Atomic Energy Central School No. 4, Rawatbhata

Confidence Test II (2017 – 18)

MM: 100 Class-XII, English Time- 3 Hours

GENERAL INSTRUCTIONS:

a. This paper is divided into three sections : A, B,C. All the sections are compulsory.

b. Separate instructions are given with each section and question, wherever necessary. Read these instructions very carefully and follow them faithfully.

c. Do not exceed the prescribed word limit while answering the questions.

Section –A (Reading) (30)

Q.1. Read the passage given below. (12)

1. Internet is built around the idea of openness. It allows people to connect and exchange information freely, if the information or service is not ill-legal. Much of this is because of the idea of net neutrality.

2.When the internet started to take off in 1980s and 1990s, there were no specific rules that asked that Internet Service Providers(ISPs) should follow the same principle. But, mostly because telecom operators were also ISPs, they adhered to the same principle. This principle is known as net neutrality. An ISP doesn't control the traffic that passes its servers. When a web user connects to a website or web service, he or she gets the same speed. Data rate for YouTube videos and Face book photos is theoretically same. Users can access any legal website or web service without any interference from an ISP.

3. Net neutrality has shaped the internet in two fundamental ways. One, web users are free to connect to whatever website or service they want. ISPs do not bother with what kind of content is flowing from their servers. This has allowed the internet to grow into a truly global network and has allowed people to freely express themselves. But more importantly, net neutrality has enabled a level playing field on the internet. To start a website, you don't need lot of money or connections. Just host your website and you are good to go. If your service is good, it will find favour with web users. This has led to creation of Google, Face book, Twitter and countless other services.

4.If there is not net neutrality, ISPs will have the power (and inclination) to shape internet traffic, so that they can derive extra benefit from it. e.g. several ISPs believe that they should be allowed to charge companies for services like YouTube and Netflix because these services consume more bandwidth compared to a normal website. Basically, these ISPs want a share in the money that You tube or Netflix make.

5.Without net neutrality, the internet as we know will not exist. Instead of free access, there could be 'package plans' for consumers. e.g. if you pay rupees 500, you will only be able to access websites based in India. To access international websites, you may have to pay a more. Or may be there can be different

connection speed for different type of content, depending on how much you are paying for the service and what 'add-on package' you have bought.

6.Lack of net neutrality, will also spell doom for innovation on the web. It is possible that ISPs will charge web companies to enable faster access to their websites. Those who don't pay may see that their websites will open slowly. This means bigger companies like Google will be able to pay more to make access to YouTube or Google+ faster for web users, but a start – up that wants to create a different and better video hosting site may not be able to do that.

7. Legally, the concept of net neutrality doesn't exist in India. Sunil Abraham, Director of Centre for Internet and Society in Bangalore, says that Telecom Regulatory Authority of India (TRAI), which regulates the telecom industry , has tried to come up with some rules regarding net neutrality several times. e.g.it invited comments on the concept of net neutrality from industry bodies and stakeholders in 2006.But no formal rules have been formed to uphold and enforce net neutrality.

8. However, despite lack of formal rules, ISPs in India mostly adhere to the principle of net neutrality. There have been some incidents where Indian ISPs have ignored net neutrality, but these are few and far between.

(A) On the basis of your understanding of the above passage , answer each of the questions given below with the help of the options that follow. (1x4 = 4)

(i) Which of the following statements is true about ISPs?

a. ISPs run on specific rules and regulations

b. ISPs are not responsible for controlling the internet jamming

c. ISP interferes in the usage and accessibility of legal websites

d. ISP is responsible for monitoring the kind of content flowing through the internet

(ii) Without net neutrality, how will one be able to access the internet?

a.There will be no access to internet

b.One will have to travel miles to use the web

c.By opting for 'package plans' by ISPs to access the web

d.None of the above

(iii) What problem will the start – ups face in case the law of net neutrality is not enforced?

a.They will have to pay more to the ISPs

b.They will face funding problems

c. They won't be able to prototype the idea of better and innovative sites

d.All of the above

(iv) What does the passage and the writer talk about ?

a. The advantages of internet to mankind.

b. Importance of net neutrality and its enforcement as law

c. Evolution of start – ups

d. All of the above

(B) Answer the following questions briefly. (1x6=6)

i. What has made internet emerge as a global network?

ii. How is lack of net neutrality supposed to affect the growth of start – ups?

iii. What do you understand by the phrase 'level playing field' in the passage?

iv. DO ISPs support the concept[t of net neutrality? Why or why not?

v. What efforts has the TRAI ever made for enforcement of net neutrality and were they successful?

vi. What are the 'package plans' the author talks about in the passage?

(C) Find words from the passage which mean the same as each of the following. (1x2=2)

i. something of utmost importance (para 3)

ii. a person with an interest or concern in something (para 7)

Q.2. Read the passage given below and answer the questions that follow. (10)

The facts about Child Care Policy have also shifted dramatically over the past 25 years. The nation now has a family leave law, albeit one that is woefully inadequate by international standards. Expansions of Head Start and the establishment of Early Head Start , alongside the growth of state pre-kindergarten programmes, are promising developments. Federal and state expenditures on – and funding streams for – child care have also grown substantially, but with minimal restrictions on where dollars are spent. The Federal Government started this trend in 1990 with the passage of the Child Care and Development Block Grant. That programme prioritized access and a market-based (voucher) approach to child care for low-income families, with minimal attention to quality protections or improvements.

Yet the triad of pressing policy issues that we raised in 1990 – quality, affordability and caregiver working conditions – remains in urgent need of attention today. While there has been growing attention to the quality of early-childhood settings in the form of state Early Learning Standards and Quality and Improvement Rating Systems, there is still no assurance that any child in any early care and education setting in the United States will experience safe, developmentally supportive care and education. Wide variation in child care quality remains the norm both across and within different types of settings in different states. Tensions between access and quality are still severe.

Parent fees for child care have doubled since 1997; the share of family income subsumed by child care costs still shows a gaping disparity between non-poor (7.6%) and poor (30.1%) families. Child care workers and teachers continue to earn wages that hover near the poverty line and fall well below those of elementary school teachers, even among comparably degreed teachers. Not surprisingly, child care staff

face exceedingly high levels of economic distress and rely heavily on public health, food and income supports.

President Obama has made preschool education and child care quality national policy priorities for first time in more than four decades. The historical separation between child care (for working parents) and early education (for children's development) is gradually eroding, as belied not only by growing reliance on "early care and education" as the term of art for this domain of research and policy, but also by recent policy developments that simultaneously address access and quality and encourage coordination across child care and early-education funding streams.

(A) On the basis of your reading of the above passage, answer the following questions by choosing the correct option. (1x2)

(i) Growth in expenditure in Child care in the USA started in the year ……. .

(a) 1980

(b) 1990

(c) 1997

(d) Not given in the passage

(ii) Promising developments in the USA in the field of child care includes ……. .

(a) expansion of Head Start programme

(b) establishment of early Head Start programme

(c) growth of state kindergarten programmes

(d) all of the above

(B) Answer the following questions briefly. (1x6)

i. What have been made national policy priorities after more than 40 years?

ii. What did the Child Care and Development Block Grant Programme do?

iii. Why is there no guarantee that children in early care and education will get a safe and development oriented care ?

iv. What is the difference in child care costs between rich and poor families?

v. What 'historical separation' is being bridged by recent government policy developments ?

vi. What are the promising developments?

