



DELHI PUBLIC SCHOOL
SAIL TOWNSHIP, RANCHI
ANNUAL EXAMINATION (2017-18)

Class:- XI
Time- 3 Hrs.

Subject:- English
F. M:- 80

General Instructions:-

1. *This paper is divided into 3 sections: A,B, and C. All the sections are compulsory.*
2. *Separate instructions are given with each section and question, wherever necessary. Read the instructions very carefully and follow them faithfully.*
3. *Do not exceed the prescribed word limit while answering the questions.*

(Section -A Reading)

[20]

1. Read the passage carefully:-

[8]

The life of the hill people in India in the "romantic" milieu of Himalayas is much tougher than we imagine from the cosy comfort of our urban drawing-rooms. How many of us are really concerned about the people who live with the fear of landslides everyday of their lives?

During the rainy season the Himalayan region is highly prone to landslides and is seismologically volatile. Landslides due to geological movements cannot be totally eliminated but the disaster can be mitigated if we are slightly more cautious. Geologists say that the terrain is becoming increasingly treacherous, as there is very little topsoil or green ever to bind it. Even the slightest downpour exposes the boulders that are ready to roll downhill. Sometimes such an avalanche of stones and boulders is triggered by the displacement of a single stone from its position. Large scale deforestation and inappropriate cropping patterns are the two imminent causes behind the aggravated depletion of the precious topsoil.

Cultivation of potatoes and peas on the steep slopes in the hilly terrain of the central Himalayas causes loss of huge quantity of fertile soil each year. Such lands are rain-fed and the terraces are poorly built with unprotected risers and shoulder bunds. Local communities are creating more and more terraced agricultural fields to grow cash crops like paddy which require standing water. Seepage of water into the rocky surface of the mountains could in the long run break the interlocking system which binds the mountains.

It is vital at this stage to educate the cultivators on partial levelling and contour cultivation to conserve both soil and moisture. There is an urgent need for implementation of rational watershed management programmes with extension agencies for agricultural development of ensure proper and timely supply of critical inputs to farmers.

However, it goes without saying that the maximum responsibility for the repeated landslide disasters falls on the appalling administrative inaction towards curbing deforestation. Policies do exist on paper regarding restrictions on felling and planned replanting of saplings. But the truth is that forest contractors and timber-mafia work hand-in-hand in flouting every law and causing widespread loss of green cover. Very little of this timber is meant for the consumption of the local population. A large proportion of this wood furnishes the living rooms of the complacent tourists from the cities.

Traditionally, houses in the upper reaches of the Himalayas are made of mud and timber. Wood bends in the event of geological stress but does not collapse. The concrete house of today act like weight-traps when landslips occur.

Where do the solutions lie? Definitely, small efforts like encouraging more traditional crops and cropping pattern; using wire meshes to bind the exposed hillsides, which eventually will also help small vegetation to grow on it, seem to be some of the tangible and achievable solutions. But when shall our policy makers think beyond hurried helicopter visits?

- (a) On the basis of your understanding of the above passage make notes on it, using headings and subheadings. Use recognisable abbreviations (wherever necessary-minimum four) and a format you consider suitable. Also supply an appropriate title to it. [5]
- (b) Write a summary of the passage in about 80 words. [3]

Q.2 Read the following passage carefully: [12]

1. The process of ageing starts with conception in the mother's womb. When we are young, we don't recognize that there will come a time when our limbs will become weak, our eyesight less keen and our body unable to function as smoothly as before. The state, the society and family owe a responsibility towards senior citizens.
2. Unfortunately, of late we have not been able to recognise the concept of respecting, caring and helping older generations in a systematic way as some of the countries in the West have done. This is not to suggest that our culture and history do not recognize this phase of life. There have been many practices of caring and helping old people in our system. But, with the dismantling of the joint family system the problem has assumed newer and complicated proportions. Although we have started recognising the needs of the young when it comes to the old, we have blissfully chosen to ignore them and have let them to feed for themselves.
3. Of all senior citizens of the world one out of ten is an Indian. The population of old people in India is the 4th highest in the world. By official estimates there are over 77 million old people in the country now. There are some schemes with the Minister of Social Justice and Empowerment. There are provisions of financial assistance for different welfare schemes.
4. There are old-age homes, residential units for lower income groups in particular districts where there is a part time medical officer to attend to the inmates. Then there are day care centres and mobile medicare services besides other NGOs (Non-Government Organisations).
5. Old -age homes in the country are not only insufficient but also ill - equipped to cater to old people. This should be the responsibility of the state since it needs close and regular monitoring. The social welfare department in the government have very little to boast when it comes to caring for older generations.
6. "Sarkari" officials are not only apathetic to the welfare of old people but also are not imaginative. But once the need for helping senior citizens is recognised not only by the society at large but also by the government, and certain concessions are sanctioned for them, there may be some headway in this direction.
7. Society, too, has an important role to play. It must bring by respecting the aged and placing them before anyone else's interest. In the West, if an old person is climbing down the stairs, he or she is helped. It is this kind of mindset that is the need of the hour. Offering seats to the old, helping them cross the roads, assisting them carry their bags, fetching them water, etc., are some features, which increase acceptability of old people.

8. In the family , senior citizens deserve a better deal. If they are thrown out of the family the state cannot be blamed. They have given everything to their families and have the right to be recognised as important members. Sending old parents to deposit electricity bills, asking them to fetch children from schools and to guard the house while the rest of the family is away are some of the many tasks which are thrust upon them. These become nothing short of enslaving the weakest class of people.

2.1 On the basis of your understanding of the above passage answer each of the questions given below with the help of options that follow: [1x6=6]

- (i) The process of ageing is apparent
(a) to the children (b) in youth (c) in middle age (d) as one becomes old
- (ii) The problem of looking after senior citizens has assumed serious proportions because.....
(a) the number of old persons has increased
(b) joint family system has collapsed
(c) the needs of the young have been identified
(d) interactions with them are not possible for the busy bread-earners.
- (iii) The old age homes in India fail to cater to old people because
(a) people do not have to stay there (b) they are considered old age orphanages
(c) they are insufficient and ill-equipped (d) they feel emotionally isolated
- (iv) The 'sarkari' officials fail to render help to the senior citizens because
(a) they are apathetic and unimaginative (b) they place money before service
(c) they fail to recognize the needs of the old people (d) they fail to establish any bond
- (v) The family is responsible for the neglect of its elders because
(a) they recognise them as important members
(b) they listen to them and consult them
(c) constraints of family leave little time
(d) they either force them to do menial tasks or throw them out
- (vi) The word 'concept' in para 2 means
(a) too much pride (b) idea/principle (c) consider important (d) understanding

2.2 Answer the following questions briefly: [1x4=4]

- (a) Mention any two bodily changes which come with the old age.
(b) What is the general attitude of the people in our country towards the senior citizens?
(c) What is the plight of old homes in India?
(d) What should the society do to improve the condition of senior citizens?
(e) Find words from the passage which mean the same as the following: [1x2=2]
(i) separating in parts (para 2)
(ii) showing no interest (para 6)

(Section-B Writing & Grammar) [30]

Q.3 You are Preet/Preeti of B - 156 Vrindavan Colony , Dwarka. You are planning to go abroad and want to sell few pieces of furniture of your house. Draft a suitable advertisement for the classified columns of any National Daily giving all the relevant details. (Word limit 50) [4]

Q.4 You are Sumit/Smita, a student of class XII and resident of 12, Commissioner Lane, New Delhi, You want to take up a course in choreography, Write a letter to the National Institute of Choreography. Mumbai, seeking information about the course, admission procedure, eligibility criteria and other necessary details. (Word limit 120–150) [6]

Q.5 Media has a strong hold on society. Write a speech in 150-200 words on: “How Media Influences Public Opinion” to be delivered in the Morning Assembly. [10]

Q.6 The following passage has not been edited. There is one error in each line. Write the incorrect word and the correction against the correct question number. [1/2x6=3]

| | Error | Correction |
|---|-----------|------------|
| Although their is no direct evidence that | (a) ..... | ..... |
| Salt is a cause of highly blood pressure | (b) ..... | ..... |
| or hypertension , there were studies which indicate | (c) ..... | ..... |
| that reducing salt intake lower | (d) ..... | ..... |
| blood pressure. Some scientist are also | (e) ..... | ..... |
| concern that excessive use of salt may | (f) ..... | ..... |
| cause asthma and kidney problems. | | |

