

AGRA PUBLIC SCHOOL 8-10 OLD VIJAY NAGAR
SESSION-2020-2021
ASSIGNMENT-1
CLASS-XII

ENGLISH CORE

Assignment-1

Q 1. *Read the following passage carefully and answer the questions that follow.*

ELECTRONICJUNKMAIL

You would have seen an increasing amount of "junk mail" showing up in your e-mail box. The so-called harmless activities of a small number of people are increasingly becoming a serious problem for the Internet. Spam is the flooding of the Internet with many copies of the same message, in an attempt to force the message on people who would not otherwise choose to receive it. Spam is basically electronic junk mail or junk newsgroup postings. It is sometimes confused with any unsolicited e-mail. But an old friend may also find your e-mail address on the Net and send you a message but this could hardly be called spam, even though it is unsolicited. Real spam is generally e-mail advertising for some product sent to a mailing list or newsgroup. In addition to wasting people's time with unwanted e-mail, spam also eats up a lot of network bandwidth. There are many organizations and individuals who have taken it upon themselves to fight spam with a variety of techniques. The problem is that because the Internet is public, there is very little that can be done to prevent spam, just as it is impossible to prevent junk mail. One of the most recent examples of large-scale spamming was the hoax Ericsson e-mail about a free give away, something most people just cannot resist. The letter begins with a claim that since Nokia is giving away telephones, Ericsson will respond by giving away brand new WAP phone. But the recipient must forward the letter to a minimum of 20 people to receive the phone. The letter is signed by Anna Swelund, Executive Promotion Manager for Ericsson Marketing. It was later discovered that there was no such person at Ericsson.

There are numerous instances of these e-mails being used maliciously by someone who has a grudge against an ex-spouse, a public official, a former teacher or someone else with an e-mail address. The person mentioned in the e-mail ends up with thousands of requests from people looking for confirmation that the e-mail—which they actually had nothing to do with—is true. Spamming works on our own greed to receive freebies. You are instructed by a total stranger (or a well meaning but not very bright friend) to forward a message you know nothing about, except for the fact that may be a friend passed it along to you and about 90 of their-other very -close friends. Very often the victim can receive so many e-mails (and sometimes faxes and phone calls in the more malicious cases) that they have to get a new e-mail box or phone number—thereby ruining established personal and professional communication channels, which was the original intent of the sender. Most spam is commercial advertising, often for dubious products, get-rich-quick schemes, or quasi-legal services. It costs the sender very little to send—most of the costs are paid for by the recipient or the carriers rather than by the sender. There are two main types of spam, and they have different effects on internet users. Cancellable use-net spam is a single message sent to 20 or more use-net newsgroups. Usenet spam is aimed at "lurkers", people who read newsgroups but rarely or never post and give their address away. Usenet spare robs users of the utility of the newsgroups by overwhelming them with a barrage of advertising or other irrelevant posts. Furthermore, use-net spam subverts the ability of system administrators and owners to manage the topics they accept on their systems. E-mail spam targets individual users with direct mail messages. They typically cost users money out-of-pocket to receive. Most of us read or receive our mail through dial-up accounts while

the meter is running, so to speak. There is not much really that can be done to protect yourself except that you can ensure your relative safety by creating internet e-mail accounts like Hotmail or Yahoo which can be easily and frequently changed. Further, these accounts also generally offer the option of blocking senders from whom you get spam and you can also opt to block e-mail which has been copied to more than 20 people. One can also keep oneself informed about spammers through the Blacklist of Internet Advertisers, a popular report that describes the offending activities of spammers that routinely distribute large mailings via e-mail or post unwelcome advertising on newsgroups. You can also visit www.spam.abuse.net. Another organization devoted to countering the destructive effects of spam is MAPS or the Mail Abuse Prevention System. If an offending spammer cannot be shut down, the spammer's ISP may contact MAPS with the subnet addresses allocated to the spammer so those specific addresses may be used instead of the IP address of the entire ISP.