C. i.The word ……. in the second paragraph is an antonym of 'reducing'. 1

ii..The word …… in the last paragraph is a synonym of 'together'. 1

Q.3. Read the passage given below and answer the questions that follow. (8)

Fasting, in some form or the other, is a part of every religion. In Islam, it is called 'roza'. The Arabic equivalent of roza is 'sawm'. Sawm literally means abstinence, i.e. to refrain from doing something. The nine month of the Hijri calendar, i.e. Ramzan, has been especially chosen for fasting. Fasting during the month of Ramzan is obligatory for every muslim, except when he has a genuine reason not to do so.

In every human being, there are two faculties to take into consideration: one is desire and the other is reason. In all matters, the individual has to decide whether to follow his desire or his reason. The great merit in fasting is that it trains us to refrain from following our desires and instead always to bow to reason. That is the spirit of sawm.

According to the Prophet of Islam , one who fasts should never stoop to using abusive language; if someone abuses him, he should simply say 'I am fasting'. Islamic fasting, as far as formal practice is concerned, is to abstain from food and drink. But the actual spirit of fasting is to refrain from indulging in negative thinking and the use of negative language. Self-control, far from being a negative or passive action, has great value in human behavior. In life, there are more than 50% occasions when one should refrain from action and less than 50% occasions when one should take action. This is the formula for success for both individuals and society.

Self-control is integral to social ethics. If you live alone on an island, there is no need for any control, as the absence of others leaves you free to do whatever you want to do. However, when you are living in a society, you have to give leeway to others. This is what every person on the road does when he drives a car: he either keeps to the left (or to the right depending upon which country he is in) so that he gives way to other cars and can carry on his journey without accidents. This principle is applicable to the entire life of an individual. It entails giving others the chance to live their lives while living one's own life.

Self-control is a kind of mutual adjustment. When a person adopts the way of self-control, it is far-reaching in effects. In this way, he promotes the culture of self-control in a society and indicates to others through his actions that they should follow the path that he is following. Thus, the way of self-control leads to a better society, while lack of self-control in individuals leads to the destruction of peace. As far as the individual is concerned, self-control serves as a means of personality development. This way of life, in turn, saves others from unnecessary problems.

There is a 'pre-control' for exercising self-control and i.e. thinking. When a person adopts a life of self-control, at all times he first thinks about what path he should tread. Only after considerable thought does he plan out his course of action. A life lived in this way will necessarily be marked by creative thinking. In addition, self-control contributes to one's intellectual development and turns one into a man of wisdom.

In Islam, fasting is worship for god. Fasting is the kind of worship , which is simultaneously for the sake of God and man. Thus, if fasting is observed in the right spirit, in all sincerity, it will make an individual pious and responsible.

(a) On the basis of your reading of the above passage, make notes on it using headings and sub-headings. Use recognizable abbreviations wherever necessary (minimum 4). Supply a suitable title to it. (5)

(b) Write a summary of the above passage in about 80–100 words. (3)

Section – B (Advanced Writing Skills) (30)

Q.4.You are Arnit/ Arnika. You want to sell your car as you are planning to buy a new one. Draft a suitable advertisement to be published in the Vehicles Advertisement column of a newspaper. (4)

OR

You are Dr. Amit Gupta, an eminent educationist. You have been invited to preside over an Inter Zonal Declamation Competition by Nalini, the President of English Literary Club of Government Model Sr. Sec. School , Sector 20, Chandigarh. Write a reply accepting the invitation.

Q.5. You are Nitin/ Natasha, staying at 20,S.F.S. Flats, Worli, Mumbai. You bought a mobile phone from "Cell Phone Zone", Chembur, Mumbai. The phone developed a problem within a few days of the purchase. Write a letter to the Sales Manager of the Showroom complaining about the defect and seeking immediate replacement. (6)

OR

You are Mallika/ Mayank, student of class XII, Modern School, Shimla. You are eager to enter the National Film Academy, Shimla, after your board results. Write a letter to the Director of the film academy seeking information regarding admission procedure, eligibility criteria, fee structure, placement opportunities, etc.

Q.6.On the threshold of being a world superpower, India does have a long young workforce, but unfortunately not many in this force are employable for want of necessary skills. Write in about 150 – 200 words an article for a newspaper on the topic 'Skill Development is the Need of the Hour'. You are Anita/ Arnav. (10)

OR

With a view to create awareness about health, St. Anne School organized a 'Health Mela' in the school premises. Various chart, models, fitness equipments were displayed. Lectures, debates, discussions, plays were organized. A workshop on low calorie cooking was also organized. Write a report in 150 – 200 words on the 'health Mela' for the school magazine. You are Neha/ Nikhil, Secretary of Health Club of the school.

Q.7. Yoga unites the body, mind and soul. When you are in harmony, the journey through life is calmer, happier and more fulfilling. Write a speech in 150 – 200 words to be delivered in the morning assembly on the topic 'Yoga – a Way of Life'. You are Karan/ Kajal of D.A.V. Public School, Rawatbhata. (10)

OR

' Homes for the aged is a necessity in India'. Write a debate in 150 – 200 words either for or against this motion. You are Shivam/ Shivani.

SECTION – C (Text Books and Long Reading Text) (40)

Q.8. Read the extract given below and answer the questions that follow: (1x4=4)

Those who prepare green wars,
wars with gas, wars with fire,
victory with no survivors,
would put on clean clothes
and walk about with their
brothers
in the shade, doing nothing.

i. Who are ' those' in line 1?
ii. What are ' green wars' ?
iii. Explain : 'Victory with no survivors'.
iv. Which figure of speech is used in the above stanza?

OR

Far far from gusty waves these children's faces.
Like rootless weeds, the hair torn round their pallor:
The tall girl with her weighed-down head. The paper-
Seeming boy, with rat's eyes. The stunted, unlucky heir

i. What are the children compared to?
ii. Why do you think the tall girl is sitting with a weighed-down heads?
iii. Write two phrases which indicate that the children are undernourished.
iv. Write in two sentences the painful feelings of the children.

Q.9. Answer any four of the following questions in about 30 – 40 words each. (3x4 = 12)

a. What is linguistic chauvinism ? How is it reflected in the lesson, 'The Last Lesson'?
b. How did the near drowning experience at the pool affect Douglas ?
c. How is the concept of ageing reflected in the lesson, My Mother at Sixty Six?

d. What does Stephen Spender want for the children of the slums?

e. 'I shall cut my toft, crop my hair short, and become an insurance agent'. Explain the context.

f. How were the prison officers befooled?

Q.10. Answer the following question in about 120 – 150 words. (6)

Edla's empathetic and compassionate behavior changed the life of the rat trap seller. Do you think that an act of kindness can change a person's view of the world. Explain.

OR

Maintaining a balance between one's fantasy and the real world is a key to the survival. Give your opinion on Sophie's character in the light of the above statement.

Q.11.The story 'The Tiger King' is a satire on the conceit of those in power. How does the author employ the literary device of dramatic irony in the story? (6)

OR

How did Evans and his friends plan Evans' escape most meticulously down to the minutest detail? Did they succeed?

Q.12. Answer the following question in about 120 – 150 words. (6)

Compare and contrast the character of Dr. Kemp with that of Griffin?