Q.7 In the following passage one word has been omitted in each line. Write the missing word along with the word that comes before and the word that comes after it, and underline the answer supplied by you. [1/2x6=3]

| | Before | Missing | After |
|--|-----------|---------|-------|
| The need for blood can stem many reasons. | (a) ..... | ..... | ..... |
| Blood maybe needed to replace what lost or to | (b) ..... | ..... | ..... |
| build up resistance advance. One or two litres | (c) ..... | ..... | ..... |
| of new blood transfusion through veins may mean | (d) ..... | ..... | ..... |
| a new life to a patient. The idea blood transfusion is | (e) ..... | ..... | ..... |
| not new. In 1654 , Italian doctor named Francesco | (f) ..... | ..... | ..... |
| Folli was the first one to introduce this treatment. | | | |

Q.8 Arrange the words to form meaningful sentences. [1x4=4]

- (a) of/ Europe / ancient / people / caves / wrestling / have been / drawings / in / found/ in
- (b) Andaman / the / Nicobar / and / attracted / of / the / attention / many / powers / colonial / Islands
- (c) helps / internet / to / us/ world / of / the / access / any / the / information / part / from
- (d) because / Delhi / earthquakes / of / is / its / prone / location / to

Section- C Literature and Long Reading Text [30]

Q.9 Read the extract given below and answer the questions that follow: [3]

I do not understand this child
 Though we have lived together now
 In the same house for years. I know
 nothing of him , so try to build
 Up a relationship from how
 He was when small.

- (i) Who is the speaker here? [1]
(ii) What does the speaker reveal in the above extract? [1]
(iii) What is the speaker's intention here? [1]

Q10. Answer the following question in about 30-40 words:- [3x3=9]

(a) " You know what he's like , sir" says Taplow.

What leads him to say so? What light does this throw on the man talked about?

(b) How did the sparrows express their sorrow when the author's grandmother died?

(c) How does Mrs. Pearson refute Doris's argument about working hard?

Q11. A doctor must remain committed to saving life. Altruism and work ethics should be given utmost importance. Do you think we still come across doctors committed to saving the life of their patients.

Comment and state with examples in context of the lesson "Brith" highlighting the qualities of a true medical professional. (Word limit 120-150) [6]

Q.12 Why did Mr. Otis request Lord Canterville to accept the jewels? What was his reply?

[Word limit 120-150]

[6]

Q.13 Briefly describe the funeral of Sir Simon Canterville. (Word limit 120-150)

[6]



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ANNUAL EXAMINATION (2017-18)

Class:- XI
Time- 3 Hrs.

Subject:- Mathematics
F. M:- 100

General Instructions:-

- (i) All questions are compulsory.
- (ii) This question paper contains 29 questions.
- (iii) Question 1-4 in section A are very short questions of 1 mark each.
- (iv) Question 5-12 in section B are short questions of carrying 2 marks each.
- (v) Questions 13-23 in section C are long answer type question of 4 marks each.
- (vi) Questions 24-29 in section D are long answer type question of 4 marks each.

Section-A

- Q.1 List all the proper subsets of the set $\{-1, 0, 1\}$
- Q.2 Find limit $x \rightarrow \pi$, $\left(\frac{\sin x}{x-\pi}\right)$
- Q.3 Write negation of the statement " All students study mathematics at the elementary level".
- Q.4 Rewrite in the form "p if and only if q"
"If a quadrilateral is equiangular, then it is a rectangle and if a quadrilateral it is a rectangle, then it is equiangular .

Section-B

- Q.5 Show that for any sets X and Y, $X \cap (X \cup Y) = X$
- Q.6 Solve the inequality $-12 < 4 - \frac{3x}{-5} \leq 2$
- Q.7 If $y = \frac{x}{\cos^n x}$ then find $\frac{dy}{dx}$.
- Q.8 Prove that $n C_r + n C_{r-1} = n+1 C_r$.
- Q.9 If A is the AM and G is GM between two numbers then show that $A \geq G$.
- Q.10 Find the equation of the circle passing through (0,0) and making intercepts a and b on the coordinate axes.
- Q.11 Find the coordinates of the foci, vertices, the eccentricity and the length of the latus rectum of the hyperbola $3y^2 - x^2 = 27$.
- Q.12 Find the mean deviation about the mean of the first n natural numbers when n is an even number.

Section-C

- Q.13. Prove that $\cos \frac{2\pi}{15} \times \cos \frac{4\pi}{15} \times \cos \frac{8\pi}{15} \times \cos \frac{16\pi}{15} = \frac{1}{16}$
OR

If $\tan A \tan B = \sqrt{\frac{a-b}{a+b}}$, prove that $(a-b \cos 2A) (a - b \cos 2B) = a^2 - b^2$

Q.14 Solve the following system of inequation graphically on the same scale

$$x+2y \leq 10$$

$$x+2y \geq 1$$

$$x-y \leq 0$$

$$x \geq 0$$

$$y \geq 0$$

Q.15 Find the value of $\sqrt{1+i}$

OR

If α and β are two different complex numbers with $|\beta| = 1$ then find $\left| \frac{\beta-\alpha}{1-\bar{\alpha}\beta} \right|$

Q.16 In any ΔABC , if $C = 60^\circ$ then prove that

$$\frac{1}{a+c} + \frac{1}{b+c} = \frac{3}{a+b+c}$$

Q.17 The vertices of a triangle are A(5,4,6) , B (1, -1,3) and C (4,3,2). The internal bisector of ΔABC meets BC in D. Find AD.

Q.18 In an examination a question paper consists of 12 questions divided into two parts i.e. part I and part II , containing 5 and 7 questions respectively A student is required to attempt 8 questions in all , selecting at least 3 from each part. In how many ways can he select the questions?

Q.19 If the p^{th} , q^{th} , r^{th} and s^{th} term of an AP are also in GP then prove that p-q, q-r, r-s are in GP.

Q.20 Find the distance of the point (2,5) from the line $3x+y+4=0$ measured parallel to the line $3x-4y+8=0$

OR

Prove that the product of the length of the perpendiculars drawn from the points $(\pm \sqrt{a^2 - b^2}, 0)$ to the line $\frac{x}{a} \cos \theta + \frac{y}{b} \sin \theta = 1$ is b^2 .

Q.21. Show that the area of triangle formed by lines $y = m_1x + c_1$, $y = m_2x + c_2$ and

$$x = 0 \text{ is } \frac{(c_1 - c_2)^2}{2|m_1 - m_2|} \text{ square units.}$$

Q.22 Find the standard deviation of the following data by step deviation method only

| Classes | 0-10 | 10-20 | 20-30 | 30-40 | 40-50 |
|-----------|------|-------|-------|-------|-------|
| Frequency | 5 | 8 | 15 | 16 | 6 |

Q.23 The mean and standard deviation of 100 observations were calculated as 40 and 5.1 respectively by a student who took by mistake 50 instead of 40 as one observation. What are the correct mean and correct standard deviation.

Section-D

Q.24. (a) Let f be a subset of $Z \times Z$ defined by $f = \{ (ab, a+b) , a, b \in Z \}$ Is f a function from Z into Z. Justify your answer.

(b) Find the domain and the range of the function $f(x) = \sqrt{9 - x^2}$.

Q.25 Prove that

(a) Evaluate $\lim_{x \rightarrow \frac{\pi}{6}} \left\{ \frac{\sqrt{3} \sin x - \cos x}{x - \frac{\pi}{6}} \right\}$

(b) Differentiate $y = \frac{\sin x}{x}$ from the first principle only.

OR

(a) If $y = \frac{x \sin x}{\sin x + \cos x}$ then find $\frac{dy}{dx}$.

(b) Evaluate the limit

$\lim_{x \rightarrow y} \frac{\tan x - \tan y}{x - y}$ (do not use L- Hospital's rule)

Q.26 If the sum of m terms of an AP is equal to the sum of either the next n terms or next p terms then prove that $(m+n) \left(\frac{1}{m} - \frac{1}{p} \right) = (m+p) \left(\frac{1}{m} - \frac{1}{n} \right)$

OR

150 workers were engaged to finish a job in a certain number of days. 4 workers dropped out on second day. 4 more workers dropped third day and so on. It took 8 more days to finish the work. Find the number of days in which the work was completed.

