

UNIT IV

Society, Law and Ethics

(For Examination Question No. 5)

In This Unit

Chapter 17 Society, Law and Ethics

GLIMPSES

- ❖ **Computer Forensics.** Methods used for Interpretation of computer media for digital evidence.
- ❖ **Cyber Law.** All legal and regulatory aspects of Internet and WWW are defined by cyber law.
- ❖ **Digital Property.** Any information about you or created by you that exists in digital form, either online or on an electronic storage device.
- ❖ **FLOSS.** Free Libre (or Livre) Open Source Software. Software that are free as well as open.
- ❖ **Freeware.** Software that are available at no cost but cannot be modified.
- ❖ **Free Software.** Software available free of cost and also can be copied and redistributed but no source code is available.
- ❖ **Intellectual Property.** Creative creations of mind such as patents, literary and creative arts, copyrights, trademarks etc.
- ❖ **OSS (Open Source Software).** Software whose source code is available and which can be modified, copied and redistributed.
- ❖ **Proprietary Software.** Software that are neither free nor open.
- ❖ **Plagiarism.** Stealing someone else's intellectual work and representing it as your own.
- ❖ **Phishing.** Attempting to acquire sensitive information from individuals over the internet, by means of deception.
- ❖ **Scam.** Any fraudulent business practice that extracts money from an unsuspecting, ignorant person.
- ❖ **Shareware.** Software for which licence fee is payable after some time limit.

TYPE A

OBJECTIVE TYPE QUESTIONS

[1 Mark]

Multiple Choice Questions

1. A software that can be freely accessed and modified is called _____.

(a) Synchronous Software	(b) Package Software
(c) Open Source Software	(d) Middleware
2. PNG is an open source _____.

(a) image format	(b) file format	(c) internet format	(d) html format
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3. OSI stands for

(a) Open Source Index	(b) Open Source Image
(c) Open Source Initiative	(d) Open Source Instant
4. Which of the following is not an open source software ?

(a) LibreOffice	(b) Microsoft Office
(c) GNU image manipulation	(d) MySQL

5. The users must agree to the _____ terms and agreements when they use an open source software.
- (a) System (b) License (c) Community (d) Programmer
6. Which of the following is not a downside of OSS ?
- (a) Lack of personalized support (b) Restricted choice
(c) No warranty (d) Multiple choices
7. An example of an open source DBMS.
- (a) MySQL (b) Oracle (c) SQL Server (d) Sybase
8. An open source image editor similar to Adobe Photoshop.
- (a) Nvu (b) Open Office (c) Bluefish (d) GIMPshop
9. What is another name given to 'proprietary software' ?
- (a) Open source software (b) Bespoke software
(c) Tailor Made software (d) Closed source software
10. What is meant by 'proprietary' software ?
- (a) Software owned by an organisation, you may need to buy a license for.
(b) Freely available, constantly upgraded by users. No fee.
11. What is meant by 'open source' software ?
- (a) Software owned by an organisation, you may need to buy a license for
(b) Freely available, constantly upgraded by users. No fee.
12. Which of the following is not 'open source' software ?
- (a) Linux (b) Ubuntu (c) Open Office (d) Windows 10
13. Which of the following is not 'proprietary' software ?
- (a) Windows 10 (b) MAC OSX (c) Linux (d) McAfee
14. Which of the following is an advantage of 'open source' software ?
- (a) You can edit the source code to customise it.
(b) You need to be an expert to edit code.
(c) You have to pay.
(d) Can sometimes be too generic for specialist purposes.
15. Which of the following is a disadvantage of 'open source' software ?
- (a) High quality software with lots of features
(b) Not as customizable
(c) May not have been tested as much as proprietary software, so might have bugs.
(d) You can edit the source code to customise it
16. Which of the following is an advantage of 'proprietary' software ?
- (a) It is usually free.
(b) Thoroughly tested because people are paying to use it.
(c) Not as customizable
(d) Can sometimes be too generic for specialist purposes