OR

Attempt a character sketch of Silas Marner.

13. Answer the following question in about 120 – 150 words. (6)

Discuss the role played by Mr.Marvel in The Invisible Man.

OR

How does Molly Farren affect the course of action that takes place in the story?

Atomic Energy Central School -4, Rawatbhata

Confidence Test II (2017-18)

M.M. 70 Class – XII, Physics (Theory) Time Allowed: 3 Hours

General Instructions

a) All the questions are compulsory.
b) There are 26 questions in total.
c) Questions 1 to 5 are very short answer type questions & carry 1 mark each.
d) Questions 6 to 10 carry two marks each.
e) Questions 11 to 22 carry three marks each.
f) Questions 23 is value based questions carry four marks.
g) Question24 to 26 carries five marks each.
h) There is no overall choice. However, an internal choice has been provided in one question of two marks, one question of three marks and in five marks question. You have to attempt only one of the choices in such questions.
i) Use of calculators is not permitted. However, you may use log tables if necessary.

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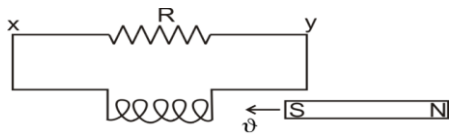
1. A magnet is being moved towards a coil with a uniform speed *v* as shown in the figure. State the direction of the induced current in the resistor R.



2. A beam of a particles projected along +x-axis, experiences a force due to a magnetic field along the +y-axis. What is the direction of the magnetic field?
3. A converging lens is kept co-axially in contact with a diverging lens – both the lenses being of equal focal lengths. What is the focal length of the combination?
4. Define self-inductance of a coil. Write its SI units.
5. A concave mirror, of aperture 4cm, has a point object placed on its principal axis at a distance of 10cm from the mirror. The image, formed by the mirror, is not likely to be a sharp image. State the likely reason for the same.
6. Derive relation between electric field, conductivity and current density for a conductor.
7. The ground state energy of hydrogen atom is – 13.6 eV. What are the kinetic and potential energies of electron in this state?
8. If the radius of the Gaussian surface enclosing a charge is halved, how does the electric flux through the Gaussian surface change? Give reason also. OR

   A uniform cylinder of cross section radius ‘r’ and length ‘l’ is placed in uniform electric field E . Find net

electric flux passing through it

9. The following table gives data about the single slit diffraction experiment:

Wavelength of light	Half angular width of the principal maxima
λ	α
P λ	qα

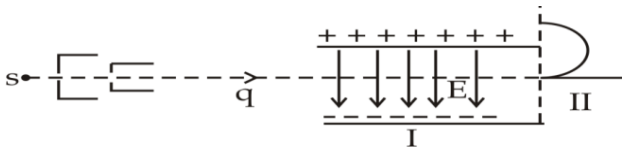
Find the ratio of the widths of the slits used in the two cases. Would the ratio of the half angular widths of the first secondary maxima, in the two cases, be also equal to q?

10. A magnetic needle free to rotate in a vertical plane parallel to the magnetic meridian has its north tip down at 60° with the horizontal. The horizontal component of the earth's magnetic field at the place is known at to be 0.4 G. Determine the magnitude of the earth's magnetic field at the place.
11. Two convex lenses of same focal length but of aperture A1 and A2 (A2<A1), are used as the objective lenses in two astronomical telesc-opes having identical eyepieces. What is the ratio of their resolving power? Which telescope will you prefer and why? Give reason.
12. A fine pencil of β-particles, moving with a speed, enters a region (region I), where a uniform electric and a uniform magnetic field are both present. These β-particles then move into region II where only the magnetic field, (out of the two fields present in region I), exists. The path of the β-particles, in the two regions, is as shown in the figure.

    (i) State the direction of the magnetic field.

    (ii) State the relation between 'E' and 'B' in region I.

    (iii) Drive the expression for the radius of the circular path of the -particle in region II.



13. When a monochromatic yellow light is incident on a given photosensitive surface, photoelectrons are not ejected, while with green light emission of photo electron occurs. What will happen if the same surface is exposed to (i) violet light (ii) red light? Justify the answer.
14. (a) Plot a graph comparing the variation of potential 'V' and electric field 'E' due to a point charge 'Q' as a function of distance 'R' from the point charge. (b) Find the ratio of the potential differences that must be applied across the parallel and the series combination of two capacitors C_1 and C_2 with their capacitances in the ratio 1: 3 so that the energy stored, in the two cases, becomes the same.
15. Light of wavelength 2000 A^0 falls on a metal surface of work function 4.2 eV. What is the kinetic energy (in eV) of (i) the fastest and (ii) the slowest photoelectron emitted from the surface?
16. Write the expression for the speed of an electromagnetic wave in terms of the permittivity and permeability of the medium and with proper calculations show that the speed of an EMW in vacuum is equal to the speed of light in vacuum.
17. (a) How is the focal length of a spherical mirror affected when the wavelength of the light used is increased? (b) A convex lens has 20 cm focal length in air. What is its focal length in water?(Refractive index of air-water = 1.33, refractive index of air-glass =1.5).
18. State the law of radioactive decay. Establish a mathematical relation between half-life period and

disintegration constant of a radioactive nucleus.

19. Two long co-axial solenoids of the same length but different radii and different number of turns are wound one over the other. Deduce the expression for the mutual inductance of this arrangement.
20. Define binding energy of nuclei .draw binding ebergy per neucleon versus mass no. curve and explain how this curve can be used to justify nuclear energy.
21. Derive mirror equation for a spherical mirror.
22. A parallel beam of monochromatic light of wavelength 500 nm falls normally on a narrow slit and the resulting diffraction pattern is obtained on a screen 1 m away. It is observed that the first minimum is at a distance of 2.5 mm from the center of the screen. Find (a) The width of the slit.(b) The distance of the second maximum from the center of the screen. (c) The width of the central maximum.

OR

A beam of light consisting of 2 wavelengths,650 nm & 520 nm,is used to obtain interference fringes in a Young's double slit experiment.What is the least distance from the central maximum where the bright fringes due to the both the wavelengths coincide?The distance between the slits is 2 mm & the distance b/w the plane of the slits and screen is 120 cm.

23. Excessively large amount of energy is released in an uncontrolled way in a nuclear bomb explosion. Some scientists have expressed fear that a future nuclear war on Earth would be followed by a severe 'nuclear winter' with a devastating effect on life on Earth.

Answer the following questions based on above possible scenario:

a) Name the basic principle responsible for release of large amount of energy in a nuclear bomb explosion. How will the nuclear bomb explosion result in 'nuclear winter'?

b) Which two human values need to be promoted in individuals so that such a situation of nuclear winter does not arise?

c) Suggest any one method to promote these values in school students.

24. (a)Draw a ray diagram to show the formation of the image of a point object placed in a medium of refractive index n_1 on the principal axis of a convex spherical surface of radius of curvature R and refractive index n_2. Using the diagram derive the relation;

$$\frac{n1}{v} - \frac{n2}{v} = \frac{n2-n1}{R}$$

(b)A convex lens of focal length 20 cm is placed coaxially with a convex mirror of radius of curvature 20 cm. The two are kept 15 cm apart. A point object is placed 40 cm in front of the convex lens. Find the position of the image formed by this combination. Draw the ray diagram showing the image formation.