Q.27 If a_1, a_2, a_3, a_4 be the coefficient of four consecutive terms in the expansion of $(1+x)^n$ then prove that

$$\frac{a_1}{a_1+a_2} + \frac{a_3}{a_3+a_4} = \frac{2a_2}{a_2+a_3}$$

OR

If P denote the sum of odd terms and Q the sum of even terms in expansion of $(a+x)^n$ then prove that $P^2 - Q^2 = (a^2 - x^2)^n$ and $4PQ = (a+x)^{2n} - (a-x)^{2n}$

Q.28 (a) Find the equation of the parabola which has its axis along x -axis and which passes through the points $(3,2)$ and $(-2, -1)$.

(b) A rod AB of length 15 cm rests in between two coordinate axes in such a way that the end A lies on x -axis and the end B lies on y -axis. A point $P(x,y)$ is taken on the rod in such a way that

$AP = 6\text{cm}$. Show that the locus of p is an ellipse whose equation is $\frac{x^2}{81} + \frac{y^2}{36} = 1$

OR

(a) Prove that the equation of the parabola whose focus is $(1,1)$ and tangent at the vertex is $x+y=1$ is $x^2 + y^2 - 2xy - 4x - 4y + 4 = 0$.

(b) An arch is in the shape of a semi ellipse. It is 8 m wide and 2 m high at the centre. Find the height of the arch at a point 1.5 m from one end.

Q.29 A box contains 6 red, 4 white and 5 black balls. A person draws 4 balls from the box at random. Find the probability that among the balls drawn there is at least one ball of each colour.



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ANNUAL EXAMINATION (2017-18)

Class:- XI
Time- 3 Hrs.

Subject:- Physics
F. M:- 70

General Instructions:-

- (i) All questions are compulsory. There is no overall choice. However there is one choice in each of Section B and Section C. Section E has choices in all the three questions.
- (ii) Section A has 5 questions, each of 1 mark.
- (iii) Section B has 5 questions, each of 2 marks.
- (iv) Section C has 12 questions, each of 3 marks.
- (v) Section D has one value-based question of 4 marks.
- (v) Section E has three questions, each of 5 marks.

Section- A

- Q.1 Write down the equation of the First law of thermodynamics when it is applied to an isochoric process. [1]
- Q.2 State Hooke's Law. [1]
- Q.3 If the speed of a motor car is doubled, how much more distance will it cover before stopping, under the same retarding force? [1]
- Q.4 Draw the stress-strain graph pertaining to a brittle body. [1]
- Q.5 If the coefficient of friction of a rough inclined plane is $\sqrt{3}$, what is the angle of repose? [1]

Section- B

- Q.6 A body of mass 1 kg, at rest, explodes into three fragments of masses in the ratio 1:1:3. The two pieces of equal masses fly in mutually perpendicular directions with a speed of 30 m/s each. What is the velocity of the heavier fragment? [2]
- Q.7 Two particles of masses 2 kg and 1 kg are moving along the same straight line with speeds 2m/s and 5m/s respectively. What is the speed of the centre of mass of the system if both the particles are moving (i) in the same direction and (ii) in opposite direction? [2]
- Q.8 Derive an expression to show how the acceleration due to gravity (g) varies with the altitude (h) of place. Represent the result graphically. [2]
- Q.9 Draw a labelled block diagram of a heat engine. Write the expression for its efficiency. [2]

OR

Using $P = \frac{1}{3} \rho \bar{v}^2$ [where the notations carry their usual meaning], prove (i) Boyle's law
(ii) kinetic interpretation of temperature.

- Q.10 Prove that the motion of a simple pendulum, for small oscillations, is simple harmonic in nature. [2]

Section- C

Q.11 The energy of a system as a function of time t is given as $E(t) = A^2 e^{-\alpha t}$ where $\alpha = 0.2 \text{ s}^{-1}$.

The measurement of A has an error of 1.25 % and the error in the measurement of time is 1.5 %.
Find the percentage error in the value of $E(t)$ at $t=5$ sec. [3]

Q.12 With reference to projectiles, derive expressions for (i) time of flight (T) (ii) maximum height attained (H_{max}) and (iii) horizontal range (R). [3]

Q.13 What are beats? Derive an expression for the beat frequency. [3]

Q.14 Using the method of dimensions, derive Stoke's formula. [3]

Q.15 A body of mass 0.5 kg travels in a straight line with velocity $v=ax^{3/2}$ where $a = 5\text{m}^{-1/2} \text{ s}^{-1}$.
What is the work done by the net force during its displacement from $x=0$ to $x= 2$ m? [3]

OR

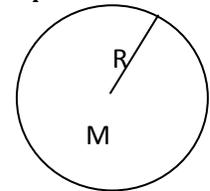
Derive an expression for the P.E. stored in a spring of spring constant k when it is stretched by a length ' A '. Show graphically the variation of this P.E. with the distance from its mean position on either side.

Q.16 State and prove Bernoulli's theorem. [3]

Q.17 Derive an expression for the work done in an isothermal expansion of a gas. [3]

Q.18 What do you mean by escape velocity? Derive an expression for escape velocity. [3]

Q.19 From a uniform circular disc of mass M and radius R , a circular disc of radius ($r=\frac{R}{4}$) is removed as shown. Find the position of the centre of mass of the remaining portion of the disc. [3]



Q.20. State the triangle law of vector addition. Deduce an expression for the magnitude and direction of the resultant of two vectors, using this law. [3]

Q.21. With reference to satellites; derive expressions for their (a) orbital velocity (b) time period (c) height above the ground. [3]

Q.22 Find the component of a vector $\vec{A} = 3 \hat{i} + 2 \hat{j}$ along the direction of $(\hat{i} + \hat{j})$ and $(\hat{i} - \hat{j})$. [3]

Section- D

Q.23 Ravi went to the market along with his grandfather and purchased a weighing machine. They came back to their society complex and entered the lift. Ravi placed the weighing machine on the floor of the lift and asked his grandfather to stand on it. The reading was 50 kg. When the lift started moving up, the reading increased to 75 kg and when the lift stopped at the 10th floor, the reading dropped to 50 kg. His grandfather got annoyed, scolded him and insisted that the machine was faulty. Ravi calmly explained why the machine was not faulty.

(i) What are the values exhibited by Ravi?

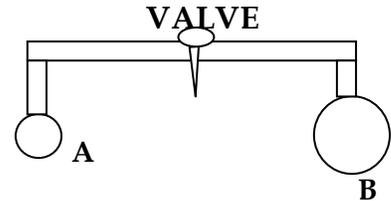
(ii) Give a mathematical formula which supports Ravi's explanation. [4]

Section- E

- Q.24 Define terminal velocity. Deduce an expression for terminal velocity of a spherical body falling through a viscous medium. What will happen if the density of the surrounding medium is greater than the density of the body? [5]

OR

Derive an expression for the excess pressure in an air bubble in water. Consider two bubbles of different sizes formed at the two ends of a tube as shown in the figure. When the valve is opened, which of the two bubbles will grow at the cost of the other? Why?



- Q.25 What is an elastic collision? Discuss elastic collision between two bodies in one dimension. Find the final velocities of the two bodies after collision. [5]

OR

State work-energy theorem. Using calculus, prove the theorem. The kinetic energy of a body decreases by 19%. What is the percentage decrease in its linear momentum?

- Q.26. What are stationary waves? Discuss analytically how stationary waves are formed in stretched strings. Deduce expressions for the frequencies in the various modes of vibrations. [5]

OR

The sirens of two fire engines have a frequency of 600 Hz each. A man hears the sirens from the two engines, one approaching him with a speed of 36 km/hr and the other going away from him at 54 km/hr. What is the difference in frequencies of the two sirens heard by the man? Take the speed of sound to be 340 ms^{-1} .

Differentiate between progressive and stationary waves. (2 points)

.....X.....



DELHI PUBLIC SCHOOL
SAIL TOWNSHIP, RANCHI
ANNUAL EXAMINATION (2017-18)

Class:- XI
Time- 3 Hrs.

Subject:- Chemistry
F. M:- 70

General Instructions:-

- All questions are compulsory.
- Question no. 1 to 5 are very short answer questions and carry 1 mark each.
- Question no. 6-10 are short answer questions and carry 2 marks each.
- Question no. 11 to 22 are also short answer questions and carry 3 marks each.
- Question no.- 23 is a value based question and carry 4 marks.
- Question no. 24 to 26 are long answer questions and carry 5 marks each.
- Use Log table if necessary.