Q.: Choose the most appropriate option:

(a) E-mail spam victims.....

(i) group (ii) individuals (iii) males (iv) females

(b) Usenet spam deprives the users of

(i) the utility of the newsgroups (ii) net facility

(iii) actual information (iv) none of the above

(c) Name the organisation that counters the devastating efforts of spam

(i) MASP (ii) MAPS (iii) MPAS (iv) MSAP

(d) Who has to pay most of the costs of spam? .

(i) senders (ii) receivers (iii) carriers (iv) either (ii) or (iii)

Answer the following questions briefly.

(e) What is spam? What problems are caused to net surfers by spamming?

(f) Give an examples of recent large scale spamming.

(g) How does spamming work? Whom does it hit-sender or receiver?

(h) What are the two main types of spams and their effects on Internet users?

(i) How can one protect oneself against spam? Give to examples.

(j) Who uses e-mail spam frequently?

(k) Find words in the passage similar in meaning as:

(a) a mischievous trick played on somebody for a joke (lines 10 to 20)

(b) disreputable or risky (lines 31 to 40).

Q2. Read the passage given below:

1. "We become brave by doing brave acts," observed Aristotle in the *Nicomachean Ethics*. Dispositions of character, virtues and vices, are progressively fixed in us through practice. Thus by being habituated to despise things that are terrible and to stand our ground against them we become brave, and it is when we have become so that we shall be most able to stand our ground against them.
2. Standing ground against threatening things is not to be confused with fearlessness however. Being afraid is a perfectly appropriate emotion when confronted with fearful things. The great American novelist Herman Melville makes the Aristotelian point beautifully in a telling passage in *Moby-Dick*, where Starbuck, the chief mate of the *Pequod*, first addresses the crew. "I will have no man in my boat, said Starbucks 'who is not afraid of a whale.' By this, he seemed to mean, not only that the most reliable and useful courage was that which arises from the fair estimation of the encountered peril and that an utterly fearless man is a far more dangerous comrade than a coward."
3. The brave person is not one who is never afraid. That is rather the description of a rash or reckless person, someone who may be more harm than help in an emergency. It is hard to "educate" such a person on the spot. The coward, on the other hand, the one who characteristically lacks confidence and is disposed to be overly fearful, may yet be susceptible to the encouragement of example.
4. The infectious nature of strikingly courageous behaviour on the part of one person can inspire—and also in part can shame—a whole group. That was one key to the kind of courage inspired by Horatius at the bridge in ancient Rome and by Henry V at Agincourt. It was one key to the kind of courage displayed by those who silently suffered abuse when, they joined ranks with Gandhi and Martin Luther King Jr., in acts of non-violent protest directed at rousing the public conscience against injustice.
5. Another key to their success, of course, was reason: practical reason delivered with the kind of eloquence that is informed by a real command of one's cultural heritage and that steels the will to take intelligent action. The mere-inclination to do the right thing is not in itself enough. We have to know what the right thing to do is. We need wisdom—often the wisdom of a wise leader—to give our courage determinate form, to give it intelligent direction. And we need the will, the motivating power that inspiring leaders can sometimes help us discover within ourselves, even when we are unable to find it readily on our own.
6. If Aristotle, is right—and I think that he is—then courage is a settled disposition to feel appropriate degrees of fear and confidence in challenging situations (what is "appropriate" varying a good deal with the particular circumstances). It is also a settled disposition to stand one's ground, to advance or to retreat as wisdom dictates. Before such dispositions become settled, however, they need to be established in the first place. And that means practice; which in turn means facing fears and taking stands in advance of any settled disposition to do so; acting bravely when we don't really feel brave.
7. Fear of the dark is almost universal among young children, and it provides relatively safe opportunities for first lessons in courage. In families, older siblings are greatly assisted in cultivating their own dispositions in this respect by putting up a brave front before their younger brothers or sisters. "You see? There's really nothing to be afraid of." This is excellent practice, and a fine place to begin. Occasions for being brave on behalf of others—for standing by them in challenging circumstances are occasions for becoming brave ourselves; that is, for learning how to handle our own confidence and fear, for figuring out the right thing to do, and for mustering the will to do it.