OR

(a)Draw a neat and clean ray diagram to explain the formation of image by a refracting type telescope and derive its magnifying power in normal adjustment.

(b)A converging lens of focal length 50 cm is placed co axially in contact with another lens of unknown focal length. If the combination behaves like a diverging lens of focal length 50 cm, find the power and nature of the second lens.

25. A coil having N number of turns is rotated in a region of uniform magnetic field. With proper mathematical discussion show that the voltage developed across the coil is of alternating nature. Draw a voltage versus time graph for this voltage. Also calculate the rms value of this alternating voltage over a complete cycle.

OR

Define the term impedance of LCR circuit. Calculate the value of impedance for an LCR circuit and also write the condition of resonance. Hence find the expression for resonant frequency.

26. Explain the formation of 'depletion layer' and 'barrier potential' in a *p-n* junction.

(b) With the help of a labeled circuit diagram explain the use of a *p-n* junction diode as a full Wave rectifier. Draw the input and output waveforms.

OR

Draw a circuit diagram of an *n-p-n* transistor with its emitter base junction forward biased and base collector junction reverse biased. Describe briefly its working.

Explain how a transistor in active state exhibits a low resistance at its emitter base junction and high resistance at its base collector junction. Draw a circuit diagram and explain the operation of a transistor as a amplifier.

ATOMIC ENERGY CENTRAL SCHOOL- 4, RAWATBHATA

Confidence Examination –II (2017-18)

Time – 3Hrs Class – XII, Chemistry Max. Marks – 70

General Instructions:

Note - All questions are compulsory. Use log tables, if necessary.

Q. No. 1 to 5 are very short answer questions and carry 1 mark each.

Q. No.6 to 10 are short answer questions and carry 2 marks each.

Q. No. 11 to 22 are also short answer questions and carry 3 marks each.

Q. No 23 is a value based question and carries 4 marks.

Q. No. 24 to 26 are long answer questions and carry 5 marks each.

1. Write IUPAC name of $(CH_3)_2NCH(CH_3)_2$. 1

2. Which one either n- or p-type semi conductor will be formed when:1

(i) Ge is doped with In (ii) B is doped with Si.

3. Why bithional is added with soap? 1

4. Name the base that is found in RNA only. 1

5. Give an example of anionic detergent. 1

6. Prove that the packing efficiency in fcc structure is 74%. 2

7. Give a chemical test to distinguish the following pairs of compounds: 2

(i) 1-Proponal and 2-Proponal (ii) Ethyl amine and diethyl amine.

8. Define the following: 2

(i) Kohlrausch law (ii) Electrode and potential

9. Differentiate the following: 2

(i) Order and molecularity of reactions (ii) Threshold energy and activation energy

10. Complete the following reactions: 2

(i) $Cr_2O_7^{2-} + NO_2^- + H^+ \rightarrow$? (ii) $MnO_4^- + SO_2 + H_2O \rightarrow$

OR

Compare the following properties of lanthanoids and actinoids:

(i) Oxidation states (ii) Basic strength of hydroxides.

11. Sodium has bcc structure whose atomic radius is 183 pm. Calculate its density.

(Atomic mass of Na = 23). 3

12. A voltaic cell is set up at 25^0C with the two half cells Al^{3+} (0.001M) and Ni^{2+} (0.50M). Write an equation for the reaction that occurs when the cell generates an electric current and determine the cell potential. Given that $E^0_{Al3+/Al} = -1.66V$ and $E^0_{Ni2+/Ni} = -0.25V$. 3

13. Explain the following observations: 3

(i) Ferric hydroxide sol gets coagulated on addition of sodium chloride solution.

(ii) Cottrell's smoke precipitator is fitted at the top of the mouth of the chimney of the factories.

(iii) Physical adsorption is multilayered, while chemical adsorption is monolayered.

14. The decomposition of reactant A has the value of k as $4.5 \times 10^3\ s^{-1}$ at 10^0C and activation energy 60 kJ mol^{-1}. At what temperature would k be $1.5 \times 10^4\ s^{-1}$? 3

OR

Prove that the time required for 99% completion of a reaction is twice than the time required for the completion o 90% of the reaction.

15. Describe the role of: 3

(i) Cryolite in extraction of aluminium.

(ii) Limestone in the extraction of iron.

(iii) CO in purification of nickel.

16. (i) What was the first noble gas compound? What inspired N Bartlett to prepare this compound?

(ii) Bleaching action of Cl_2 is permanent while of SO_2 is temporary. 3

17. The elements of first transition series are: Sc Ti V Cr Mn Fe Co Ni Cu and Zn. Answer the following about above series:

(i) Which element is not regarded as transition metal?

(ii) Which element has highest melting point?

(iii) Which element exhibit maximum oxidation states? 3

18. (i) Write IUPAC name of $K_2[HgCl_4]$

(ii) Draw the geometrical isomers of $[CrCl_3(NH_3)_3]$

(iii) $[NiCl_4]^{2-}$ is tetrahedral where as $[Ni(CN)_4]^{2-}$ is square planer,why? 3

19. Write about the following reactions: 3

(i) Reimer-Tiemann reaction

(ii) Williamsons synthesis

(iii) Claemenson reduction.

20.Write the mechanism of esterification of carboxylic acid. 3

21. Give reasons for the following: 3

(i) Phenol is more acidic than ethanol.

(ii) Ethyl amine is more basic than ammonia.

(iii) Chlorobebzene is extremely less reactive towards nucleophilic substitution reactions.

22. Name the type of reactions involved in the formation of following polymers from their monomers.

(i) Polythene (ii) PHBV (iii) Bakelite 3

23. Monika's maid was facing some health problems for a long time but has been taking medicines on her own. One day she went to a chemist shop and explained her problems to the person there. The chemist gave her six doses of some medicines for three days. When she came home, she showed those medicines to Monika. Monika was a science student and has some knowledge of side effects of medicines. She asked her maid not to take those medicines of different combinations. She took her to a doctor and narrated her problems. The doctor diagnosed her and told Monika that she has brought her in time otherwise she would have suffered a serious problem. He gave proper medicines and her maid recovered in 3-4 days.

After reading the above passage, answer the following questions:

(i) What values do you attach to Monika's behavior?

(ii) Why should not medicines be taken without consulting the doctor?

(iii) Both antacids and anti allergic drugs are antihistamines but they cannot replace each other. Why? 4

24. (i) A solution containing 25.6g of sulphur dissolved in 1000g of naphthalene whose freezing point 80^0C. Calculate formula of sulphur. $K_f = 6.8$ K/m, atomic mass of sulphur-32.

(ii) What are non-ideal solutions? What type of non-ideal solution is formed when chloroform dissolved in acetone? Explain. 2+3

OR

(i) A solution of glucose (molar mass 180 g mol^{-1}) in water labeled as 10% by mass. Its density is 1.2 g ml^{-1}. Calculate its molality.