- Q.1 Why is the law of Gay Lussac's not obeyed if any reactant or product is not a gas? [1]
- Q.2 How many moles of iron can be made from Fe₂O₃ by the use of 16 moles of carbon monoxide in the following reaction?
$$\text{Fe}_2\text{O}_3 + 3 \text{CO} \longrightarrow 2 \text{Fe} + 3\text{CO}_2$$
 [1]
- Q.3 What are the oxidation number of each iodine in KI₃? [1]
- Q.4 Find the value of n in
$$\text{MnO}_4^- + 8 \text{H}^+ + ne^- \longrightarrow \text{Mn}^{2+} + 4 \text{H}_2\text{O}$$
 [1]
- Q.5 Write IUPAC name of
CH₃ - CH₂ - CH = CH - CH₂COOH [1]
- Q.6 (i) In the combustion of methane why is methane regarded as limiting reagent? [2]
(ii) When is the law of definite proportion is not obeyed? [2]
- Q.7 (i) How many electrons can be filled in all the orbitals with n+1 = 5?
(ii) What is the angular momentum of electron in 5th orbit according to Bohr's theory? [2]

OR

- (i) Why did Heisenberg replace the concept of definite orbits by the concept of probability?
(ii) Out of the electron and proton which will have a higher velocity to produce matter waves of same wavelength? Explain it. [2]
- Q.8 (a) Arrange the following in order of increasing reducing property.
NaH, MgH₂ and H₂O
(b) Complete the following reaction.
$$\text{MnO}_4^- (\text{aq}) + \text{H}_2\text{O}_2 (\text{aq}) \longrightarrow$$
- Q.9 An alkene 'A' on ozonolysis gives a mixture of ethanal and pentan-3-one. Write the structure and IUPAC name of 'A'. [2]
- Q.10 (i) pK_a value of acids A,B,C,D are 1.5, 3.5, 2.0 and 5.0. Which of them is strongest acid?

(ii) Glycine is an α -amino acid exist in the form of Zwitter ion as $^+ \text{NH}_3\text{CH}_2\text{COO}^-$, write the formula of its (a) conjugate acid and (b) conjugate base. [2]

Q.11 The electronic energy in H-atom is given by $E_n = (-2.18 \times 10^{-18})/n^2 \text{ J atom}^{-1}$. Calculate the energy required to remove an electron completely from $n=2$ orbit. What is the longest wavelength of light that can be used to cause this transition? [3]

Q.12 (a) Why is fluorine more reactive than chlorine?
(b) How would you explain the fact that first ionization enthalpy of sodium is lower than that of magnesium but its second ionisation enthalpy is higher than that of magnesium? [3]

Q.13 State and explain Dalton's law of partial pressure. Mention the application of this law.

OR

What is ideal gas equation? How it can be derived? Also express it in term of density of gas. [3]

Q.14 Calculate the total pressure in a 10 litre cylinder which contains 0.4 gm of helium 1.6 gm of Dioxygen and 1.4 gm of dinitrogen at 27°C . Also calculate the partial pressure of helium gas in the cylinder. Assume ideal behaviour of gases. [$R = 0.082 \text{ lit atm K}^{-1} \text{ mol}^{-1}$] [3]

Q.15 (a) Explain why alkali metals can not be obtained by chemical reduction method?
(b) Potassium carbonate can not be obtained by Solvay's process, why?
(c) Compare the alkali metals and alkaline earth metals with respect to solubility of hydroxide. [3]

Q.16 Define Free Energy and derive Gibb's Helmholtz equation. [3]

Q.17 At 300K the standard enthalpies of formation of $\text{C}_6\text{H}_5\text{COOH (s)}$, $\text{CO}_2 \text{ (g)}$ and $\text{H}_2\text{O (l)}$ are -408 , -393 and -286 KJ/mol respectively. Calculate the heat of combustion of benzoic acid ($\text{C}_6\text{H}_5\text{COOH}$) at (i) constant pressure and at (ii) constant volume.
($R = 8.314 \text{ J/K/mol}$)

Q.18 (a) Why is boric acid considered a weak acid?
(b) Write the balanced equation for
 $\text{Al} + \text{NaOH} + \text{H}_2\text{O} \longrightarrow$
(c) Why CCl_4 is resistant to hydrolysis but SiCl_4 is easily hydrolysed? [3]

Q.19 (i) Draw resonance structure of
 $\text{CH}_3\text{CH} = \text{CH} - \text{CHO}$
(ii) Explain Homolytic and heterolytic bond fission with example. [3]

Q.20 (i) What effect does branching of an alkane chain has on its boiling point?
(ii) Why do the C-C bonds rather than C-H bonds break during cracking of alkane?
(iii)  = CH_2 is not aromatic explain. [3]

Q.21. Balance the following redox reaction by ion electron method.

(a) $\text{N}_2\text{H}_4 \text{ (l)} + \text{ClO}_3^- \text{ (aq)} \longrightarrow \text{NO} + \text{Cl}^-$ (Basic medium)

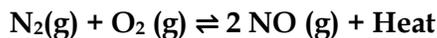
(b) $\text{MnO}_2 + \text{C}_2\text{O}_4^{2-} \longrightarrow \text{Mn}^{2+} + \text{CO}_2$ (acid medium)

Q.22 (i) Define Oxidation and Reduction process in terms of oxidation No. [3]
(ii) The Mn^{3+} ion is unstable in solution and undergoes disproportionation reaction to give Mn^{2+} , MnO_2 and H^+ ion. Write balanced ionic equation for this reaction. [3]

Q.23 The major cause of environmental pollution is the rapid industrialisation particularly the development of those industries which either produce or use toxic chemicals. One way to protect our environment from chemical effluents and wastes is to use 'Green Chemistry.'
Answer the following on the basis of above paragraphs.

- (i) What do you mean by Green Chemistry?
(ii) Give the basic aim of Green Chemistry.
(iii) How can you apply Green Chemistry
(a) to avoid use of halogenated solvents in dry cleaning and that of chlorine in bleaching.
(b) to reduce consumption of petrol and diesel. [4]

Q.24 (a) State Le-chatelier's principle. Using this principle predict the effect of decreasing temperature and increasing the pressure in the following equilibrium.



- (b) At 700 K, equilibrium constant for the reaction $\text{H}_2(\text{g}) + \text{I}_2(\text{g}) \rightleftharpoons 2\text{HI}(\text{g})$ is 54.8. If 0.5 mol/L of HI (g) is present at equilibrium at 700 K. What are the concentration of $\text{H}_2(\text{g})$ and $\text{I}_2(\text{g})$ assuming that we initially started with HI (g) and allowed to reach equilibrium at 700 K? [5]

OR

- (a) What is common ion effect? How does common ion affect the solubility of electrolyte?
(b) The solubility of $\text{Sr}(\text{OH})_2$ at 298 K is 19.23 gm/L of solution. Calculate the concentration of strontium and hydroxyl ion and the pH of the solution (Atomic mass of Sr = 87.6)

- Q.25 (i) What type of hybridization and shape involved in BrF_5 ?
(ii) Arrange the following in decreasing order of bond angle.



- (iii) Write the molecular orbital configuration of a diatomic molecule having bond order equal to three.
(iv) Draw the resonating structure of CO_2 .
(v) Why PCl_5 dissociates to give PCl_3 and Cl_2 ? [5]

OR

- (i) Why NF_3 is pyramidal but BF_3 is triangular planar?
(ii) Predict which out of the following have higher dipole moment and why?



- (iii) Out of O_2^+ and O_2^- which one is more stable on the basis of bond order calculation?
(iv) Why H_2O is liquid while H_2S is gas?
(v) Draw the resonance structure of Nitrate ion.

Q.26 (i) Explain the following with example

- (a) Friedel craft acylation.
(b) Wurtz reaction.

(ii) How will you convert the following :

- (a) Benzene to p-nitrobromo benzene

(b) Benzoic acid to Benzene

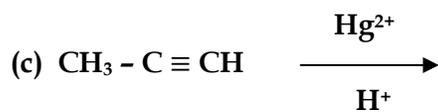
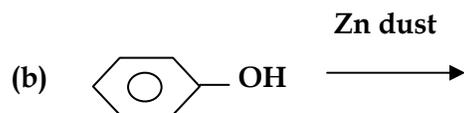
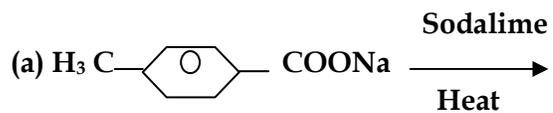
(c) 1-Bromopropane to 2 - Bromopropane

OR

(i) Arrange Benzene , n-hexane and Ethyne in decreasing order of acidic behavior with reason.

(ii) Suggest a route for the preparation of nitrobenzene starting from acetylene.

