

## WHAT IS THE INTERNET?

It stands for "internetworking," and represents how all telecommunication networks allow one the possibility to communicate with anyone else.



## INTERNET AND WWW



The word "internet" actually refers to all the hardware infrastructure present in the network. Such hardware includes computer systems, routers, cables, bridges, servers, cellular towers, satellites and other pieces, whereas the World Wide Web (WWW) is the collection of all information that is available on the internet. So, all text, images, audio, videos online – all this forms the www.

## INTERNET PROTOCOLS

Hypertext transfer protocol is what we use to view websites through a browser – that's what the http at the front of any Web address stands for. Protocols like these and dozens more create the framework within which all devices must operate to be part of the internet. Two of the most important protocols are the transmission control protocol (TCP) and the Internet protocol (IP).



## WHAT DO THESE PROTOCOLS DO?



At their most basic level, these protocols establish the rules for how information passes through the Internet. You've probably heard of IP addresses. These addresses follow the internet protocol. Computers use an IP address (internet protocol address) to identify each other. It's a bit like a postcode that is unique to each computer connected to the internet. An IP address is a set of numbers that might look like this: 195.188.87.10.

## WHAT IS DNS?

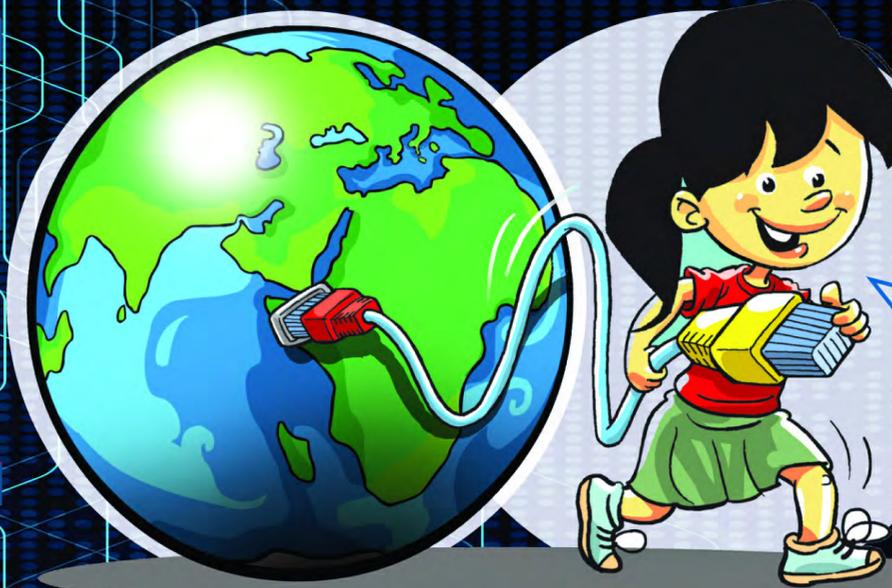
The domain name system (or DNS) converts human readable domain names (like: www.google.com) into Internet Protocol (IP) addresses (like: 173.194.39.78). Computers can only communicate using series of numbers, so Domain Name Systems (DNS) was developed as a sort of "phone book" that translates the domain you enter in your browser into a computer readable IP.



## SERVERS AND CLIENTS



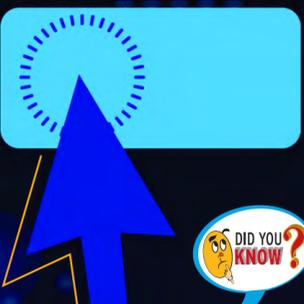
In the internet world, there are "servers" and there are "clients." Servers are machines that provide services to other machines and are connected directly to the internet. There are email servers, web servers, and data servers, and each has a static IP. Your home laptop is not a server. It's a client because it's connected indirectly to the internet through an internet service provider (or ISP), like Jio, Airtel, Vodafone etc. For example, to connect to the internet, you use Wi-fi, which is provided by an ISP. That ISP connects you to the internet, which connects you to the IP of the server whose data you wish to see (like Google.com).



**HEY FOLKS! I'M EXPLORIA.**  
WE CAN'T IMAGINE OUR LIVES WITHOUT THE INTERNET. BUT, HAVE YOU WONDERED HOW DOES INFORMATION MOVE AROUND THE INTERNET?

