB of this triangle. (ii)What is the length of the altitude from C to side AB. (iii)Find angle A.

23. Find the equation of the ellipse with eccentricity $\frac{3}{4}$, foci on $y-$ axis, centre at $(0,0)$ and passing through the point $(6,4)$.

24. (i) If $y = \frac{\sin x}{\log x}$, then show that $x(\log x)^2 \frac{dy}{dx} - x\cos x \log x + \sin x = 0$.
(ii) Find $\frac{dy}{dx}$ for $y = \log(\cot x^4)$.

25. (i) Find the coefficient of variation for the data:

Marks	10 – 20	20 – 30	30 – 40	40 – 50	50 – 60	60 – 70	70 – 80
f	2	2	5	4	3	3	1

(ii) Another data has $CV = 24$. Is it more consistent than the above data?

26. There are 5 white and 7 black balls in a bag. Six balls are drawn without replacement. Find the probability that (i) at least 4 white balls are drawn, (ii) at most 5 black balls are drawn.

SINDHI HIGH SCHOOL, HEBBAL
ANNUAL EXAMINATION 2015 - 2016
SUBJECT:- BIOLOGY

CLASS:- XI MARKS: 70
DATE:-10.02.2016 TIME: 3.30 HRS

General Instructions:

Paper consist of two parts Part I and Part II. Part I consist of sections ABCD & E carrying 60 marks. Part II consists of only OTBA carrying 10 marks.

1. All questions are compulsory.

2. The question paper consists of four sections A,B,C & D. Section –A contains 5 questions of I mark each, Section-B contains 5 questions of 2 marks of each, Section-C contains 12 questions of 3 marks each, Section –D contains 1 value based question of 4 marks and Section-E contains 2 questions of 5 marks each. A separate section of OTBA is also included of 10 marks (1 question of 2 marks,1 question of 3 marks and 1 question of 5 marks). ,

3. There is no overall choice. however, an internal choice has been provided in one question of 2 marks, in one question of 3 marks and all the questions of 5 marks. A student has to attempt any one of the alternatives in such questions. Draw labelled diagrams wherever necessary.

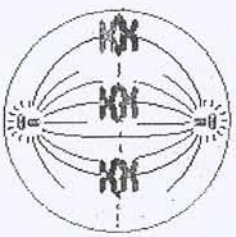
==========

SECTION – A

1. Draw a sporophyte of bryophyte.

2. Draw the basic structure of Palmictic acid , Glycogen

3. Mention any two characters of the given stage.



4. (i) State Blackman's law of limiting factors
   (ii) Define Vernalisation

5. What is limbic system ? Mention its function.

SECTION – B

6. Comment on various excretory organs in Animalia

   Or

   Draw labeled diagrams of any one protochordate and one Arthropoda.

7. Chromosomes are of various types. Justify .

8. Explain the enzyme action in detail.

9. Water absorbed by the roots moves into the plants in anti gravitationally. Describe the concept involved .

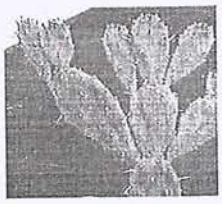
SECTION – C

10. $W_1 = W_o e^{rt}$. What type of growth is explained in this equation .

11. Differentiate between monocots and dicots based on - root, leaf, flower, VB, embryo and stem

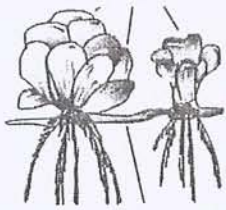
12. Give one example for the following characters
    (a) Muscular diaphragm separates thoracic and Abdominal cavity .
    (b) Air bladder provides buoyancy
    (c) Body is divided into proboscis collar and trunk
    (d) Body devoid of scales , bearing paired fins, migrates to fresh water for spawning
    (e) Head bears eyes , mouth with radula , tentacles
    (f) Diplobatic with comb plates

13. (a) Identify the modified part in a, b & c



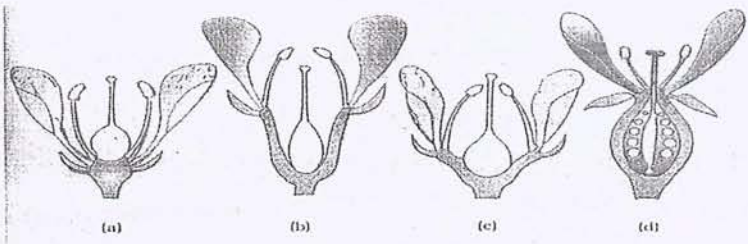
(a)

(b)

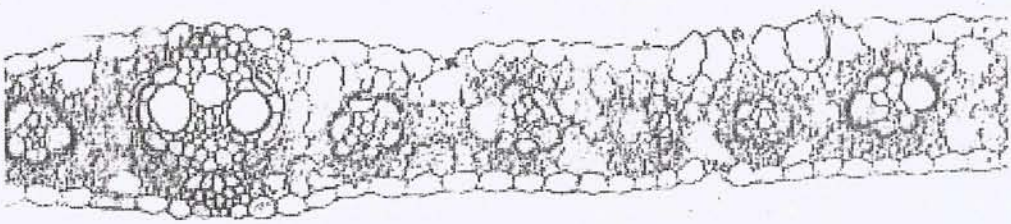


(c)

(b) Identify hypogynous condition among the following . Give example and one character for it .