17. Which of the following is a disadvantage of 'proprietary' software ?
- (a) You need to be an expert to edit code.
 - (b) You have to pay for this type of software.
 - (c) It's licensed.
 - (d) It is launched after proper testing.
18. Which of the following is a disadvantage of 'open source' software ?
- (a) Can sometimes be too generic for specialist purposes.
 - (b) It is usually free.
 - (c) You need to be an expert to edit code.
 - (d) Not as much support available or you may need to pay for it.
19. The generally recognized term for the government protection afforded to intellectual property (written and electronic) is called _____ .
- (a) computer security law
 - (b) aggregate information
 - (c) copyright law
 - (d) data security standards
20. Which of the following would be a creative work protected by copyright ?
- (a) A list of all Indian President names
 - (b) A portrait of your family
 - (c) A song you wrote
 - (d) The name of your pet dog
21. When someone steals someone else's personal information to commit theft or fraud, it's called _____ .
- (a) Identity Theft
 - (b) Hacking
 - (c) Computer Piracy
 - (d) Infringement
22. Which of the following is not a type of cybercrime ?
- (a) Data theft
 - (b) Forgery
 - (c) Damage to data and systems
 - (d) Installing antivirus for protection
23. Which of the following is not done by cyber criminals ?
- (a) Unauthorized account access
 - (b) Mass attack using Trojans as botnets
 - (c) Email spoofing and spamming
 - (d) Report vulnerability in any system
24. What is the name of the IT law that India is having in the Indian legislature?
- (a) India's Technology (IT) Act, 2000
 - (b) India's Digital Information Technology (DIT) Act, 2000
 - (c) India's Information Technology (IT) Act, 2000
 - (d) The Technology Act, 2008
25. What is meant by the term 'cyber-crime' ?
- (a) Any crime that uses computers to jeopardise or attempt to jeopardise national security
 - (b) The use of computer networks to commit financial or identity fraud
 - (c) The theft of digital information
 - (d) Any crime that involves computers and networks

26. What is an example of e-waste ?
(a) a ripened banana
(b) an old computer
(c) old clothes
(d) empty soda cans
27. Credit card fraud may include :
(a) Stealing of credit card
(b) Unauthorized and illegal use of credit card
(c) Both of the above
(d) Neither
28. Using someone else's twitter handle to post something, will be termed as :
(a) Fraud
(b) Identity theft
(c) Online stealing
(d) Violation
29. Standard security protocol that establishes encrypted links between a web server and a browser is called _____.
(a) Online safety technology
(b) SDT technology
(c) Web encryption technology
(d) Secure sockets layer technology
30. Things like these, e.g., online email account, social media account or handle, online shopping account, online photo sharing account, trademarks, patents, own registered domain name etc. are collectively called _____.
(a) Online identity
(b) Online estate
(c) Digital identity
(d) Digital property
31. The rights of the owner of information to decide how much information is to be shared/exchanged/distributed, are collectively known as _____ (IPR).
(a) Intelligent Property Rights
(b) Intellectual Property Rights
(c) Interactive Property Rights
(d) Instance Property Rights
32. Stealing someone else's intellectual work and representing it as own, is called _____.
(a) Intellectual steal
(b) Pluckism
(c) Plagiarism
(d) Pickism
33. The information/art/work that exists in digital form is called _____.
(a) e-work
(b) e-asset
(c) digital property
(d) e-property
34. Which of the following organizations support free software movement ?
(a) OSI
(b) FSF
(c) W3C
(d) GNU
35. Which of the following software types are 'free' in monetary terms ?
(a) Proprietary software
(b) Shareware
(c) FOSS
(d) Freeware
36. Which of the following software types are 'free' in terms of 'freedom' of right to use ?
(a) Proprietary software
(b) Shareware
(c) FOSS
(d) Freeware
37. The least restrictive open source licence is _____.
(a) GNU
(b) BSD
(c) MIT
(d) Apache