# HOW DOES THE INTERNET WORK?

- 1 AS OF OCTOBER 2018, THERE ARE MORE THAN 1.9 BILLION WEBSITES ON THE INTERNET
- 2 95 MILLION PHOTOS ARE UPLOADED ON INSTAGRAM EVERY DAY
- 3 85,000+ WEBSITES ARE HACKED DAILY
- 4 5,000 DOMAIN NAMES ARE REGISTERED EVERY HOUR
- 5 THE FIRST EVER EMAIL WAS SENT IN 1971
- 6 250 BILLION EMAILS ARE SENT OUT DAILY
- 7 THE WORLD'S FIRST WEBSITE (INFO.CERN.CH) IS STILL ONLINE
- 8 400 HOURS OF VIDEO CONTENTS ARE UPLOADED ON YOUTUBE EVERY MINUTE



According to anti-virus software firm McAfee, the electricity used to transmit the trillions of spam sent over the course of one year is equivalent to the amount of electricity needed to power more than two million homes.

## HOW DOES THE INFORMATION MOVE?



When an information (image, file or message) is being sent from one computer to another it is broken down into small bits of data called 'packets'. Each packet includes information about where the data is going to, where it is from and how to re-assemble it. For example, when you send an e-mail, it gets broken into packets before zooming across the internet. Phone calls over the internet also convert conversations into packets using the voice over internet protocol (VoIP). To ensure that information goes to the right place, servers look to send files to an IP address.

## IF PACKETS ARRIVE OUT OF ORDER

This happens when a packet sent later finds a quicker path to the destination than an earlier one. But the packet's header contains information about the packet's order relative to the message. The transport control protocol uses this info for reconstructing the message at the destination.

## IF THEY DON'T MAKE IT

The internet protocol makes no guarantee that packets will always arrive at their destinations. This typically happens when a router receives more packets than it can process. It has no option other than to drop some packets. However, the transport control protocol handles packet loss by performing re-transmissions. It does this by having the destination computer periodically send acknowledgement packets back to the source computer indicating how much of the message it has received and reconstructed. If the destination computer finds there are missing packets, it sends a request to the source computer asking it to resend the missing packets.

## WHAT IS A ROUTER?

A smart device that directs or routes information around the internet. When a data packet arrives the router reads the IP address information and sends the packet along the best route to its destination. The packet can be sent across the world through fibre optic cables under the sea or even by satellite.



## YES, DATA CAN TAKE MANY PATHS

Since networks are connected to multiple other networks, there's a whole web of connections stretching out around the globe. This means that those packets (small pieces of data sent between devices) can take multiple paths to get where they're going. In other words, even if a network between you and a website goes down, there's usually another path the data can take. The routers along the path use something called border gateway protocol or BGP, to communicate information about whether a network is down and the optimal path for data to take.

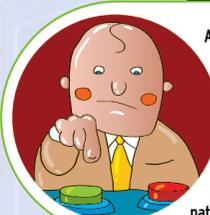
## FREQUENTLY ASKED QUESTIONS

### WHO OWNS INTERNET?



No single person or organisation controls the internet in its entirety. There are many organisations, corporations, governments, private citizens and service providers that own pieces of the infrastructure, but there is no one body that owns it all. There are, however, organisations that oversee and standardise what happens on the internet and assign IP addresses and domain names.

### CAN INTERNET BE SHUT?



Almost certainly not. Much of the infrastructure – the servers, cabling and satellites, and the ISPs that run them – is in private hands. A government might be able to mandate that ISPs in their territory be shut down, but people could still receive data through satellite links controlled by companies not answerable to that government. To extend that shutdown across national borders is barely conceivable.

### DOES INTERNET EMIT CO2?



One estimate suggests it takes a whopping 152 billion kilowatt-hours per year just to power the data centres that keep the net running. Add to that the energy used by all the computers and peripherals linked to it and the whole thing could be responsible for as much as 2 per cent of all human-made CO2 emissions, putting it on par with the aviation industry.