(ii) Define the following:

a) Mole fraction b) Colligative property c) Van't Hoff factor

25. (i) Bring out the following conversions:

a) Propanone to propan-2-ol b) Toluene to benzoic acid

(ii)A compound A (C_2H_6O) on oxidation by PCC gave B, which on treatment with dil. alkali and subsequent heating furnished C.Compound B on oxidation by $KMnO_4$ forms a monobasic carboxylic acid with molar mass 60 g mol^{-1}. Deduce the structure of A, B and C. 2+3

OR

(i) Write chemical reactions for the following conversions:

a) Aniline to nitrobenzene b) Propene to propan-1-ol

(ii) An organic compound A on treatment with aquous ammonia and subsequent heating forms compound B, which on heating with Br_2 & KOH forms compound C of molecular formula C_6H_7N. Write the chemical reactions involved and IUPAC name of compound A, B &C.

26. (i) Draw the structure of:

a) $BrCl_3$ b) $XeOF_4$

(ii) Arrange the following in order of given property against them:

a) HOCl, HOBr, HOI increasing order of acidic strength.

b) NH_3, PH_3, AsH_3, BiH_3 increasing order of basic strength.

c) H_2O, H_2S, H_2Se, H_2Te increasing order of boiling point. 2+3

OR

(i) Draw the structure of: a) H_2SO_5 b) XeF_6

(ii) Explain Ostwald's process for the manufacture of nitric acid. Write the chemical reaction when iodine combines with nitric acid.

Atomic Energy Central School No. 4, Rawatbhata
Confidence Test II (2017 – 18)

MM: 100 Class-XII, Mathematics Time- 3 Hours

General Instructions:

(i) All questions are compulsory.

(ii) This question paper contains 29 questions.

(iii) Question 1- 4 in Section A are very short-answer type questions carrying 1 mark each.

(iv) Question 5-12 in Section B are short-answer type questions carrying 2 marks each.

(v) Question 13-23 in Section C are long-answer-I type questions carrying 4 marks each.

(vi) Question 24-29 in Section D are long-answer-II type questions carrying 6 marks each.

SECTION A

Q.1. Let R = {a , a^3) : a is a prime number less than 5} be a relation. Find the range of R.

Q.2. The elements a_{ij} of a 3 × 3 matrix are given by $a_{ij} = \frac{1}{2}|-3i + j|$. Write the value of elements a_{32}.

Q.3. Find a vector in the direction of $\vec{a} = 2\hat{i} - \hat{j} + 2\hat{k}$. Which has magnitude 6 units.

Q.4. If $f(x) = \{4 - (x - 7)^2\}$, the find $f^{-1}(x)$.

SECTIONS B

Q.5. Find the value of $\sin^{-1}\left[\cos\left(\frac{33\pi}{5}\right)\right]$.

Q.6. If the area of a triangle is 35 sq. units with vertices (2, – 6), (5, 4) and (K, 4), then find the values of K.

Q.7. If $x = t + \frac{1}{t}$, $y = t - \frac{1}{t}$, then find $\frac{dy}{dx}$.

Q.8. Find the interval in which $y = x^2e^{-x}$ is increasing.

Q.9. $\int \frac{\sin x + \cos x}{\sqrt{1 + \sin 2x}}\, dx$

Q.10. Find the differential equation of all non-horizontal lines in a plane.

Q.11. Find a vector of magnitude 9, which is perpendicular to both the vectors $4\hat{i} - \hat{j} + 3\hat{k}$ and $-2\hat{i} + \hat{j} - 2\hat{k}$.

Q.12. Three events A, B and C have probabilities $\frac{2}{5}, \frac{1}{3}$ and $\frac{1}{2}$ respectively. If P(A $\cap$ C) = $\frac{1}{5}$ and P(B $\cap$ C) = $\frac{1}{4}$, then find the values of P(C/B) and P($A^1 \cap C^1$).

SECTION C

Q.13. If $A = \begin{bmatrix} 1 & 2 & 3 \\ 2 & 1 & 2 \\ 2 & 2 & 1 \end{bmatrix}$, then prove that $A^2 - 4A - 5I = O$. Hence find A^{-1}.

Q.14. Find the value of K for which

$$f(x) = \begin{cases} \frac{\sqrt{1+Kx} - \sqrt{1-Kx}}{x}, & \text{if } -1 \le x < 0 \\ \frac{2x+1}{x-1} & \text{if } 0 \le x \le 1 \end{cases}$$

is continuous at x = 0

OR

Let f(x) = x|x|, $\forall\ x \in R$. Discuss the differentiability of f(x) at x = 0

Q.15. If x = 2cosθ – cos2θ and y = 2 sinθ – sin2θ then prove that $\frac{dy}{dx} = \tan\left(\frac{3\theta}{2}\right)$.

Q.16. Find the equation of the normal at a point on the curve $x^2 = 4y$, which passes through the point (1, 2). Also, find the equation of the corresponding tangent.

OR

The money to be spent for the welfare of the employees of a firm is proportional to the rate of change of its total revenue (in ₹) received from the sale of x units of a product is given by

R(x) = $3x^2 + 36x + 5$, then find the marginal revenue, when x = 5 and write which value does the equation indicate?

Q.17. If $e^x + e^y = e^{x+y}$, then prove that

$$\frac{dy}{dx} + \frac{e^x(e^y - 1)}{e^y(e^x - 1)} = 0$$

Q.18. $\int \frac{dx}{\sin x + \sin 2x}$

Q.19. Solve the following differential equation

$$x \cos\left(\frac{y}{x}\right)\frac{dy}{dx} = y \cos\left(\frac{y}{x}\right) + x,\ x \neq 0$$

OR

Solve the differential equation

$\frac{dy}{dx}$ + y cot x = 4 x cosec x, given that y = 0 when x = $\pi/2$

Q.20. If $\vec{a}, \vec{b}$ and $\vec{c}$ are three mutually perpendicular vectors of the same magnitude, then prove that $\vec{a}+\vec{b}+\vec{c}$ is equally inclined with the vectors $\vec{a}, \vec{b}$ and $\vec{c}$.

Q.21. Find the equation of the perpendicular from point (3, –1, 11) to line $\frac{x}{2} = \frac{y-2}{3} = \frac{z-3}{4}$. Also find the coordinates of foot of perpendicular and length of perpendicular.

Q.22. There is a group of 100 people who are patriotic out of which 70 believe in non-violence. To persons are selected at random out of them, write the probability distribution for the selected persons who are non-violent. Also find the mean of the distribution. Explain the importance of non-violence in patriotism.

Q.23 A letter is known to have come either from LONDON or CLIFTION. On the envelope just two consecutive letters ON are visible. what is the probability that the letter has come from (j) LONDON (ii) CLIFTON.

SECTION D

Q.24. In the set of natural numbers N, define a relation R as follows: $\forall$n, m$\in$N, nRm, if on division by 5 each of the integers n and m leaves the remainder less than 5. Show that R is an equivalence relation. Also obtain the pair wise disjoint subset determined by R.

OR

Consider f: R + $\rightarrow$ (–9, ∞) given by

$f(x) = 5x^2 + 6x - 9$

Prove that f is invertible with

$f^{-1}(y) = \left[\frac{\sqrt{54+5y}-3}{5}\right]$

Where R+ is the set of all positive real number.