(iii) Complete the following reaction.





DELHI PUBLIC SCHOOL
SAIL TOWNSHIP, RANCHI
ANNUAL EXAMINATION (2017-18)

Class:- XI
Time- 3 Hrs.

Subject:- Biology
F. M:- 70

General Instructions:-

1. All questions are compulsory.
2. This question paper consists of five sections A, B, C, D and E. Section A consists of 5 questions of one mark each. Section B consists of 5 questions of two marks each. Section C consists of 12 questions of three marks each. Section D consist of one value based question of four marks. Section E consists of 3 questions of five marks each.
3. There is no overall choice in the question paper, however an internal choice is provided in one question of two marks, one question of three marks and all 3 questions of five marks.
4. Wherever necessary a labelled diagram should be neatly drawn.

SECTION A

1. Give the scientific name for wheat and also mention the phylum to which it belong.
2. Name two unicellular algae which are used as food supplement by space travellers.
3. What do you understand by the term "flux".
4. What is RuBisCo ? Explain its role in C₃ photosynthesis.
5. What is corpus callosum.

SECTION B

6. Mention the three steps involved in the sexual cycle of fungi. What do you understand by the term dikaryophase?
7. Mention four charecteristics features of Aves.
8. Name and describe the two types of glycocalyx found in bacteria.
9. Differentiate between the apoplast and symplast pathways of movement of water in plants.
10. Explain the role of potassium and calcium in plant life.

OR

What do you mean by:-

- (a) Chlorosis (b) Necrosis

SECTION C

11. Give the answer for following:
 - (a) What is the function of frond present in brown algae?
 - (b) Name the constituents of cell wall in green algae.
 - (c) Name the major pigment and stored food present in red algae.
12. With the help of diagram explain coelomate, pseudocoelomate and acoelomate.
13. Describe the three kinds of flowers based on the position of floral parts on the thalamus.

P.T.O

14. Distinguish between the following:

- (a) Exarch and endarch condition of protoxylem
- (b) Open and closed vascular bundles
- (c) Apical meristem and lateral meristem

15. Answer the following:

- (a) Why are the mitochondria and plastids called semi - autonomous particles?
- (b) What is referred to as satellite chromosome?
- (c) What is the significance of a vacuole in a plant cell?

16. Differentiate between prosthetic group and coenzymes. Give an example each.

17. (a) Supply a specific scientific term for each of the following :

- (i) Phase in the cell cycle when protein and RNA are synthesised.
- (ii) Points at which two sister chromatids are held together .

(b) Describe the following words

- (i) Synaptonemal complex
- (ii) Chiasmata

18. Give a brief account of ATP molecules produced by complete oxidation of one molecule of glucose in eukaryotes.

19. Distinguish between differentiation, dedifferentiation and redifferentiation.

20. (a) What provides alkaline pH in small intestine?

(b) How does intestinal juice contribute in the digestion of protein?

OR

Mention the criteria for essentiality of an element.

21. Distinguish between

- (a) IRV and ERV
- (b) Vital capacity and total lung capacity
- (c) Asthma and Emphysema.

22. Explain the role of glucagon and insulin in maintaining the glucose homeostasis in blood.

SECTION D

23. Shiksha, has difficulty in seeing in relatively low light. On visiting the doctor , the doctor explains the working of the eyes and having certain vitamin in food which helps in improving night vision. Shiksha communicates this with her friends in hostel and encourages them to include fruits and vegetables in their food.

- (a) Name the photoreceptor cells present in eye. Which one is responsible for scotopic vision.
- (b) Draw a neat diagram of eye and mark its different parts.
- (c) What values are depicted by Shiksha.

SECTION E

24. (a) Describe the three kinds of muscles tissue present based on structure, location of occurrence and function.
- (b) Name the excretory organs of cockroach. Where are these located?

OR

- (a) Name the stage in cell division at which the following events occur?
- (i) Chromosomes move to spindle equator
 - (ii) Centromere splits and chromatids separate.
- (b) Explain , why a pair of homologous chromosomes is genetically different, but a pair of sister chromatids is genetically identical before crossing over in meiosis.
- (c) What is meant by 'Quiescent stage of cell cycle'.
- (d) Give the significance of Mitosis.

25. (a) Describe the mechanism of Hatch and Slack pathway in C_4 plants.
- (b) State Blackman's Law of limiting factors.

OR

- (a) Write two energy yielding reactions of glycolysis.
- (b) Mention the two crucial events in aerobic respiration.
- (c) Why is respiratory pathway considered as an amphibolic pathway?

26. (a) List the sequence of steps that occur in pumping action of heart during one cardiac cycle.
- (b) Draw the longitudinal section of kidney and label its different parts.

OR

Explain the sliding filament theory of muscle contraction.



DELHI PUBLIC SCHOOL
SAIL TOWNSHIP, RANCHI
ANNUAL EXAMINATION (2017-18)

Class:- XI
Time- 3 Hrs.

Subject:- Accountancy
F. M:- 90

General Instructions:-

1. This question paper contains 25 questions.
2. All questions are compulsory.
3. All parts of a question should be attempted at one place.

1. What do you mean by Accountancy? [1]
2. Define DBMS ? [1]
3. Write two methods of calculating profits under Single Entry System? [1]
4. Write two difference between Balance Sheet and Statement of Affairs? [1]
5. Calculate the amount of Subscription Created to Income and Expenditure Account for the year 2017. [1]
Subscription received during the year 2017 Rs. 210000

| | 01.01.2017 | 31.12.2017 |
|----------------------------------|------------|------------|
| | Rs. | Rs. |
| Subscription Outstanding | 20000 | 30000 |
| Subscription received in advance | 10000 | 15000 |
6. Write two difference between Cash Book and Receipts and Payments Account? [1]
7. Why provisions of Outstanding Expenses is required? [1]
8. What is meant by Bad Debts? [1]
9. How is unearned income shown in the Final Accounts? [1]
10. What are the uses of computer in Accountancy? [3]
11. Explain : (a) Money measurement Concept [1]
(b) Cost concept [3]
12. Journalise the following
(a) Machine book value Rs. 100000 destroyed by fire. Insurance Company accepted and paid claim of Rs. 75000.
(b) Wood used for making office furniture Rs. 10000 and wages of Rs. 10000 paid in cash.
(c) Sold Personal Car for Rs. 100000 and the amount deposited into business bank a/c. [3]
13. Journalise the following :
(a) Goods Sold for Rs. 100000 , Trade discount 10 % , Cash discount 5 % , 40 % of Sales are on cash basis.
(b) Cash received from debtors and discount allowed to him @ 5% Rs. 1000.
(c) Salary paid Rs. 10800 after deducting income tax @ 10 %. [3]

14. On 1st April 2017 A purchased goods from B for Rs. 10000 and accepted a bill for 3 months. On 4th May B discounted the bill with bank @ 12 % p.a. on due date A paid the amount of bill. Pass journal entries in the books of A and B. [3]
15. Pass journal entry in the books of Drawer in each of the following cases:-
 (a) Noting charges paid by bank
 (b) For bill discounted with bank
 (c) Noting charges paid by drawer
 (d) For acceptance received
 (e) For amount of bill received on due date
 (f) For bill endorsed to creditors. [3]
16. The Trial Balance of Mr. X contains the following information:
- | | Dr. (Rs.) | Cr. (Rs.) |
|-------------------------|-----------|-----------|
| Sundry Debtors | 101000 | ----- |
| Bad Debts | 500 | ----- |
| Provision for Bad Debts | ----- | 2000 |
| Discount Allowed | 750 | ----- |
- Adjustments:-
 (i) Further Bad Debts amounted to Rs. 1000
 (ii) Provision for Bad Debts increased to 5 % of debtors
 (iii) Make a provision for discount on debtors @ 1% of debtors.
 How will you disclosed the above information in final A/c of Mr. X. [3]
17. Rectify the following errors:-
 (a) Sales book has been totaled Rs. 1000 short.
 (b) Purchase Return book overcast by Rs. 500
 (c) Cash received from A Rs. 2500 has not been posted to his account.
 (iv) Sale of old machinery amounting to Rs. 600 has been credited to sales A/c. [4]
18. Rectify the following errors assuming that there is no suspense A/c
 (i) Salary paid to Employees Rs. 10000 , debited to Employees Personal A/c
 (ii) Installation Expenses paid for Machine Rs. 5000 debited to Installation Expenses A/C
 (iii) Rent paid Rs. 1500 debited to Land Lord A/c
 (iv) Commission received from Mr. A Rs. 1000 credited to Mr. A's A/c. [4]
19. On 1st April 2015 X Ltd. purchased a machine for Rs. 200000. On 1st January 2018. It was sold for Rs. 120000. Depreciation is provided @ 10% p.a. on SLM on 31st March every year. Prepare Machine Disposal Account on 01.01.2018 assuming that Provision for Depreciation A/c is maintained in the books. [4]
20. Enter the following transactions in the two column Cash Book (Cash and Bank) of M/s Uday General Store 2018.
 Jan 1 Cash in hand Rs. 20000
 Jan 3 Additional capital introduced Rs. 50000 out of which Rs. 30000 deposited into bank.
 Jan 5 Without from bank for personal use Rs. 5000 and for income tax Rs. 3000
 Jan 7 Bank charges as per pass Book Rs. 1000
 Jan 9 Interest allowed by bank Rs. 2000
 Jan 11 Paid insurance premium by cheque Rs. 2000
 Jan 13 Honored our own acceptance by cheque Rs. 1000 [6]