## Quiz

## FACT OR FICTION?

- 1 Former US vice-president Al Gore invented the internet. Fact / Fiction
- 2 More than half of the world's population of nearly 8 billion is using internet. Fact / Fiction
- 3 One of the most important predecessors of the internet was a network called NETLIX. It started in 1979 with a connection between Harvard and MIT. Fact / Fiction
- 4 The Samsung i5000, which came out in 1996, was the first cell phone with internet access. Fact / Fiction
- 5 The first widely used Web browser was called Mosaic, which was introduced in 1993. Fact / Fiction
- 6 If you forward this quiz to 10 of your friends in the next 10 minutes, Bill Gates will give you a free trip for two to Disney World! Fact / Fiction

### ANSWERS

1. Fiction. Computer scientists Vinton Cerf and Bob Kahn are credited with inventing the internet communication protocols we use today and the system referred to as the internet. They are recognised as "the fathers of the internet".
2. Fact. For the first time, more than half of the world's population of nearly 8 billion will be using the internet by the end of 2018, the United Nations telecommunication agency announced last year.
3. Fiction. The network was ARPANET, it was started in 1969, and the schools were Stanford and UCLA.
4. Fiction. It was Nokia, but it didn't really catch on because of its price and the fact that networks weren't quite developed enough yet.
5. Fact. But it was only about a year before Netscape Navigator came along and took over.
6. FICTION. Yeah, that was lame.



CLASS: XII - 2021-22

SUBJECT: PHYSICS (CBSE)

Maximum Marks: 35

# GET CHARGED TO EXCEL IN PHYSICS



## PRACTICE PAPER SET BY MANJU RATHEE, UDGAM SCHOOL FOR CHILDREN, AHMEDABAD

### GENERAL INSTRUCTIONS

1. You may use the following values of physical constants wherever necessary.

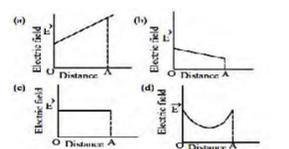
- $e = 1.6 \times 10^{-19} \text{ C}$
- $c = 3 \times 10^8 \text{ ms}^{-1}$
- $h = 6.6 \times 10^{-34} \text{ JS}$
- $\mu_0 = 4\pi \times 10^{-7} \text{ NA}^{-2}$
- $k_B = 1.38 \times 10^{-23} \text{ JK}^{-1}$
- $N_A = 6.023 \times 10^{23} \text{ /mole}$
- $m_p = 1.6 \times 10^{-27} \text{ kg}$

**DIRECTIONS (Q1-Q27):** Select the most appropriate option from given below each question.

**Q1.** A charge Q is enclosed by a Gaussian spherical surface of radius R. If the radius is doubled, then the outward electric flux will  
 (a) increase four times  
 (b) be reduced to half  
 (c) remain the same (d) be doubled

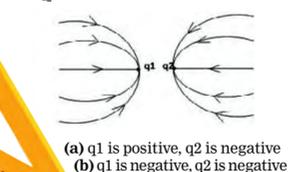
**Q2.** The falling of a water droplet of mass 1 mg is just prevented by upward electric field of magnitude 0.1 k N/C. The charge on the droplet of water is  $[g=9.8 \text{ m/s}^2]$   
 (a)  $9.8 \times 10^{-11} \text{ C}$  (b)  $0.1 \times 10^{-11} \text{ C}$   
 (c)  $9.8 \times 10^{-10} \text{ C}$  (d)  $0.98 \text{ C}$

**Q3.** Figure shows the part of an infinite plane sheet of charge. Which of the following graphs correctly shows the behaviour of electric field intensity as we move from point O to A.



**Q4.** The work done in rotating the dipole having dipole moment p, from stable to unstable equilibrium in a uniform electric field E is  
 (a) pE (b) -pE (c) 2pE (d) -2pE

**Q5.** What can be the nature of charges  $q_1$  and  $q_2$ ?



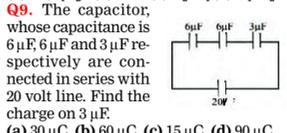
- (a)  $q_1$  is positive,  $q_2$  is negative
- (b)  $q_1$  is negative,  $q_2$  is negative

(c)  $q_1$  is negative,  $q_2$  is positive  
 (d)  $q_1$  is positive,  $q_2$  is positive