14. Comment on
    (i) (a) lenticel (b) heart wood
    (ii) label bulliform cells and bundle sheath from the given picture



OR

Draw neat labeled diagrams of any three animal tissues.

15. What is a co factor ? Explain its significance in detail .

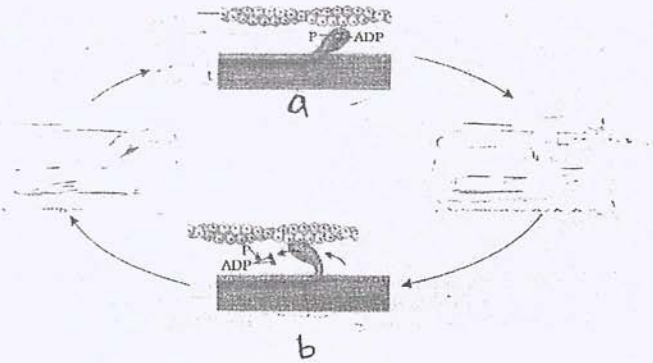
16. Classify plastids . Describe structure and location of each.

17. Differentiate prokaryotes and eukaryotes based on - shape , size , genetic material , cell envelope , cell components .

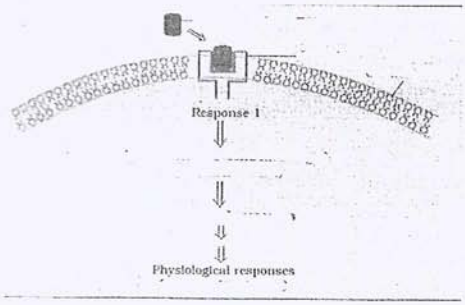
18. (a) Show the pathway of symplast and apoplast .
    (b) Describe the factors affecting photosynthesis

19.(i) Show reflex arc and flowchart of action of ear.

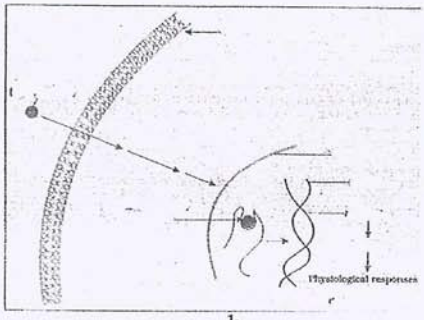
(ii)Observe (a) and (b) in the given picture and describe the steps which takes place between them in detail.



20. Observe the given picture a and b and give a detail note.



a



b

SECTION – D

21. A farmer is upset that the saplings he bought from a nursery are not able to grow with proper inter node , over all stunted growth and the fruits not ripened etc. After consulting nursery people he came to know that the lab technician has forgotten to add some chemicals to the nutritive medium. Having the knowledge of biology, how do you correct the problem and satisfy the farmer.

SECTION – E

22. (i)Define aestivation and show various types of it.

(ii) Comment on various types of inflorescence.

OR

(i) Fluid connective tissue and supportive connective tissue . Comment

(ii) Show the anatomical features of cockroach

23.(i) Respiration is an amphibolic pathway. Justify

(ii) Give ATP production (balance sheet) from one molecule of glucose in a skin cell.

OR

(i) How can you prove that C_4 plants are adaptive than C_3 plants .

(ii) Explain any experiment which proved the process of photosynthesis.