21. You are given the following particulars:-

- (i) Debit balance in bank column as per the cash Book on 31.03.2017 was Rs. 50000
- (ii) Cheques and drafts deposited into bank but not collected Rs. 5000
- (iii) Bank charges of Rs. 50 for expenses were not recorded in the Cash Book.
- (iv) Interest on investment Rs. 3000 was collected by the bank but not recorded in Cash Book.
- (v) Cheque of Rs. 1000 was issued but not presented for payment
- (vi) Payments received from customs directly by the bank Rs. 30000

Prepare Bank Reconciliation Statement on 31.03.2017.

[6]

22. On 01.04.2015 X Ltd. purchased a machine for Rs. 100000. 2nd Machine was purchased on 01.01.2016 for Rs. 400000. 3rd Machine was purchased on 01.10.2017 for Rs. 200000. On 01.01.2018 1st Machine was sold for Rs. 50000. Depreciation is provided @ 10% p.a. on written down value method on 31st March every year. Prepare Machine Account for 3 years ended on 31.03.2018.

[6]

23. Mr. X a retailer, has not maintained proper books of accounts but it has been possible to obtain the following details:-

[8]

| | 01.01.2017 (Rs.) | 31.12.2017 (Rs.) |
|------------------|---------------------|---------------------|
| Trade Creditors | 5000 | 7000 |
| Loan from Naresh | 20000 | 20000 |
| Stock | 80000 | 120000 |
| Cash in hand | 7000 | 10000 |
| Shop Fittings | 25000 | 25000 |
| Trade Debtors | 16000 | 20000 |
| Bank Balance | 3000 | 5000 |

Calculate the net profit for the year ended 31.12.2017 and a Balance sheet as on that date after noting that :

- (a) Shop Fittings are to be depreciated by Rs. 5000
- (b) Mr. X has drawn Rs. 1000 per week for his own use.
- (c) Included in trade debtors is an irrecoverable balance of Rs. 1000

24. From the following particulars relating to a Charitable Hospital, Prepare Income and Expenditure Account for the year ended 31st March 2017 and Balance Sheet as at that date.

Receipts and Payments Account for the year ended 31.03.2017

| Receipts | Amount Rs. | Payments | Amount Rs. |
|-------------------------------|---------------|-----------------------------|---------------|
| To Balance b/d | 7130 | By Medicines | 30590 |
| To Subscriptions | 47996 | By Doctor's Honorarium | 9000 |
| To Donations | 14500 | By Petty Expenses | 461 |
| To Interest on Investment | | By Salary | 27500 |
| @ 7 % for full year | 7000 | By Equipments | 15000 |
| To Proceeds from charity Show | 10450 | By Expenses on charity show | 750 |
| | | By Balance c/d | 3775 |
| | <u>87076</u> | | <u>87076</u> |

Additional Information:-

| | 01.04.2016 | 31.03.2017 |
|------------------------------------|------------|------------|
| | Rs. | Rs. |
| Subscription Due | 240 | 280 |
| Subscription received in advance | 64 | 100 |
| Stock of Medicines | 8810 | 9740 |
| Estimated Value of Equipments | 21200 | 31600 |
| Buildings (Cost less depreciation) | 40000 | 38000 |

Write two value of hospital to the society. [10]

25. From the following Trial Balance, Prepare Trading Account ; Profit and Loss Account for the year ended 31.03.2017 and Balance Sheet as at that date. [12]

| | | | |
|-------------------------|----------------|-----------------|-----------------------------|
| Purchase | 300000 | Sales | 479760 |
| Drawings | 3500 | Purchase Return | 12200 |
| Motor Vehicles | 123000 | Capital | 590000 |
| Building | 380000 | Creditors | 11870 |
| Sundry Debtors | 80000 | Bank Loan | 33700 |
| Opening Stock | 8400 | | |
| Plant and machinery | 176000 | | |
| Sales Return | 1800 | | |
| Wages | 2800 | | |
| Carriage inward | 890 | | |
| Carriage outward | 300 | | |
| Telephone charge | 3290 | | |
| Salaries | 12000 | | |
| Insurance and taxes | 31200 | | |
| Printing and Stationery | 1350 | | |
| Cash in hand | <u>3000</u> | | <u> </u> |
| | <u>1127530</u> | | <u>1127530</u> |

Adjustments:-

- (i) Closing Stock Rs. 15270
- (ii) Printing and Stationery expenses due Rs. 5850
- (iii) Outstanding liabilities for salaries Rs. 12000
- (iv) Depreciation @ 10 % p.a. is to be provided on all fixed assets
- (v) A bill of Rs. 10000 discount with bank dishonoured.
- (vi) Make a provision for Bad Debts @ 10 % of debtors.

Write two value of business to the society.

.....X.....



DELHI PUBLIC SCHOOL
SAIL TOWNSHIP, RANCHI
ANNUAL EXAMINATION (2017-18)

Class:- XI
Time- 3 Hrs.

Subject:- Business Studies
F. M:- 90

General Instructions:-

- (i) Answers to questions carrying 1 mark may be one word to one sentence.*
- (ii) Answers to questions carrying 3 marks may be from 50 to 75 words.*
- (iii) Answers to questions carrying 4-5 marks may be about 150 words.*
- (iv) Answers to questions carrying 6 marks may be about 200 words.*

-
- Q.1 Name all the stages in the formation of a company. [1]
- Q.2 Name the category of industry which involves breeding or reproduction of plants and animals. [1]
- Q.3 Mention any two methods of payment under on-line transaction. [1]
- Q.4 What are qualification shares? [1]
- Q.5 What is meant by auxiliaries to trade? [1]
- Q.6 What is that enterprise called, in which, a project/service is financed and operated through a partnership of government and private enterprise. [1]
- Q.7 What are Horizontals and Verticals in outsourcing technology? [1]
- Q.8 When is a "statement in lieu of prospectus" is filed? [1]
- Q.9 What is meant by "ploughing back of profits"? [3]
- Q.10 What is a MOD account? [3]
- Q.11 State the social obligation of business towards- [3]
(a) Employees (b) community (c) Government
- Q.12 Explain : (a) RTGS (b) Postal Services [3]
- Q.13 Explain how the following creates problem to small business in India :- [3]
(i) Managerial skill (b) Capacity utilisation (c) Labour
- Q.14 How are the following related to formation of a company: [3]
(i) Minimum subscription (b) SEBI Approval (c) Filing of prospectus
- Q.15 Name and explain the two characteristics of business which involve the possibility of loss. [4]
- Q.16 Explain briefly the need for outsourcing. [4]
- Q.17 Explain: (a) Bill of Lading (b) Pre-shipment finance [4]

- Q.18 Mention and explain how international business is beneficial to nations. [4]
- Q.19 Big Boss Pvt. Ltd. is a company which is involved in setting up big departmental stores in big and small towns. Recently they decided to establish a departmental store in a small town. To accelerate demand they decided to launch products at much cheaper rates. They planned to provide training on marketing skills to local people and employ them in the departmental stores.
- (a) What will be the effect of departmental stores in the small town?
- (b) What values are shown by owners of Big Boss pvt. Ltd. while establishing departmental stores in a small town? [2+2=4]
- Q.20 Explain the various elements of business ethics. [5]
- Q.21 Mention any five contributions made by small business in India. [5]
- Q.22 What is a share and a debenture? Mention two merits of each in detail. [1+2+2=5]
- Q.23 Mention and explain any five features of a Departmental Undertaking. [5]
- Q.24 Discuss any two main features of itinerant retailers and explain its various types. [6]
- Q.25 Mention and explain any six principles of insurance with suitable examples. [6]
- Q.26 Explain the features of a Global Enterprise. [6]
- Q.27 Shikha is a sole proprietor. Over the past decade, her business has grown from operating a neighbourhood corner shop selling accessories like bags, hair clips, nail polish etc. to a retail chain with three branches in the city. Although she looks after the varied functions in all the branches, she is wondering whether she should form a company to better manage the business. She also has plans to open branches countrywide .