8. So, daring to do what is not good and beneficial for all is far more insidious than not daring to do something for a right cause. Naturally, bravery well nurtured and backed by moral courage alone is exemplary, and so, should be promoted.

On the basis of your reading of the passage, answer the following questions by choosing the best of the given options.

(a) A person who never gets afraid is called

- (i) brave (ii) valiant (iii) reckless (iv) aware

(b) The fundamental virtue to be brave is to

- (i) be logical (ii) be violent (iii) be firm (iv) Both (i) and (iii)

(c) One should promote bravery which is

- (i) well nurtured (ii) supported by deific virtues
(iii) backed by moral values (iv) All of the above

• Based on your understanding of the passage, answer the following questions:

(d) Explain: 'We become brave by doing brave act?'

(e) When is 'being afraid' an appropriate emotion?

(f) How is a brave person different from (i) a reckless person? (ii) a coward?

(g) What was special about the courage that Gandhiji or Horatius had?

(h) The mere inclination to do the right is not enough. What else is required for success?

(i) Find words from the passage which mean the opposite of each of the following:

(i) Depress (para 4) (ii) Incorrect (para 5)

Q3. As Student Editor, draft a notice in not more than 50 words for your school notice board inviting articles from the students for your school magazine. You are Rohan/Rupini of Vasant Vihar School, Pune.

4. You are Anand/Anita of 14, Model Town, Delhi. You have seen an advertisement in The Hindu for the post of Chief Chef in a 5-Star Hotel. Apply for the job with complete biodata. Write in 100-120 words.

5. Write a letter to a newspaper complaining against reckless motor driving. You are Bibhor/Bindu living at 1145-A, Vasundhara Enclave, New Delhi.

6. You are Jay/Jaya, School Pupil under of Shyamala Memorial Hall, Trivandrum. Write a speech in 130-150 words that you would deliver in the school assembly during the vigilance week on how to eradicate corruption from both 'private and public life.

7. You are Shekhar/Tripta a student of A.P. Public School. Principles of two schools from Bhutan visited your school as part of a cultural exchange programme. Students of the school put up a cultural show in their honour. Write a report about it for your school magazine.
8. You are Keshav/Karuna, a social worker and counsellor. You are concerned about senior class students ignoring sports activities owing to the pressure of examination and coaching classes. Write an article in 130-150 words to be published in a local daily on how sports not only promote physical fitness but also influence our scholastic achievements.
9. Researchers have proved that women are better than men at juggling more than one task. They also approach multiple problems more methodically and logically. Justify the above quoted words in your article. You are Ameeta Chatterjee. Do not exceed 150 words.
10. Good citizens are the greatest asset of any country. Most of us display an attitude of indifference towards our responsibilities resulting in damage to environment, loss of public property, etc. Write an article in 150-200 words on 'Responsibilities of a Good Citizen'. You are Gopal/Gopika.
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PHYSICS