**Q6.** Electric field and electric potential inside a charged spherical shell:  
 (a)  $E \neq 0; V = 0$  (b)  $E = 0; V \neq 0$   
 (c)  $E \neq 0; V \neq 0$  (d)  $E = 0; V = 0$

**Q7.** If two charged particles having a charge of  $2 \times 10^{-2} \text{ C}$  each, are brought from infinity to within a separation of 10 cm, then the increase in PE during the process will be  
 (a) 18 J (b) 36 J (c) 10 J (d) 40 J

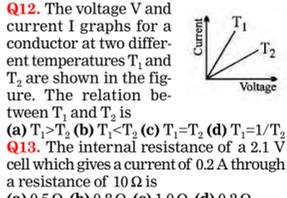
**Q8.** Two condenser of capacity  $C_1$  and  $C_2$  are connected in parallel. If a charge q is given to the assembly, the charge gets shared. The ratio of the charge on the condenser  $C_1$  to the charge on the condenser  $C_2$  is  
 (a)  $1/(C_1 C_2)$  (b)  $1/1$  (c)  $C_2/C_1$  (d)  $C_1/C_2$



**Q9.** The capacitor, whose capacitance is  $6 \mu\text{F}$ ,  $6 \mu\text{F}$  and  $3 \mu\text{F}$  respectively are connected in series with 20 volt line. Find the charge on  $3 \mu\text{F}$ .  
 (a)  $30 \mu\text{C}$  (b)  $60 \mu\text{C}$  (c)  $15 \mu\text{C}$  (d)  $90 \mu\text{C}$

**Q10.** If in a parallel plate capacitor, which is connected to a battery, we fill dielectrics in whole space of its plates, then which of the following increases?  
 (Q - charge, V - potential difference, E - Electric field, C - Capacitance)  
 (a) Q and V (b) V and E  
 (c) E and C (d) Q and C

**Q11.** If two identical cells are connected first in series, and then in parallel, then the ratio of balancing length in the potentiometer wire will be:  
 (a) 2:1 (b) 1:2 (c) 1:4 (d) 4:1



**Q12.** The voltage V and current I graphs for a conductor at two different temperatures  $T_1$  and  $T_2$  are shown in the figure. The relation between  $T_1$  and  $T_2$  is  
 (a)  $T_1 > T_2$  (b)  $T_1 < T_2$  (c)  $T_1 = T_2$  (d)  $T_1 = 1/T_2$

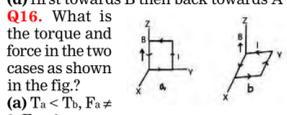
**Q13.** The internal resistance of a 2.1 V cell which gives a current of 0.2 A through a resistance of  $10 \Omega$  is  
 (a)  $0.5 \Omega$  (b)  $0.8 \Omega$  (c)  $1.0 \Omega$  (d)  $0.2 \Omega$

**Q14.** Which of the following is the correct equation when Kirchhoff's loop rule is applied to the loop BCDEB in clockwise direction?  
 (a)  $-i_1 R_1 - i_2 R_2 - i_3 R_3 = 0$   
 (b)  $-i_1 R_1 - i_2 R_2 + i_3 R_3 = 0$   
 (c)  $-i_1 R_1 + i_2 R_2 + i_3 R_3 = 0$   
 (d)  $-i_1 R_1 + i_2 R_2 - i_3 R_3 = 0$

**Q15.** AB is a wire of potentiometer with the increase in value of resistance R, the

shift in the balance point J will be  
 (a) towards B (b) towards A  
 (c) remains constant  
 (d) first towards B then back towards A

**Q16.** What is the torque and force in the two cases as shown in the fig?  
 (a)  $T_a < T_b, F_a \neq 0, F_b \neq 0$   
 (b)  $T_a > T_b, F_a = F_b = 0$   
 (c)  $T_a = T_b = 0, F_a = F_b = 0$   
 (d)  $T_a = T_b, F_a = F_b = 0$



**Q17.** In a Wheatstone bridge all the four arms have equal resistance R. If the resistance of galvanometer arm is also R, the equivalent resistance of combination is  
 (a)  $2R$  (b)  $R/4$  (c)  $R/2$  (d)  $R$

**Q18.** What is the function of radial field in the moving coil galvanometer?  
 (a) to make the torque acting on the coil maximum.  
 (b) to make the magnetic field strong.  
 (c) to make the current scale linear.  
 (d) all the above.