In the context of this answer the following questions:

- (a) Explain two benefits of remaining a sole proprietor.
- (b) Explain two benefits of converting to a joint stock company.
- (c) In case she wants to go nationwide , which choice of form of business will be best suitable? [2x3=6]

.....X.....

For a group of 50 male workers, the mean and standard deviation of their weekly wages are Rs 63 and Rs 9 respectively. For a group of 40 female workers, these are Rs 54 and Rs 6 respectively. Find the mean and standard deviation for a combined group of 90 workers.

8. Calculate mode for the following table by inspection method. Do not use grouping and analysis table.

[4]

| | | | | | | | | | |
|------------------------------|---------|---------|---------|---------|---------|---------|--------|---------|--------|
| Production yield (Kg/hectre) | 50 - 53 | 53 - 56 | 56 - 59 | 59 - 62 | 62 - 65 | 65 - 68 | 68 -71 | 71 - 74 | 74 -77 |
| No. of firms | 3 | 8 | 14 | 30 | 36 | 28 | 16 | 10 | 5 |

9. Calculate the cost of living index, for the following data using aggregate expenditure method.

[4]

| Commodity | Prices | | Quantity (in units) |
|-----------|--------|------|---------------------|
| | 2012 | 2016 | 2012 |
| A | 10 | 15 | 15 |
| B | 08 | 12 | 20 |
| C | 20 | 24 | 10 |
| D | 32 | 40 | 05 |
| E | 15 | 20 | 06 |
| F | 12 | 18 | 02 |
| G | 08 | 10 | 01 |

10. (a) Define Karl Pearson's coefficient of correlation with the help of its basic formula.

(b) From the following marks obtained by 10 students in Statistics and Economics, Calculate Spearman's Coefficient of rank correlation and comment.

[2+4=6]

| | | | | | | | | | | |
|------------|----|----|----|----|----|----|----|----|----|----|
| Statistics | 36 | 56 | 20 | 65 | 42 | 33 | 44 | 53 | 15 | 60 |
| Economics | 50 | 35 | 70 | 25 | 58 | 75 | 60 | 45 | 89 | 38 |

11. From the following table, draw Lorenz curve for number of persons in Group A and Group B and interpret the result.

[6]

| | | | | | |
|----------------------------|----|----|----|----|----|
| Profit earned (Rs in '000) | 20 | 30 | 40 | 50 | 60 |
| No. of Persons (Group A) | 06 | 08 | 10 | 12 | 14 |
| No. of Persons (Group B) | 15 | 10 | 09 | 11 | 05 |

12. Explain any 4 uses of Consumer Price Index.

[6]

OR

Explain any 4 important problems while construction of index numbers.

SECTION – B

13. What do you mean by absolute poverty? [1]
14. _____ five yaer plan recognizes the importance of human capital. [1]
(a) Seventh ; (b) Third; (c) Eighth; (d) Sixth
15. What do you understand by devaluation of rupee? [1]
16. Mention 2 types of diversification of agricultural activities. [1]
17. Mention the period of Golden revolution. [1]
18. How are unemployment and poverty inter-related. [3]
19. Explain the role of education in economic development. [3]

OR

Write a note on gender equity in the present education system.

20. Mention 3 major problems of rural banking. [3]
21. Explain the problems faced by the farmers while marketing the agricultural commodities. [4]

OR

Explain the policy measures that are initiated by the Government to improve agricultural marketing.

22. Explain the types of quality of employment in India. [4]
23. How is human development a broader term as compared to human capital? [4]
24. Write a short note on “deregulation of Industries” under the new economic policy 1991. [6]
25. Briefly explain the 3 – dimensional attack on poverty adopted by the Government. [6]

OR

“The poverty alleviation programme have been found unsatisfactory due to number of reasons”.
Comment.

26. Discuss the following as a source of human capital formation – [3 + 3=6]
(a) Health infrastructure
(b) Expenditure on migration
27. Enlist any 3 benefits and 3 limitations of organic farming in India. [3 + 3=6]



DELHI PUBLIC SCHOOL

SAIL TOWNSHIP, RANCHI

ANNUAL EXAMINATION 2018

Class: XI

Subject: Computer Science

Time: 3 Hrs.

M.M - 70

Q.1. (a) Why there is a need of array in C++ programming? [1]

(b) Find the total number of bytes occupied by the given array and structure respectively in the memory. [1]

(i) double x [6] [4]; (ii) struct s1 { char x1[30], x2[35]; int a, b; float z1, z2} st var ;

(c) What do you understand by entry and exit controlled loop statement?
[1]

(d) What is the significance of structure variable in the program of structure? How it is related to array. [2]

(e) Name the header files to which the following function belongs:

(i) **exit()** (ii) **strcmp()** (iii) **gets()** (iv) **isalnum()**. [2]

(f) What are the different kinds of error may occur in a C++ program. Explain briefly. [2]

Q.2. Differentiate between the following (with relevant programming examples): [2 x 4 = 8]

(a) Actual & Formal Parameters (b) Implicit and Explicit type conversion

(c) Call By Value & Call By Reference (d) Global and Local Variable

Q.3. Convert the following: [0.5x4=2]

(a) $(111010110110111)_2 = (\dots\dots\dots)_{16}$ (b) $(D92C)_{16} = (\dots\dots\dots)_2$

(c) $(EAFC)_{16} = (\dots\dots\dots)_8$ (d) $(101000111)_2 = (\dots\dots\dots)_8$

Q.4. Rewrite the following program after removing syntactical error(s) if any. Underline each correction. [2 x 2 =4]

```
(a) #include<iostream.h>
Void main( )
{ clrscr( );
for (int x=0; x>0; x--)
cout>> x;
getch( );}
```

```
(b) #include<iostream.h>
structure Swimmingclub
{ int mem number;
char memname[20];
char memtype[ ] = "LIG"; };
void main( )
{ Swimmingclub per1, per2;
cin<< "Member Number:";
cin>>memnumber.per1;
cout<<"Member Name:";
cin>>per1.memername;
```

```

per1.memtype = "HIG";
per2 = per1;

cin<< "Member Number: " <<per2.memnumber;
cin<< "Member Name: " <<per2.memname;
cin<< "Member Number: " <<per2.memtype;}

```

Q.5. Find the outputs of the following program segments (Show the dry run process):

[2 x 4 = 8]

(i) #include <iostream.h>

#include <conio.h>

void Spell (int &, int);

void main()

{

int a = 2, b=4;

cout<<"Output of the program \n";

cout<<"values of a and b are"<<a<<b<< "\n";

Spell(a,b);

cout<<"values of a and b are"<<a<<b;

}

void Spell(int &a, int b)

{

a=13, b=15; }

(ii) #include<iostream.h>

#include<conio.h>

float sum(float);

void main ()

{

float x=18.0, y;

y=sum(x);

cout<<x<<" " <<y<< "\n";

}

float sum(float x)

{

return (x*x);

}

(iii) # include < iostream.h>

#include < ctype.h>

void AlterIt(char Text[], char C)

{ for (int K= 0; Text [K] != '\0'; K++)

{ if (Text [K] >= 'F' && Text[K] <= 'L')

Text [K] = tolower(Text[K]);

else if (Text[K] == 'E' || Text[K] == 'e')

Text[K] = C;

else if (K % 2 == 0)

Text [K] = toupper(Text [K]);

else

(iv) # include < iostream. h>

include <stdlib.h>

const int LOW = 15;

void main ()

{ randomize ();

int POINT = 5, Number;

for(int i = 1; i <= 4; i++)

{ Number = LOW + random(POINT);

cout << Number<< " : ";

POINT -- ;

}}

```

Text[K] = Text[K - 1]; } }
void main ( )
{ char OldText[ ] = "pOtENTiaLEneRGy";
  AlterIt(OldText, '%');
  cout<< "New Text: " << OldText << "\n"; }

```

Select the correct option given below:

- (a) 19 : 16 : 15 : 16 :
- (b) 19 : 16 : 14 : 18 :
- (c) 14 : 18 : 15 : 16 :
- (d) 19 : 16 : 15 : 18 :

Q.6. Write programs using nested loops to produce the following designs:

[3 x 3 = 9]

(a) * A * A * A *
 * A * A *
 * A *
 *

(b) 1 0 1 0
 0 1 0 1
 1 0 1 0
 0 1 0 1

(c) &
 & &
 & &
 & &

Q.7. Write complete C++ programs for the following:

[3 x 10 = 30]

(a) To search an element in a 1- D array.