38. Which of the following is an act of 'plagiarism' ?
- (a) Stealing a painting and selling it to a buyer
 - (b) Copying your friend's essay and using it by own name.
 - (c) Deleting your friend's stored work on drive
 - (d) Writing a virus program.
39. Which of the following is/are examples of online fraud ?
- (a) Sita placed an order online and made full payment but no goods were delivered to her.
 - (b) Tim ordered a phone online with full advance payment but he received same brand phone of old model.
 - (c) Your peer picked your credit card and made payment with it.
 - (d) All of the above.
40. 'Tom got to know the password of Tim's Social Media Handle and used it to posts as if Tim posted them. What will this act be called as ?
- (a) Online fraud
 - (b) Identity theft
 - (c) Plagiarism
 - (d) Phishing
41. Manya received an email warning her of closure of her bank accounts if she did not update her banking information asap. She clicked the link in the email and entered her banking information. Next, she got to know was 'she was duped'. This is an example of _____ .
- (a) Online fraud
 - (b) Identity theft
 - (c) Plagiarism
 - (d) Phishing
42. Which of the following is not a cyber crime ?
- (a) Scam
 - (b) Phishing
 - (c) Child pornography
 - (d) Downvote a social media post
43. Which of the following is/are examples of cyber crime ?
- (a) Extracting money from using a person's netbanking details
 - (b) Posting/viewing child pornographic material
 - (c) Taking online payment and not delivering goods.
 - (d) All of the above
44. Methods used for interpretation of computer media for digital evidence, are collectively known as _____ .
- (a) Digital investigation
 - (b) Digital clearing
 - (c) e-forensics
 - (d) Digital forensics
45. Which of the following are examples of online identity theft ?
- (a) Paying online using someone else's netbanking information.
 - (b) Sending emails to others by hacking someone's mail-id.
 - (c) Gaining access to someone's social media handle and posting by posing them.
 - (d) Publishing online a negative article.

True/False Questions

46. Open Source Software can be used for commercial purposes.
47. It is okay to copy and paste information from the Internet into your report then organize it.
48. Shareware software allows you to try the software before you buy it.
49. Freeware is copyrighted software that is freely available to use.
50. Cyber-laws are incorporated for punishing all types of criminals only.
51. Deceptively attempting to acquire sensitive information of someone else using online means, is a cybercrime.
52. Freeware and free software mean the same thing.
53. In a URL, http means, it is a secure connection
54. In a URL, https means, it is a secure connection

Fill in the Blanks

55. OSS stands for _____ .
56. Any fraudulent business practice that extracts money from an unsuspecting, ignorant person is called a _____ .
57. Theft of digital personal information in order to commit fraud, is called online _____ theft.
58. _____ are the rights of the owner of creative information/work to decide about the usage or price of his work.
59. _____ is stealing someone else's intellectual work and representing it as your own without giving credit.
60. Any work/information that exists in digital form either on Internet or on an electronic device, is known as _____ property.
61. Discarded electrical or electronic devices are known as _____ .
62. _____ refers to the methods used for interpretation of computer media for finding digital evidence against some crime/fraud.
63. The least restrictive open source license is _____ license.
64. The original code written by programmers for a software is known as _____ .
65. _____ means no price is to be paid for the software.
66. _____ means freedom to use the software.
67. _____ is the protection of personal information given online.

ANSWERS

Multiple Choice Questions

- | | | | | | |
|---------|---------|---------------|---------|------------|---------|
| 1. (c) | 2. (a) | 3. (c) | 4. (b) | 5. (b) | 6. (d) |
| 7. (a) | 8. (d) | 9. (d) | 10. (a) | 11. (b) | 12. (d) |
| 13. (c) | 14. (a) | 15. (c) | 16. (b) | 17. (b) | 18. (a) |
| 19. (c) | 20. (c) | 21. (a) | 22. (d) | 23. (d) | 24. (c) |
| 25. (d) | 26. (b) | 27. (c) | 28. (b) | 29. (d) | 30. (d) |
| 31. (b) | 32. (c) | 33. (c) | 34. (b) | 35. (c, d) | 36. (c) |
| 37. (c) | 38. (b) | 39. (a, b) | 40. (b) | 41. (d) | 42. (d) |
| 43. (d) | 44. (d) | 45. (a, b, c) | | | |

True / False Questions

- | | | | | | |
|-------|-------|-------|-------|-------|-------|
| 46. T | 47. F | 48. T | 49. T | 50. F | 51. T |
| 52. F | 53. F | 54. T | | | |

Fill in the Blanks

- | | | |
|----------------------------------|-----------------------|--------------|
| 55. Open Source Software | 56. scam | 57. identity |
| 58. Intellectual Property Rights | 59. Plagiarism | 60. digital |
| 61. e-waste | 62. Digital forensics | |
| 63. MIT | 64. source code | 65. Freeware |
| 66. Free software | 67. Privacy | |

Very Short Answer Questions

68. What is Online fraud ?

Ans. Fraud committed using the Internet is called **Online fraud**. Online fraud may occur in many forms such as : *non-delivered goods ; non-existent companies ; stealing information ; fraudulent payments* etc.