Assignment-1

ELECTRIC CHARGE

1. The tyres of cars, Buses, trucks and aero planes are made of a special material to avoid sparking. Explain why?
2. State Gauss' theorem in electrostatics. Using this theorem derive the expression for the electric field intensity at any point outside and (i) inside of the uniformly charged thin spherical shell
(ii) Uniformly charged sheet.
3. Why electric field lines don't form closed loop.
4. How does the force between two point charges change if the dielectric constant of the medium in which they are kept increases? Explain.
5. A piece of paper when brought near a charged body is attracted towards it but after touching the body, it falls away. Why?
6. What is the direction of the electric field due to an electric dipole at a point on its (i) axial line, (ii) equatorial line?
7. S_1 and S_2 are two hollow concentric spheres enclosing charges Q and $2Q$ respectively as shown in the figure (i) What is the ratio of the electric flux through S_1 and S_2 ? (ii) How will the electric flux through the sphere S_1 change, if a medium of dielectric constant 5 is introduced in the space inside S_1 in place of air?
8. Derive the expression for electric field at a point on axial line of dipole.
9. Define electric dipole moment. Derive an expression for the energy stored (Potential Energy) in a dipole in a uniform electric field. Discuss stable and unstable conditions also.
10. State Coulomb's law in vector form. Derive an expression for the torque on an electric dipole in a uniform electric field.

11. The electrostatic force on a small sphere of charge $0.4\ \mu\text{C}$ in air is $0.2\ \text{N}$.
A) What is the distance between the two spheres?
B) What is the force on the second sphere due to the first?
12. What happens when an electric dipole is placed in a uniform electric field at some angle?
13. What are the conditions for stable and unstable equilibrium for a dipole placed in a uniform electric field?
14. Name the device which is used to detect and find the nature of charge.
15. What is the net charge on an electric dipole?
16. Is the electric field due to an electric dipole zero?
17. Why do electric field lines not cross each other?
18. Define electric field with unit.
19. What are the methods of charging a body and write down the differences between them.
20. What do you understand by the quantization of charge. Does the mass of the body change when it gets charged?
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CHEMISTRY

Assignment-1

SOLUTION

- Q.1. Define mole fraction.
- Q.2. What is the similarity between Raoult's law and Henry's law?
- Q.3. What are isotonic solutions?
- Q.4. How does the molarity of a solution change with temperature?
- Q.5. Write about positive and negative deviation.
- Q.6. Define an ideal solution and write one of its characteristics.
- Q.7. Differentiate between molarity, molality and normality.
- Q.8. State Henry's law. Write its one application. What is the effect of temperature on the solubility of gases in a liquid?
- Q.9. Define the following term
- | | | |
|---------------|----------------------|----------------------------|
| (a) Azeotrope | (b) Osmotic pressure | (c) Colligative properties |
|---------------|----------------------|----------------------------|
- Q.10. What is an anti-freeze?
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BIOLOGY
Assignment-1
CHAPTERS 1 &2

Q1 Why do intermodal segments of sugarcane fail to propagate vegetatively even when they are in contact with damp soil?

Q2 Why are non-albuminous(exalbuminous) seeds so called?

Q3 Name the part of the flower that contributes to fruit formation in strawberry and guava respectively.

Q4 Cucurbita and Papaya plants bear staminate and pistillate flowers.Mention the categories they are put separately on the basis of the type of flowers they bear.

Q5 Explain how geitonogamy is functional similar to cross pollination and genetically similar to self pollination.

Q6 Mention the reasons of differences in ploidy of zygote and endosperm nucleus in an angiosperm.

Q7 Why does the zygote begin to divide only after the division of primary endosperm cell?

Q8 Explain the steps that ensure cross pollination in an autogamous flower.

Q9 Differentiate between two cells enclosed in a mature male gametophyte of an angiosperm.

Q10 Draw a longitudinal section of a post pollinated embryo sac.Label filiform apparatus,chalazal end,antipodals,male gamete &secondary nucleus.

Q11 Mention any four categories adopted by flowering plants to prevent self-pollination

Q12 Draw a diagrammatic sectional view of a mature anatropous ovule and label the following parts in it

- (a) That develops into seed coat
- (b) That develops into an embryo after fertilization
- (c) That develops into an endosperm in an albuminous seed
- (d) Through which the pollen tube gains entry into the embryo sac
- (e) That attaches the ovule to the placenta
- (f) Describe the characteristics of wind pollinated flowers.

Q13 (a) What is apomixis?Describe the several ways of development of apomictic seeds.
(b) What is the importance of apomictic seeds.