OR

To check the equality between the two matrices.

(b) To find the diagonal sum of a 3 x 3 matrix.

OR

To multiply two matrices.

(c) That checks whether a given character is an alphabet or not. If it is an alphabet check whether it is a lowercase character or an uppercase character?

(d) To find the row sum and column sum of a matrix.

(e) To count the number of words present in a line.

(f) To generate Armstrong number from 1 to 1000.

OR

WAP to check whether the number entered is palindrome or not

(g) To find number of vowels present in a given line of text.

OR

That reads a string and converts it to uppercase

(h) Create a function named calculate() that returns sum of the squares of 'n' even consecutive natural number.

OR

Create a function named fact() that returns the sum of the squares of n consecutive natural number.

(i) That reads a password and print "OK" if correct password is entered otherwise print "Access denied". The user should be given three chances to type the password..

(j) To swap the values of two variables using Call by Reference method.



DELHI PUBLIC SCHOOL
SAIL TOWNSHIP, RANCHI
ANNUAL EXAMINATION (2017-18)

Class:- XI
Time- 3 Hrs.

Subject:- Physical Education
F. M:- 70

General Instructions:-

(i) This question paper consists of 26 questions.

(ii) All questions are compulsory.

(iii) Answers to questions carrying 1 mark should be in approximately 10 to 20 words.

(iv) Answers to questions carrying 3 marks should be in approximately 30 to 50 words.

(v) Answers to questions carrying 5 marks should be in approximately 70 to 100 words.

-
- Q.1 Define psychology. [1]
- Q.2 What is second wind? [1]
- Q.3 What do you mean by equilibrium? [1]
- Q.4 Define physiology. [1]
- Q.5 What is buoyancy force? [1]
- Q.6 Write about Olympic Flag. [1]
- Q.7 What is sports journalism? [1]
- Q.8 Define Endurance. [1]
- Q.9 What do you mean by slow twitch fibres? [1]
- Q.10 What is style? [1]
- Q.11. Define adventure sports. [1]
- Q.12 What are the soft skills required for different careers in physical education? [3]
- Q.13 Explain any three principles of sports training? [3]
- Q.14 Mr. Rajesh is a renowned football coach in our school. When he joined the school, he selected our football team and designed a training programme. During the training he noted that few football players were good attackers but due to lack of endurance, they were unable to play up to the last moment. He used various methods to enhance their endurance and got success at last. On the basis of above paragraph, answer the following questions: [3]
- (a) What are the values shown by Mr. Rajesh?
- (b) What was the weakness of attackers?
- (c) Which methods can be used to enhance endurance ?
- Q.15 Explain the centripetal and centrifugal Forces and their application in sports. [3]

P.T.O

- Q.16 What are the traits of Endomorph and mesomorph. [3]
- Q.17 Explain the various types of warming up. [3]
- Q.18 Write any six safety measures for river rafting. [3]
- Q.19 Explain the principles of Adapted Physical Education. [3]
- Q.20 What do you mean by warming up? Explain the methods of warming up. [5]
- Q.21. Differentiate between growth and development. [5]
- Q.22. Discuss about the types of ergogenic aids in detail. [5]
- Q.23 Explain the developmental characteristics at different stages of adolescence. [5]
- Q.24 Write a note on Rajiv Gandhi Khel Ratna Award and Dronacharya Award. [5]
- Q.25 Explain the components of physical fitness. [5]
- Q.26 Elaborate the causes of plateaus in the field of physical education and sports. [5]

.....X.....



DELHI PUBLIC SCHOOL
SAIL TOWNSHIP, RANCHI
ANNUAL EXAMINATION (2017-18)

Class:- XI
Time- 3 Hrs.

Subject:- Engineering Graphics
F. M:- 70

Note:- Attempt all the questions. All dimensions are in millimeters. Missing and mismatching dimensions, if any, may be suitably assumed. Follow s.p.46-2003 revised code (with first angle method of projections)

- Q.1 Multiple choice questions. [1x5=5]**
- (i) When the axis of a solid is vertical, its top view will be seen as a circle, in which of the following options?
- (a) sphere (b) cone (c) cylinder (d) all of these
- (ii) When a point lies in the H.P. its view from the front will be
- (a) on XY line (b) below XY line (c) above XY line (d) none of these
- (iii) A vertical line means a line is
- (a) Perpendicular to V.P. (b) Parallel to V.P (c) Perpendicular to H.P. (d) Parallel to H.P.
- (iv) Which dimension is common in front view and top view?
- (a) Height (b) Length (c) Width (d) None of these
- (v) Which dimension is common in front view and side view?
- (a) Length (b) Width (c) Height (d) All of these
- Q.2 A point 'C' is 15 mm in front of the V.P. and in the H.P. Draw the projections. Give the dimensions. [4]**
- Q.3 A 50 mm long line is parallel to both H.P. and V.P line is 20 mm in front of the V.P. and 15 mm above the H.P. Draw the Projections. Give the dimensions. [4]**
- Q.4 A square pyramid of base side 30 mm, height 50 mm is resting on the ground of its base. Draw front and top view. Give the dimensions. [5]**
- Q.5 A cone of base diameter 40 mm, height 50 mm is resting on the ground of it's base. Axis is vertical. Draw front view and top view. Give the dimensions. [5]**
- Q.6 Construct an isometric scale. [4]**
- Q.7 A hexagonal prism of base side 30 mm, height 50 mm, is resting on the ground of its base, axis is vertical. Base side parallel to V.P. Draw the Isometric Projections. Give all the dimensions. Show the direction from viewing. [8]**

P.T.O

- Q.8 A square plane of base side 40 mm. sides parallel to V.P. Draw the Isometric Projections. It is in horizontal position. Give the dimensions. [5]
- Q.9 In Fig-I Draw its front view, top view and side view. Give the dimensions. [10]
- Q.10 Draw the projections of a pentagonal pyramid, base 30 mm, axis 50 mm long having its base on the ground and an edge of the base parallel to the V.P. Also draw its side view from left. Give the dimensions. [10]
- Q.11 A cylinder of 40 mm diameter, 60 mm height and having its axis vertical, is cut by a section plane, perpendicular to V.P., inclined at 45° to H.P. and intersecting the axis 32 mm above the base. Draw front view and sectional top view. [10]

.....X.....



DELHI PUBLIC SCHOOL, RANCHI

ANNUAL EXAMINATION - 2017-18

Class:- XI
Time:-2Hrs.

Subject:- Fine Art- Painting / Graphics
Max. Mark:- 40

General Instruction:

All the eight questions are compulsory which carry equal marks.

- Q.1. How do you understand Rock Art / Cave Painting? What are its features? Describe any Indian Rock-Art site and its one painting according to your syllabus. [5]
- Q.2. Why do you like or dislike the Ashoka Pillar of Mauryan Period. Why it was adopted as our National Emblem and what is its significance? [5]
- Q.3. What are the characteristic features of Indo-Islamic Art and Architectures? Appreciate the 'Art and Architecture of 'Taj Mahal'? [5]
- Q.4. Write a detail note on a temple structure 'Descent of Ganga'. Mention the subject, medium, period, dynasty, location and artistic description of the given sculptures. [5]
- Q.5. What is the difference between Seated Buddha of Katratila (Mathura style) and Seated Buddha of Sarnath (Gupta Style)? [5]
- Q.6. Write a descriptive note on any one Ajanta fresco mural Painting including location, period, medium, features, subject matters, art and aesthetics. [5]
- Q.7. Mention the medium, period, dynasty, location of the given art and architecture. [5]
- (i) Mother Goddess (ii) Male Torso
(iii) Chouri Bearer (Yakshi) (iv) Qutab Minar
(v) Nataraj
- Q.8. Write in short:- [5]
- (a) Name a Marble sculpture of Jain Architecture.
(b) Mention a Vasera style of Architecture?
(c) What is Chaitya and Vihara?
(d) What are the three aspects of 'Trimurti'?
(e) What is Lost wax technique?