SINDHI HIGH SCHOOL, HEBBAL
ANNUAL EXAMINATION 10TH FEB 2016
Subject: COMPUTER SCIENCE

TIME: 3HRS CLASS: XI MAX MARKS: 70

Instructions:
All questions are compulsory.
Programming Language : C++

1	a)	Write full form for the following. ENIAC, EDVAC	(2)
	b)	What is the difference between compiler & interpreter ?	(1)
	c)	What do you mean by Utility Software? Give any 2 examples.	(2)
	d)	Explain first come first served (FCFS) scheduling.	(2)
	e)	Explain multiprocessing operating system.	(2)
	f)	What does booting of the system mean?	(1)
2	a)	What do you mean by robustness of a program? What is guard code?	(2)
	b)	Explain: i) Encapsulation	(1)
	c)	Name the header files to which the following functions belong. i) isalpha( ) ii) atoi( )	(1)
	d)	What is program maintenance . Describe any one type of program maintenance in brief.	(2)
	e)	What is a PS-2 port?	1
	f)	List any 2 differences between SRAM and DRAM.	1
3	a)	Convert the following binary number to decimal: i) 100011011.110001	(1)
	b)	Convert the following octal values to decimal i) 402.3	(1)
	c)	Convert the following decimal values to hexadecimal: i) 226	(1)
	d)	Convert the following decimal values to octal: i) 4429.625	(1)
	e)	Convert the following binary number to hexadecimal: i) 11110.01011	(1)
	f)	Represent the Number -22(8-bits) 1. Sign and magnitude 2. One's complement 3. Two's complement	(3)
4	a)	Given the following code fragment : int ch= 80 ; cout<<++(ch) <<"\n"<<++(ch) + 2 <<"\n" ; }What output above code fragment will produce ?	(1)
	b)	Name four datatype modifiers?	(1)
	c)	What is the result of following expression ? z = (t=14, t + 3); cout << '\n' << t ;	(1)
	d)	What is the effect of absence of 'break' in a switch statement? Can the case labels in a switch have identical values?	(2)
	e)	What is the output of the following code? #include<iostream.h> struct Time	(2)

```
{   int h, m ;
};

void show(Time C) ;
void main()
{    Time A = { 20, 10}, B ;
     B = A ;
                B.h  += 10 ;
                A.h -= 2 ;
     show(A) ;
     show(B) ;
}

        // definition

void show(Time C)
{    cout<< C.h<< " :  "<<C.m ;
}
```

f) Give the output. (2)

```
#include<iostream.h>
#include<conio.h>
void execute(int &b, int c=100)
{
        int temp = b+c;
        b+=temp;
 }
void main()
{
        int m= 90,n=10;
        execute(m);
        cout<<m<<" "<<n<<endl;
        execute(m,n);
        cout<<m<< " "<<n<<endl;
        getch();
}
```

a) Determine the output: (2)

```
#include<iostream.h>
void func(int num, int b=5)
{
auto int total=0;
static int sum=0;
for ( int i=num; i>0 ; i--)
total+=i;
sum+=total;
cout<<total<< " " <<sum<<b<<endl;
}
void main( )
{
int x=8;
for(int j=1; j<3; j++)
func(j);
}
```

b) Re-write the only incorrect statements with correct statements ; (min six errors)

```
structure Swimming  POOL                                    (3)
{       int memnumber ;
        char memname[20]  ;
        char memtype[] = "VIP" ;
}
void main()
```

```
{ Swimming POOL M1, M2 =(101,"Jacob") ;
 cout << "Member Number " ;
 cin >> memnumber.M1 ;
 cin >> M1.membername ;
 M2.memtype = "VVIP" ;
 M1 = M2 ;
 cout << "Member Number " << M2.memnumber ;
 cin << "Membername " << M2.memname ;
 cout << "Member Number " << M2::memtype ;
}
```

c) What are the outputs of the following two code fragments? Justify your answer. (2)

//version 1	//version 2

int f =1, i = 2;
while(++i<5)
f *= i;
cout<<f ;
	int f =1, i = 2;
	do{
	f * = i;
	}while(++i<5);
	cout<<f ;

d) Find the output of the following program. (2)

```
#include<conio.h>
#include<iostream.h>
void changecontent(int arr[],int count)
        {
                for(int c = 1;c<count;c++)
                        arr[c-1] += arr[c];
        }

void main()
{
        clrscr();
      int l;
        int a[] = {3,4,5}, b[]={10,20,30,40},c[]={900,1200};
        changecontent(a,3);
        changecontent(b,4);
        changecontent(c,2);
        for( l=0;l<3;l++)  cout<<a[l]<<'#';
        cout<<endl;
        for( l=0;l<4;l++)  cout<<b[l]<<'#';
        cout<<endl;

        getch();
}
```

e) 1

```
#include<stdlib.h>
#include<iostream.h>
void main( )
{
randomize();
int Score[] = {25,20,34,56, 72, 63}, Myscore;
Myscore = Score[2 + random(2)];
cout<<Myscore<<endl; }
```

(i) 25
(ii) 34
(iii) 20
(iv) None of the above

a) Write a complete C++ program that uses a function called Line() to draw a Simple line. The function Line() receives value of L,C and N respectively. Where the default value of L is 1 of int type and C is the Second Parameter in the argument list. Where
L = Number of Lines, C = Character to be printed, N = Number of Characters in line (3)

b) Write a program to input square matrix and interchange rows to column and column to rows. (3)

c) WAP to read a string and make a table displaying different types of characters in the following format. For example: 3

Input string: THE QUICK BROWN fox jumps over the LAZY LITTLE DOG

Output table:
Uppercase vowels : 6
Lowercase vowels : 7
Uppercase consonants : 15
Lowercase consonants : 13

d) Write a program to input a set of strings and reverse each string and display. (3)

e) Write a function to calculate the sum of series. (3)

$$x - \frac{x^2}{2!} + \frac{x^3}{3!} \ldots\ldots\ldots \frac{x^n}{n!}$$

f) Write a C++ program to check whether the given number is Armstrong or not. (3)

a) Differentiate between CISC and RISC. (2)
b) Explain characteristics of auto and register storage class specifiers. (2)
c) What is the use of cache memory (1)
d) What is EPROM? (1)
e) Suggest suitable device for the following: (1)
   1) High quality printing
   2) Economical printing of small quantities of data.

****