**Q19.** Which device will have the least resistance?  
 (a) Ammeter of range 1A  
 (b) Ammeter of range 10 A  
 (c) Voltmeter of range 1 V  
 (d) Voltmeter of range 10 V

**Q20.** At a certain place, the horizontal component of the earth's magnetic field is  $\sqrt{3}$  times the vertical component. The angle of dip at the place is  
 (a)  $75^\circ$  (b)  $60^\circ$  (c)  $45^\circ$  (d)  $30^\circ$

**Q21.** A wire of length 'L' carries a current I. It is bent in the form of a circle. The magnetic moment of current loop (in  $\text{amp-m}^2$ ) is  
 (a)  $IL^2/4\pi^2$  (b)  $1\pi L^2$  (c)  $IL^2/4\pi$  (d)  $4\pi IL^2$

**Q22.** A horizontal straight wire 10 m long extending from east to west is falling with a speed of  $5.0 \text{ m/s}^2$  at right angles to the horizontal component of the earth's magnetic field,  $0.3 \times 10^{-4} \text{ Wb m}^{-2}$ . What is the instantaneous value of the emf induced in the wire?  
 (a)  $1.5 \times 10^{-4} \text{ V}$  west to east  
 (b)  $1.5 \times 10^{-4} \text{ V}$  east to west  
 (c)  $1.5 \times 10^{-2} \text{ V}$  west to east  
 (d)  $1.5 \times 10^{-2} \text{ V}$  east to west

**Q23.** Identify the wrong statement.  
 (a) Eddy currents are produced in a steady magnetic field.  
 (b) Eddy currents can be minimized by using laminated core.  
 (c) Induction furnace uses eddy current to produce heat.

(d) Eddy current can be used to produce braking force in moving trains.

**Q24.** What is the direction of induced currents in metal rings 1 and 2 when current I in the wire is increasing steadily?  
 (a) clockwise in metal ring 1 and anti-clockwise in metal ring 2.  
 (b) Anti-clockwise in metal ring 1 and clockwise in metal ring 2.  
 (c) Clockwise in both  
 (d) Anti-clockwise in both

**Q25.** When 100 V dc is applied across a LR circuit, A current of 1 amp flows in it. When 100 V ac is applied across the same circuit, the current drops to 0.5 A. The impedance and the inductive reactance are  
 (a)  $200 \Omega$  and  $0.93 \Omega$   
 (b)  $100 \Omega$  and  $0.93 \Omega$   
 (c)  $200 \Omega$  and  $173 \Omega$  (d)  $100 \Omega$  and  $173 \Omega$

**Q26.** When an ac source of emf  $E = E_0 \sin 100t$  is connected across a circuit, the current is  $I = I_0 \sin(100t + \pi/4)$ . If the circuit consists possibly only of RC or RL in series, find the relationship between the two elements.  
 (a)  $R = 1k\Omega, C = 10 \mu\text{F}$   
 (b)  $R = 1k\Omega, C = 1 \mu\text{F}$   
 (c)  $R = 1k\Omega, L = 10 \text{ H}$   
 (d)  $R = 1k\Omega, L = 1 \text{ H}$

**Q27.** The transformation ratio in the step-down transformer is  
 (a) one (b) greater than one  
 (c) less than one  
 (d) the ratio greater or less than one depends on the other factor

**ASSERTION /REASON**  
 For question numbers 28 to 31, two statements are given-one labelled Assertion (A) and the other labelled Reason (R). Select the correct answer to these questions from the codes (a), (b), (c) and (d) as given below.  
 (a) Both A and R are true and R is the correct explanation of A  
 (b) Both A and R are true but R is NOT the correct explanation of A  
 (c) A is true but R is false  
 (d) A is false and R is also false

**Q28. Assertion-** Faraday laws are consequence of conservation of energy  
**Reason-** In a purely resistive AC circuit, the current lags (behind) the emf in phase

**Q29. Assertion-** Making and breaking of current in a coil produce no momentary current in the neighbouring coil of another circuit  
**Reason-** Momentary current in the neighbouring coil of another circuit is an eddy current