Q.25. If x + y + z = 0, then prove that

$$\begin{vmatrix} xa & yb & zc \\ yc & za & xb \\ zb & xc & ya \end{vmatrix} = xyz \begin{vmatrix} a & b & c \\ c & a & b \\ b & c & a \end{vmatrix}$$

OR

Find the value of θ satisfying

$$\begin{vmatrix} 1 & 1 & \sin 3\theta \\ -4 & 3 & \cos 2\theta \\ 7 & -7 & -2 \end{vmatrix} = 0$$

Q.26. A farmer has a plot in the shape of a circle $x^2 + y^2 = 4$. He divides his property among his son and daughter in such a way that son gets the area interior to the parabola $y^2 = 3x$ and daughter gets interior to the parabola $y^2 = -3x$. How much area his son got? Have both of them get equal share? What is the value shown by the farmer?

Q.27. Evaluate $\int_{1/3}^{1} \frac{(x - x^3)^{1/3}}{x^4} dx$

OR

Evaluate $\int_0^3 (2x^2 + e^x) dx$ as limit of sum.

Q.28. Find the distance of the point (1, –2, 3) from the plane x – y + z = 5 measured parallel to the line $\frac{x-1}{2} = \frac{y-3}{3} = \frac{z+2}{-6}$.

Q.29. If a young man rides his motorcycle at 25 km/h, had to spend of ₹ 2 per km on petrol with very little pollution in the air. If he rides it at a faster speed of 40 km/h, the petrol cost increases to ₹ 5 per km and rate of pollution also increases. He has ₹ 100 to spend on petrol and wishes to find what is the maximum distance he can travel with in one hour? Express this problem as

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ATOMIC ENERGY CENTRAL SCHOOL No 4 RAWATBHATA

Confidence Test-II (2017-18)

Time: 3Hrs Class – XII, Biology M.M. 70

General Instruction:-

1) All questions are compulsory.
2) This question paper consists of four sections A, B, C and D. section 'A' consists of 8 question of one mark each. Section 'B' is of 10 questions of 2 marks each, section 'C' is of 9 questions of 3 marks each and section 'D' is of 5 marks each.
3) There is no overall choice. However an internal choice has been provided in one questions of 2 marks one question of 3 marks and all questions of 5 marks. Attempt only one choice in all such questions.
4) Wherever necessary,diagrams drawn should be neat & properly labeled.

SECTION 'A'

1. What is meant by 'homothallic'?
2. What is the ploidy of PEN?
3. Give two examples of biogeogrphical evidences in favor of evolution.
4. How has European Federation of Biotechnology (EFB) defined biotechnology?
5. Describe eutrophication.
6. Mention two adaptations shown by each of the following to live in their environment: (i) Desert plant (ii) Mammal of colder region.
7. Mention the dual function of AUG.
8. Why is cow dung used in generation of biogas?

SECTION 'B'

9. How is male gamete are transferred to the site of fertilization in?
   (i) Algae (ii) Flowering plants
10. Corpus luteum in pregnancy has a long life. However, if fertilization does not take place, it remain active only for 10-12 days. Why?
11. In a dihybrid cross, white eyed, yellow bodied female *Drosophila* crossed with red eyed, brown bodied male *Drosophila*, produced in F_2-gemeration are 1.3% recombinant and 98.7% progeny with parental type combinations. This observation of Morgan deviated from Mendelian F_2 phenotypic dihybrid ratio. Explain, giving reasons Morgan's observations.
12. State the dual role of deoxyribonucleoside trilphosphates during DNA replication.
13. Write the scientific names of the causal organisms of elephantiasis and ringworm in human.
14. Why cannabinoids are banned in sports and games?

15. How is the bacterium *Thermus aquaticus* employed in recombinant DNA technology?
16. Write a short note on biopiracy highlighting the exploitation of developing countries by the developed countries.
17. How is ozone formed in the stratosphere?Why is it called good ozone?
18. What is *IUCN* Red list? Give any two uses of the list.

Or

(a) Explain how over exploitation is a cause of loss of biodiversity.

(b) What are the major causes of biodiversity losses in a geographical region?

SECTION 'C'

19. Write the two major function each of testes and ovaries.
20. We see advertisements like 'Saheli' as a method of family planning:

(i) What is 'Saheli'?

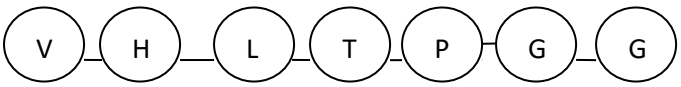
(ii) What is the principle behind using it as a method to control population?

(iii) How will you convince people who say it is religious wrong to use them to avoid pregnancy? Mention its advantages.

21. (i) How does the Hardy-Weinberg's expression ($p^2 + 2pq + q^2 = 1$) explain that genetic equilibrium is maintained in a population?

(ii) Name the scientist who experimentally confirmed the Oparin-Haldane theory of the origin of life.

22. A relevant portion of β- chain of haemoglobin of a normal human is given below:



The codon for the sixth amino acid is GAG. The sixth codon GAG mutate to GAA as result of mutation 'A' and into GUG as a result of mutation 'B'. haemoglobin structure did not change as a result of mutation 'A', where a haemoglobin structure changed because of mutation 'B' leading to sickle-shaped RBCs. Explain giving reason how could mutation 'B' change the haemoglobin structure and not mutation 'A'.

23. Now-a-days capsules of *Spirulina* are used as food supplements. Do you recommend the use of these capsules. Why?
24. Identify A,B,C, D,E and F in the table given below:

Organism	Bioactive Molecule	Uses
Monascus perpuresus	A	B
C	D	Antibiotic
E	Cyclosorin A	F

25. Diagrammatically represent the experimental steps cloning and expressing a human gene(say the gene for growth hormone) into a bacterium like E.coli.
26. Write important features of a sedimentary cycle in an ecosystem.

27. What do you mean by global warming? How can it be prevented?

OR

Explain 'rivet popper hypothesis',Name the ecologist, who proposed it?

SECTION 'C'

28. (a) When we pass by a small pond/lake or even a canal, it is a sight of beautiful mauve coloured flowers of water hyacinth, the plant which completely covers the water surface. It is for these beautiful flowers that this plant was introduced into India. But, now we talk about the harm it has caused to our ecosystems and water ways.

(i) Write the scientific name of this plant.

(ii) How has it become a menace to be denoted as 'Terror of Bengal'?

(b) What is sewage? How it can be treated before it is released into water-bodies?

OR

(a) Draw a labeled diagram of sectional view of human ovary showing different stages of oogenesis.

(b) What would be the consequence of failure of the electrostatic precipitator of a thermal plant?

29. Inheritance patterns of flower colour in garden pea plant and snapdragon differ. Why is the difference observed? Explain the difference with the help of cross in their inheritance patterns.

OR

(i) Write what DNA replication refers to.

(ii) State the properties of DNA replication model.

(iii) List any three enzymes involved in the process along with their function.

30. (a) Aditya participated in group discussion in his school on 'The ill effects of Tobacco on Human Health'. In the evening, he goes with his family for dinner and insists on sitting in the 'non-somking area' to which his father (who is a heavy smoker) object.

(i) in this situation, who wins your support-Aditya's concern for health and environment or his father's objection. Justify giving two reason.

(b) Differentiate between a Template strand and a Coding strand of DNA.

OR

(a) Unambiguous, Universal and degenerate are some of the terms used for the genetic code. Explain the salient features of each of them.

(b) A person is suffering from ringworm disease. Mention the pathogen and the part of the human body affected. Gove the symptoms of the disease along with the mode of transmission.