Q14 What is meant by emasculation? When and why does a plant breeder employ this technique?

PHYSICAL EDUCATION

Assignment-1

PLANNING IN SPORTS

- Q.1 What are the objectives of the planning or explain the objectives of the planning?
- Q.2 What is planning? Write any four objective of planning
- Q.3 Discuss any three objectives of planning with suitable examples from sports.
- Q.4 Write down the role of the various committees post tournament
- Q.5. Write down the role of the various committees before a tournament.
- Q.6 Describe the responsibilities of any three committees before Tournament.
- Q.7 Describe the responsibilities of organizing committee, Publicity committee, grounds & equipment committee during the Tournament.
- Q.8 Describe the responsibility of any three committees during Tournament.
- Q.9 Enlist the name of post tournament committees?
- Q.10. What are the advantage & disadvantages of league or round robin tournament.

OR

Write down the merits & demerits of the league tournament.

- Q.11 Describe the merits & demerits of knock out Tournaments.
 - Q.12 Describe the merits & Demerits of league Tournament.
 - Q.13 Differentiate Between knock out & round robin tournament
 - Q.14. Define tournament and explain its types?
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MATHEMATICS

1. If a matrix has 28 elements, what are the possible orders it can have? What if it has 13 elements?

2. In the matrix $A = \begin{bmatrix} a & 1 & x \\ 2 & \sqrt{3} & x^2 - y \\ 0 & 5 & \frac{-2}{5} \end{bmatrix}$, write:

(i) The order of the matrix A (ii) The number of elements (iii) Write elements a_{23} , a_{31} , a_{12}

3. Construct a 2×2 matrix where

(i) $a_{ij} = \frac{(i-2j)^2}{2}$ (ii) $a_{ij} = |-2i+3j|$

4. Construct a 3×2 matrix whose elements are given by $a_{ij} = e^{ix} \sin jx$.

5. Find values of a and b if $A = B$, where $A = \begin{bmatrix} a+4 & 3b \\ 8 & -6 \end{bmatrix}$, $B = \begin{bmatrix} 2a+2 & b^2+2 \\ 8 & b^2-5b \end{bmatrix}$.

6. If possible, find the sum of the matrices A and B, where $A = \begin{bmatrix} \sqrt{3} & 1 \\ 2 & 3 \end{bmatrix}$, and $B = \begin{bmatrix} x & y & z \\ a & b & c \end{bmatrix}$

7. If $X = \begin{bmatrix} 3 & 1 & 1 \\ 5 & 2 & 3 \end{bmatrix}$ and $Y = \begin{bmatrix} 2 & 1 & 1 \\ 7 & 2 & 4 \end{bmatrix}$, find

(i) $X + Y$ (ii) $2X - 3Y$
(iii) A matrix Z such that $X + Y + Z$ is a zero matrix.

8. Find non-zero values of x satisfying the matrix equation: $x \begin{bmatrix} 2x & 2 \\ 3 & x \end{bmatrix} + 2 \begin{bmatrix} 8 & 5x \\ 4 & 4x \end{bmatrix} = 2 \begin{bmatrix} x^2+8 & 24 \\ 10 & 6x \end{bmatrix}$.

9. If $A = \begin{bmatrix} 0 & 1 \\ 1 & 1 \end{bmatrix}$ and $B = \begin{bmatrix} 0 & 1 \\ 1 & 0 \end{bmatrix}$, show that $(A + B)(A - B) \neq A^2 - B^2$.

10. Find the value of x if $\begin{bmatrix} 1 & x & 1 \end{bmatrix} \begin{bmatrix} 1 & 3 & 2 \\ 2 & 5 & 1 \\ 15 & 3 & 2 \end{bmatrix} \begin{bmatrix} 1 \\ 2 \\ x \end{bmatrix} = 0$.