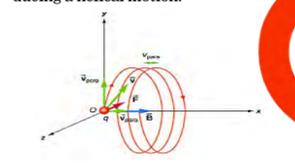
**Q30. Assertion-** A variable capacitor is connected in series with a bulb through AC source if the capacitance of variable capacitor decreases, the brightness of bulb is reduced

**Reason-** The reactance of capacitor increases if capacitance is reduced

**Q31. Assertion-** When capacitive reactance is smaller than the inductive reactance in LCR circuit, emf leads the current

**Reason-** The phase angle is angle between alternating emf and alternating current of the circuit

**CASE STUDY:**  
**HELICAL MOTION OF A CHARGED PARTICLE IN A MAGNETIC FIELD**  
 If velocity has a component along B, this component remains unchanged as the motion along the magnetic field will not be affected by the magnetic field. The motion in a plane perpendicular to magnetic field is a circular one, thereby producing a helical motion.



**Q32.** The radius of the charge particle, (when v is perpendicular to B) placed in a uniform magnetic field is given by  
 (a)  $R = mv / qB$  (b)  $R = qB / mv$   
 (c)  $R = Bq m / v$  (d)  $R = v q / mB$

**Q33.** An electron, proton, He+ and Li++ are projected with the same velocity perpendicular to a uniform magnetic field. Which one will experience maximum magnetic force?  
 (a) Electron (b) Proton (c) He+ (d) Li++

**Q34.** The work done by the magnetic field on the charge particle moving perpendicular to a uniform magnetic field is  
 (a) Zero (b) q (v x B) . S  
 (c) Maximum (d) qBS / v

**Q35.** The distance moved by a charged particle along the magnetic field in one rotation, when v has a component parallel to B is  
 (a)  $2\pi v \cos\theta / qBm$  (b)  $2\pi m v \cos\theta / qB$   
 (c)  $qBm / 2\pi v \cos\theta$  (d)  $Bq / 2\pi m$

These questions are meant for practice purpose only. Students are advised to check format, syllabus and marks for Board test papers with their teachers. Questions have been given by teachers and NIE is not responsible for them.

# Logic, the key to solving computers

## PAPER SET BY MANPREET KAUR JUDGE, AAVISHKAR ACADEMY, BENGULURU



### SECTION-A

#### QUESTION 1

a) Which of the following can be omitted while using for loop? (5X1=5)  
 (i) Update statement  
 (ii) Initial value  
 (iii) Test expression  
 (iv) All of them  
 1. (i) & (ii) 2. (iv) & (i) 3. (iv) 4. (i)  
**Answer: 3**

b) Which one out of these is an infinite loop?  
 1. for (i=2;i<10;a+2)  
 2. for (i=0;i<10; a++)  
 3. i=2; do{ i++; }while(i < 20);  
 4. for (i=0; i<=10;i-)  
**Answer: 4**

c) Complete the following statement. The do.....while loop repeats a set of statements \_\_\_\_\_ even if the condition is false.  
 1. at least once 2. twice  
 3. infinite times 4. not even once  
**Answer: 1**

d) See the syntax and name what type of loop it is?  
 a = 1;  
 while (a < 10)  
 {  
 }  
 1. Infinite loop 2. Empty loop  
 3. Finite loop  
 4. User controlled loop  
**Answer: 2**

e) Read the following code segment properly and predict how many times the loop will be executed?  
 int a = 1, b = 2;  
 while(++b < 6)  
 a \*= b;  
 System.out.println(a);  
 1. two times 2. three times  
 3. four times 4. five times  
**Answer: 2**

### SECTION-B

#### QUESTION 2

Define a class named movieMagic with the following description:

DATA MEMBERS	PURPOSE
int year	To store the year of release of a movie
String title	To store the title of the movie
float rating	To store the popularity rating of the movie (minimum rating=0.0 and maximum rating=5.0)
MEMBER METHODS	PURPOSE
movieMagic()	Default constructor to initialize numeric data members to 0 and String data member to ""
void accept()	To input and store year, title and rating
void display()	To display the title of the movie and a message based on the rating as per the table given below

RATING	MESSAGE TO BE DISPLAYED
0.0 to 2.0	Flop
2.1 to 3.4	Semi-Hit
3.5 to 4.4	Hit
4.5 to 5.0	Super-Hit