ATOMIC ENERGY CENTRAL SCHOOL NO.4, Rawatbhata

Confidence Test-II (2017-18)

Time: 03 Hrs Class XII, Computer Science MM: 70

General Instruction :

1. *All questions are compulsory.*
2. *Programming language : C++*

Q1. Answer the following questions:

a) Name the header file(s) that shall be needed for successful Compilation of the following C++ code. (1)

```
void main()
 {
        char string [10];
        gets(string);
        srtcat(string,"MLPN");
        puts(string);
 }
```

b) Rewrite the following program after removing the syntax error(s) if any. Underline each correction. (2)

```
#include <iostream.h>
     class Train
      {
        int trainnumber;
        char TrainName[25];
        public:

        void Add()
        {
          cin >> trainnumber;
          gets(TrainName);
        }

       void display()
        {
          cout<<trainnumber <<":"<<TrainName<<end;
        }
```

```
};

void main()
{
   Train T;
   Add.T();
   display.T();
}
```

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

```
#include<iostream.h>
int  m = 10 ;
void pass (int & a , int b , int & c)
{
 int m = 4;
c + = m ;
a * = :: m ;
}
int main()
{
 int p = 1, m  = 2 ;
 pass (p , :: m, m) ;
 cout << m << ':' << p <<  ':'  <<:: m ;
       cout << endl;
 pass (:: m , p, m) ;
 cout << m << ':' << p <<  ':'  <<:: m ;

}
```

d) What will be the output of the following code segment ? 2

```
#include<iostream.h>
#include<stdlib.h>
const int LOW=25;
void main()
{    randomize();
 int POINT=5, Number;
 for(int I=1;I<=4;I++)
 {
     Number=LOW+random(POINT);
```

```
        cout<<Number<<":" <<endl;

        POINT--;
    }
    }
```

(i) 29:26:25:28:

(ii) 24:28:25:26:

(iii) 29:26:24:28:

(iv) 29:28:25:26:

e) Find the output of the following code. 3

```
#include<iostream.h>
int find ( int P )
{
if ( P>0 )
 return P * 10 ;
else
 return P +12 ;
}
void Design ( char M , int B = 2 )
{
for ( int C = 0 ; C < B ; C++ )
cout <<find( C ) << M ;
cout << endl ;
}
int main( )
{
Design( '*' ) ;
Design( '$' , 4 ) ;
Design( '%', 3) ;
return0 ;
}
```

f) How you will declare a Character Constant and a String Constant in C++ give example of each? 2

Q2 Answer the following questions:

a) Illustrate the concept of function overloading with the help of example. 2

b) Answer the questions (i) and (iv) after going through the following program: 4

```
class Book
```

```
{
   char Book_Name[20];
   char Author[20];
   int pages;
  public:
      void reading();
      void display();
};
class Textbook:private book
{
   int chapters;
   int examples;
    protected:
      int std;
   public:
      void readingTextbook();
      void DisplayTextbook();
};
class Computerbook:public Textbook
{
   char content[20];

 public:
     void readingCSBook();
     void DisplayCSBook();
}
```

(i) Name the members, which can be accessed from the member function of class ComputerBook.

(ii) Name the member, which can be accessed by an object by an object of class Textbook.

(iii) Name the members, which can be accessed by an object of class ComputerBook.

(iv) What will be the size of an object (in bytes) of class Computer Book.

c) Define a class bank to represent the bank account of a customer with the following specifications: 4

private members:

- name of the depositor char (20)
- account no int
- type of account (s for saving, c for current account) char

- balance amount (float)

public members:-

- initial( ) to initialize data members
- deposit( ) to deposit money
- withdraw( ) for withdraw of money. Money can be withdrawn if minimum balance > = 1000
- display( ) to display data members

d) In the following program, find the correct possible output from the given options 2

```
#include <iostream.h>
#include <stdlib.h>
void main()
{
   randomize();
   char color[][20] = ["White","Green","Blue","Yellow"];
   int paint;
   for(int i=0;i<=2;i++)
   {
      paint = random(2) + 1;
      cout<<color[paint]<<";";
   }
}
```

Output:

(i) Blue : Green : Yellow

(ii) White : Blue : Green

(iii) Blue : White : Yellow

(iv) White : Blue : Yellow

Q3 Answer the following questions:

a) Write a function in C++ which accepts an integer array and its size as arguments and find the sum of all the elements which are fully divisible by 3 and 5. Example: if an array of five elements initially contains the element as : 3

3,5,1,15,25,30

The output will be : 45

b) An array MAT [20][10] is stored in the memory along the column with each of the elements occupying 4 bytes. Find out the base address and address of elements MAT [10][5], if an element MAT[5][7] is stored at the memory location 1000. 3

c) Write a function in C++ to delete a node containing employee information from a dynamically allocated stack to employee implemented with the help of the following

structure :

```
struct Emp
{   int EmpId;
   char Name[25];
   Emp *Next;
        }
```

d) Evaluate the following postfix expression E given below; show the contents of the stack during the evaluation. E=20, 6, 2, ^,10,4,%,-,+ 2

e) Write a function in C++ to find the sum of diagonal elements of a two dimensional integer array with 5 ROWS and 5 COLUMNS. 2

Q4 Answer the following questions:

a) Observe the program segment given below carefully, and answer the question that follows: 1

```
class Candidate
 {
int Id;  //Candidate's Id
char Name[20];   // Candidate's Name
float Score;        // Candidate's Score

public:
void Enrollment();
void ShowData();
void Marks();     //Function to change Score
long R_id() {return Aid;}
 };
void Update(int Id)

 {
fstream File;
File.open("AllData.DAT",ios::binary|ios::in|ios::out);
      candidate cn;
int Record=0,Found=0;
while (!Found&&File.read((char*)&cn, sizeof(cn)))
{
  if (Id==A.R_id())
    {
     cout<<"Enter  Marks…";
     cin>>A.Marks();
```

```
            _____ //statement 1
            _____ //statement 2
            Found = 1;
          }
Record++;
}

if(Found==1)
 cout<<"Record Updated";
File.close();
          }
```

Write the Statement1 to position the File Pointer at the beginning of the Record for which the Candidate's Id matches with the argument passed, and Statement2 to write the updated Record at that position.

b) Write a function in C++ to read the content of a text file "News.TXT" and display all those lines which are either starting with 'S' or starting with 'W'. 2

c) A binary file "ADDRESS.DAT", containing records of the following class colony type : 3

```
class colony
 {
     char c_no[10];
     char c_name[40];
     long no_of_ppl;
         public:
     void getdata()
     {
             gets(c_no); gets(c_name); ciin>>no_of_ppl;
     }
     void showdata()
     {
             cout<<"Colony Number : "<<c_no;
             cout<<"Colony Name     : "<<c_name;
             cout<<" No. of people   : "<<no_of_ppl;
     }
            char * returnname()
     {
               return c_name;
             }
```

};

Write a function showaddress()in C++ that would read contents of file "ADDRESS.DAT" and display the details of those colonies where number of people are greater than 1000.