11. Show that $A = \begin{bmatrix} 5 & 3 \\ 1 & 2 \end{bmatrix}$ satisfies the equation $A^2 - 3A - 7I = O$ and hence find A^{-1} .

12. Find the matrix A satisfying the matrix equation: $\begin{bmatrix} 2 & 1 \\ 3 & 2 \end{bmatrix} A \begin{bmatrix} 3 & 2 \\ 5 & 3 \end{bmatrix} = \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$

Long Answer (L.A.)

13. Find x, y, z if $A = \begin{bmatrix} 0 & 2y & z \\ x & y & -z \\ x & -y & z \end{bmatrix}$ satisfies $A' = A^{-1}$.

14. If possible, using elementary row transformations, find the inverse of the following matrices

$$(i) \begin{bmatrix} 2 & 1 & 3 \\ 5 & 3 & 1 \\ 3 & 2 & 3 \end{bmatrix} \quad (ii) \begin{bmatrix} 2 & 3 & 3 \\ 1 & 2 & 2 \\ 1 & 1 & 1 \end{bmatrix} \quad (iii) \begin{bmatrix} 2 & 0 & 1 \\ 5 & 1 & 0 \\ 0 & 1 & 3 \end{bmatrix}$$

15. Express the matrix $\begin{bmatrix} 2 & 3 & 1 \\ 1 & 1 & 2 \\ 4 & 1 & 2 \end{bmatrix}$ as the sum of a symmetric and a skew symmetric matrix.

Objective Type Questions

Choose the correct answer from the given four options in each of the Exercises 16 to 20.

16. The matrix $P = P = \begin{bmatrix} 0 & 0 & 4 \\ 0 & 4 & 0 \\ 4 & 0 & 0 \end{bmatrix}$ is a

- (A) square matrix (B) diagonal matrix
(C) unit matrix (D) none

17. Total number of possible matrices of order 3×3 with each entry 2 or 0 is

- (A) 9 (B) 27 (C) 81 (D) 512

18. If $\begin{bmatrix} 2x & y & 4x \\ 5x & 7 & 4x \end{bmatrix} = \begin{bmatrix} 7 & 7y & 13 \\ y & x & 6 \end{bmatrix}$, then the value of $x +$

- (A) $x = 3, y = 1$ (B) $x = 2, y = 3$
(C) $x = 2, y = 4$ (D) $x = 3, y = 3$

19. If $A = \frac{1}{\pi} \begin{bmatrix} \sin^{-1}(\pi x) & \tan^{-1} \frac{x}{\pi} \\ \sin^{-1} \frac{x}{\pi} & \cot^{-1}(\pi x) \end{bmatrix}$, $B = \frac{1}{\pi} \begin{bmatrix} -\cos^{-1}(\pi x) & \tan^{-1} \frac{x}{\pi} \\ \sin^{-1} \frac{x}{\pi} & -\tan^{-1}(\pi x) \end{bmatrix}$, then $A - B$ is equal to

- (A) I (B) O (C) 2I (D) $\frac{1}{2}I$

20. If A and B are two matrices of the order $3 \times m$ and $3 \times n$, respectively, and $m = n$, then the order of matrix $(5A - 2B)$ is

- (A) $m \times 3$ (B) 3×3 (C) $m \times n$ (D) $3 \times n$

Fill in the blanks in each of the Exercises 21–25.

21. _____ matrix is both symmetric and skew symmetric matrix.
22. Sum of two skew symmetric matrices is always _____ matrix.
23. The negative of a matrix is obtained by multiplying it by _____.
24. The product of any matrix by the scalar _____ is the null matrix.
25. A matrix which is not a square matrix is called a _____ matrix.

State Exercises 26 to 30 which of the following statements are True or False

26. A matrix denotes a number.

- 27. Matrices of any order can be added.
- 28. Two matrices are equal if they have same number of rows and same number of columns.
- 29. Matrices of different order can not be subtracted.
- 30. Matrix addition is associative as well as commutative.