69. What are intellectual property rights ?

Ans. **Intellectual property rights** are the rights of the owner of information to decide how much information is to be exchanged, shared or distributed. Also it gives the owner a right to decide the price for doing (exchanging/sharing/distributing) so.

70. "**Privacy** is the protection of personal information given online. In e-commerce especially, it is related to a company's policies on the use of user data."

(a) Why is the above given statement important ?

(b) What is the need to safeguard user privacy ?

Ans.

(a) It is important for the safeguard of user privacy, online.

(b) Online world is an open world and thus the personal information of a user must not be available openly, as it may be misused. Thus, it is very important and highly needed to safeguard user privacy.

71. What is Plagiarism ?

Ans. **Plagiarism** is stealing someone else's intellectual work and representing it as your own work without citing the source of information.

72. What is digital property or digital asset ?

Ans. **Digital property** (or **digital assets**) refers to any information about you or created by you that exists in digital form, either online or on an electronic storage device.

73. What is OSS ?

Ans. OSS refers to Open Source Software, which is modifiable, redistributable software. But it may not be free of charge.

74. Expand the terms : OSI, FLOSS, FSF, GNU, GPL, W3C, OSS.

Ans.

OSI	Open Source Initiative
FLOSS	Free Libre Open Source Software
FSF	Free Software Foundation
GNU	GNU is not Unix
GPL	General Public License
W3C	World Wide Web Consortium
OSS	Open Source Software

75. What is OpenOffice.org ?

Ans. It is an open source office applications suite compatible with a popular proprietary office application suite, Microsoft Office.

76. What are open source based software ?

Ans. Open Source Software are the software that can be freely used *in terms of* making modifications, constructing business models around the software and so on, but it may not be free of charge. Important thing is that in open source software, the source code is freely available to the customer.

77. How is free software different from freeware ?

Ans. Free software is the software available at no cost and no restrictions i.e., it can be copied, modified and redistributed also. Freeware, on the other hand, is free of cost, can be copied and redistributed but cannot be modified as no source code is available.

78. What is the difference between freeware and shareware ?

Ans. Freeware software comes at no monetary cost whereas shareware software comes either at some nominal cost or some restrictions such as trial version or time-bound version.

[CBSE D 11]

79. Compare open source software and proprietary software.

Ans. Open Source Software can be freely used (as source code is available to the customer) but it does not have to be free of charge.

Proprietary Software is the software that is neither open nor freely available. Its source code is not available, further distribution and modification is either forbidden or requires special permission by the supplier or vendor.

80. Name two Open Source software alongwith their application.

[CBSE D 12]

Ans. OpenOffice.org – Office application suite ;
Linux – Operating System

81. Name two Proprietary software alongwith their applications.

[CBSE OD 12]

Ans. MS-Office – Office application suite
MS-Windows – Operating System

82. Name two threats to digital properties.

Ans. (i) Digital Software penetration tools
(ii) Stealing and plagiarizing codes of digital properties.

83. What is credit card fraud ?

Ans. Credit card fraud is when thieves may obtain a new credit card getting blocked your original card and asking for a duplicate one. They may use your stolen credit card information for stealing money or committing other frauds.

84. What is identity theft ?

Ans. Identity theft occurs when someone uses another person's personal information such as name, Adhaar number, driver's license number, credit card number, or other identifying information to take on that person's identity in order to commit fraud or other crimes.

85. Name some common open source licenses.

Ans.

(i) GPL (General Public License) or GNU GPL (General Public License)

(ii) GNU LGPL (Lesser General Public License)

(iii) BSD License (iv) MIT License (v) Apache License

86. What are public domain software ?

Ans. Public domain software are free and can be used without restrictions. These are outside the scope of copyright and licensing.

87. What is the role of HTTP ?

Ans. HTTP stands for **Hypertext Transfer Protocol**. It is a protocol that allows communication between different systems over Internet. Most commonly, it is used for transferring data from a web server to a browser to view web pages.

88. What is the role of HTTPS ?

Ans. It is the secured version of HTTP. It ensures the safe and secure data transmission over Internet. HTTPS involves the use of an SSL certificate – "SSL" stands for **secure sockets layer** – which creates a secure encrypted connection between the web server and the web browser.