Q5 Answer the following questions:

a) What do you understand by Domain of column & Cardinality of a table? 2

b) Consider the following tables Stationery and Consumer :

Table: Stationery

S_ID	StationeryName	Company	Price
DP01	Dot Pen	ABC	10
PL02	Pencil	XYZ	6
ER05	Eraser	XYZ	7
PL01	Pencil	CAM	5
GP02	Gel Pen	ABC	15

Table: Consumer

C_ID	ConsumerName	Address	S_ID
01	Good Learner	Delhi	PL01
06	Write Well	Mumbai	GP02
12	Topper	Delhi	DP01
15	Write & Draw	Delhi	PL02
16	Motivation	Banglore	PL01

i) Write SQL commands for the statement (i) to (iv). 4

(i) To display the details of those consumers whose Address is Delhi.

(ii) To display the details of Stationery whose Price is in the range of 8 to 15. (Both Value included)

(iii) To display the ConsumerName, Address from Table Consumer, and Company and Price from table Stationery, with their corresponding matching S_ID.

(iv) To increase the Price of all Stationery by 2.

ii) Write output for SQL queries (v) to (viii): 2

(v) SELECT DISTINCT Address FROM Consumer;

(vi) SELECT Company, MAX(Price), MIN(Price), COUNT(*) from Stationery GROUP BY Company;

(vii) SELECT Consumer.ConsumerName, Stationery.StationeryName, Stationery.Price FROM Stationery, Consumer WHERE Consumer.S_ID=Stationery.S_ID;

(viii) Select StationeryName, Price*3 From Stationery;

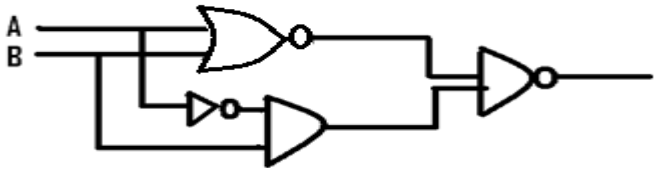
Q6 Answer the following questions:

a) State and prove De Morgan's theorem. 2

b) Write the POS form of the function F given in the truth table below and simplify it: 2

X	Y	Z	F
0	0	0	1
0	0	1	0
0	1	0	0
0	1	1	1
1	0	0	1
1	0	1	1
1	1	0	0
1	1	1	0

c) Write the Boolean expression for the logic circuit : 1



d) Obtain the simplified form of Boolean Expression using K'Map: 3

F(x , y , z, w) = $\sum$ (0,2,4,5,8,9,12,13,15)

Q7 Answer the following questions:

a) Differentiate between gateway and bridge. 1

b) Write the full forms of the following: 1

(i) HTML (ii) FSF

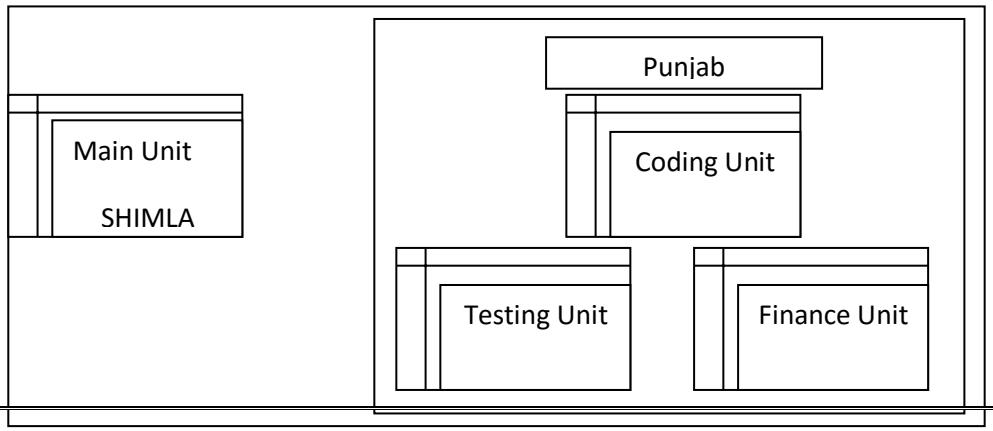
c) Which of following units measures the speed with which data can be transmitted from one node to another node of a network? 1

(i) KMph (ii)Mbps (iii) MGps

d) Which protocol is used for sending and receiving emails? 1

e) What do you understand by cloud computing? Briefly explain its characteristics? 2

f) "AYS Software Inc." is planning to expand their network in India, starting with two cities in India to provide Software services. The company has planned to set up their main office units in Punjab at three locations and have named their offices as "Coding Unit", "Testing Unit" and "Finance Unit". The company has its corporate unit in Shimla. A rough layout of the same is as follows: 4



Approximate distances between these Units are as follows:

From	To	Distance
Coding Unit	Testing Unit	16 KM
Coding Unit	Finance Unit	50 Mtr
Finance Unit	Testing Unit	10KM

In continuation of above,company experts have planned to install following number of computers in each of office units:

Coding Unit	100
Testing Unit	70
Finance Unit	10

i) Suggest the kind of network required (out of LAN,MAN,WAN) for connecting each of the following office units:

- Coding Unit and Testing Unit
- Coding Unit and Finance Unit

ii) Which one of the following devices will you suggest for connecting all the computers within each of their office units?

Switch/Hub, Modem, Bluetooth

iii) Which of the following communication media, will you suggest to be procured by the company for connecting their local offices in Punjab for very effective (High Speed) communication?

Coaxial cable, Optical fiber, Wi Fi network

iv) Suggest a cable/wiring layout for connecting the company's local office units located in Punja and Main Unit.

ATOMIC ENERGY CENTRAL SCHOOL No 4,RAWATBHATA

Confidence Examination II -2017-18

Max Time: 03 hrs. Class: XII, Physical Education MM: 70

Instructions:

- All questions are compulsory. Manage the given word limit as per marks allotted.
- Question paper consists of 26 questions.
- 1 marks questions must be answered in approximately 10-20 words.
- 3 marks questions must be answered in approximately 30-50 words.
- 5 marks questions must be answered in approximately 75-100 words.

QUESTIONS

1. What is planning in games and sports? 1
2. Write down the objectives of adventure sports. 1
3. What do you understand by disorders ? 1
4. What is good posture? 1
5. What do you understand by triad? 1
6. What do you understand by life style diseases. 1
7. Your grandfather has to attend to the door bells and telephonic calls time and again,name the test appropriate for him to develop the ability. 1
8. Write down about asthma and suggest two measure to cure it. 1
9. Describe slow continuous method to develop endurance. 1
10. What is projectile , Write down its applications in the field of sports. 1
11. Explain , how self esteem and body image are related to each other. 1
12. Describe any three qualities developed through adventure sports. 3
13. What do you understand by food myths? 3
14. What do understand by eating disorder? Explain its various types. 3
15. What do you understand by motor developments in children. 3
16. What is knock out tournament ? Describe any two demerits of it. 3
17. Draw fixture for five teams on league basis . 3
18. Describe any three physiological factors determining speed. 3
19. Describe the consideration in meals intake which should be taken before,during & after the competition 3
20. Draw fixture for 19 teams on knock out basis. Explain the procedure in detail. 5
21. What is circuit training? Draw and suggest ten stations to develop general strength. 5
22. Gender belief still exists in the society in this world even when so many changes have occurred due to education. Discus. 5
23. Suggest methods to develop reaction speed. 5
24. Explain personality. Describe the role of sports in developing the personality. 5
25. What do you understand by sports injuries? Write down classification & methods to prevent of sports injuries. 5
26. What do you understand by sports training? Describe methods to develop various kinds of strength. 5