Write a main method to create an object of the class and call the above member methods.  
**Answer** (6 X 1 = 6)  
 import java.util.Scanner;

```
public class movieMagic
{
    private int year;
    private String title;
    private float rating;

    public movieMagic() {
        year = 0;
        title = "";
        rating = (b) _____;
    }

    public void accept() {
        Scanner in = new Scanner(System.in);
        System.out.print("Enter Title of Movie: ");
        title = in.nextLine();
        System.out.print("Enter Year of Movie: ");
        year = in.nextInt();
        System.out.print("Enter Rating of Movie: ");
        rating = in.nextFloat();
    }

    public void display() {
        String message = "Invalid Rating";
        if (rating < 0)
            message = "Flop";
        else if (rating <= 3.4)
            message = "Semi-Hit";
        else if (rating <= 4.4)
            message = "Hit";
        else if (rating <= 5.0)
            message = (f) _____;

        System.out.println(title);
        System.out.println(message);
    }

    public static void main(String args[]) {
        movieMagic obj = new movieMagic();
        obj.accept();
        obj.display();
    }
}
```

- Answer: 1**
- QUESTION 3**  
 Read the paragraph given below and answer the questions given below:
- Case study 1**  
 A block of statements which gets executed repeatedly unless the required work gets done is called a loop or an iterative construct. Based on the flow of control these constructs can be divided into two categories - Entry and Exit controlled loop. Entry control loop checks the condition in the beginning and exit control loop at the end or exit point of the loop. For and while loops are entry controlled loops whereas do...while is an exit controlled loop. Writing a loop requires initialization condition where we initialize the variable in use. It marks the start of a loop generally. An already declared variable can be used or a variable can be declared, local to loop only.
- Testing Condition is used for testing the exit condition for a loop. It must return a boolean value. It can be entry or exit control loop. Statement execution happens once the condition is evaluated to true, the statements in the loop body are executed according to these conditions. Increment or Decrement is used for updating the variable for next iteration. Loop is terminated when the condition becomes false marking the end of its life cycle.
- a) 1. MovieMagic 2. moviemagic  
 3. movieMagic  
**Answer: 3.**
- b) 1."0.0" 2. 0.0 3. 0  
**Answer: 2**
- c) 1. void 2. Void 3. int  
**Answer: 1.**
- d) 1. sc.nextLine(); 2. in.nextLine();  
 3. in.next();  
**Answer: 2**
- e) 1. == 2.0 2. >= 2.0 3. <= 2.0  
**Answer: 3**
- f) 1. "Super-Hit" 2. 'Super-Hit'  
 3. "SuperHit"

### Answer: 1

#### QUESTION 3

a) A testing condition returns a \_\_\_ value. (4 X 1 = 4)  
 1. true 2. boolean 3. false  
**Answer: 2**

b) The loop executes only if \_\_\_  
 1. The testing condition is true.  
 2. The testing condition is false.  
 3. The testing condition is incremented.

### Answer: 1

c) How many types of loops are there?  
 1. Three  
 2. Two  
 3. Four  
**Answer: 2**

d) What does the Initializing variable decide?  
 1. Test condition of the loop  
 2. Ending of the loop  
 3. Beginning of the loop  
**Answer: 3**

**KEY TIPS:** While attempting questions in Section A - thorough knowledge of theoretical concepts will help. Questions like predict the output or Q1 e) given above should always be answered after giving a dry run and not by mental calculations or guesswork.

While attempting Section-B the students need to understand the logic of the program given in the paper, analyze, work with the logic and then attempt to complete it. Understanding the concepts is of utmost importance as then only the students will be able to comprehend the logic. It's also equally important to mention that writing and practically solving the program questions is of utmost importance, as that is a sure shot method of getting the right logic and syntax and making you confident to face your exams.

For case study questions reading the passage, comprehending it and then choosing the most appropriate answer is really very important.

Age old proverb "Practice makes a man perfect" still holds true and there is no alternative to hard work.

These questions are meant for practice purpose only. Students are advised to check format, syllabus and marks for Board test papers with their teachers. Questions have been given by teachers and NIE is not responsible for them.