89. What is the role of SSL ?

Ans. With SSL, the data/information is encrypted before sending over Internet. When an SSL certificate is used, the information becomes unreadable to everyone except for the server you are sending the information to. This protects it from hackers and identity thieves.

90. It is an internet service for sending written messages electronically from one computer to another. Write the service name.

Ans. e-mail.

[CBSE Sample Paper 2019-20]

91. What is Cyber Crime ?

Ans. Any criminal offense that is facilitated by, or involves the use of, electronic communications or information systems, including any electronic device, computer, or the Internet is referred to as **Cyber Crime**.

92. What is phishing ?

Ans. **Phishing** is the practice of attempting to acquire sensitive information from individuals over the Internet, by means of deception, *i.e.*, through authentic looking links.

93. What is scam ?

Ans. Any fraudulent business practice that extracts money from an unsuspecting, ignorant person is called a **scam**.

94. Name the Act as per Indian law that enforces the regulations against cyber crime.

Ans. IT Act 2000 and IT (Amendment) Act 2008.

95. What is Online Identity theft ?

Ans. Online **identity theft** is the theft of personal information in order to commit fraud.

96. What can be done to reduce the risk of identity theft ? Write any two ways.

[CBSE Sample Paper 2019-20]

Or

List two measures against online identity theft.

Ans.

- (i) Use unique ids to protect your devices and accounts.
- (ii) Using bio-metric protection

97. What is e-waste ?

Ans. e-waste refers to discarded electronic devices and material which are no longer in use, *e.g.*, discarded *cell phones, monitors, laptops* etc.

98. List some gender issues related to teaching computers.

Ans.

- (i) Under representation of girls
- (ii) Not girl-friendly work culture

99. Enumerate any two disability issues while teaching and using computers.

[CBSE Sample Paper 2019-20]

Or

List some disability related issues related to teaching computers.

Ans.

- (i) Unavailability of Teaching material/Aids
- (ii) Lack of Special Needs Teachers
- (iii) Lack of Supporting curriculum

TYPE B

SHORT ANSWER QUESTIONS

[2, 3 Marks]

100. What measures can you take to curb online frauds ?

Ans. You can protect your against identity theft by following the steps given below :

- (i) Protect personal information with unique ids and strong passwords.
- (ii) Use Unique Ids to protect our devices and accounts.
- (iii) Use Bio-metric protection.

101. What is digital property ? What are the threats to digital properties ?

Ans. Digital property (or digital asset) refers to any information about you or created by you that exists in digital form, either online or on an electronic storage device.

Examples of digital property include : **any online personal accounts (email/social media accounts/ shopping accounts/video gaming accounts, online storage accounts) and personal websites and blogs ; domain names registered in your name; intellectual properties etc.**

Common threats to digital properties are :

1. **Digital software penetration tools** such as *cracks* and *keygens*, tools created by hackers.
2. **Stealing and plagiarizing codes of your digital properties.**

102. How can you protect your digital properties ?

Ans. The protective measures for digital properties are :

1. **Anti-Temper Solutions** such as *utility tools, software, apps, video games* and so forth.
2. **Legal Clauses.** Add legal clause in the clauses of use of your software/digital properties.
3. **Limit the sharing of software code.**

103. What is secure data transmission ? What technical ways are used to ensure the secure data transmission ?

Ans. Secure data transmission means applying enough technical safeguards so that data travels safely to its target, without being compromised or eavesdropped.

To ensure secure data transmission, majorly following techniques are applied :

- (i) **SSL secure data transmission.** SSL (*Secure Sockets Layer*) is a standard security protocol which ensures data security by establishing encrypted online links between a web server and a browser.
- (ii) **Data encryption.** Encrypted data when sent over Internet is hard to steal and hence is safer.
- (iii) **Using Safe protocols** such as for files, secure FTP protocol.

104. Why should intellectual property rights be protected ?

Ans. The intellectual property rights must be protected because protecting them

- encourages individuals and businesses to create new software and new software applications, as well as improving existing applications,
- ensures new ideas and technologies are widely distributed,
- promotes investment in the national economy.

105. *What do you understand by plagiarism ? Why is it a punishable offence ?*

Ans. Plagiarism is the act of using or stealing someone else's intellectual work, ideas etc. and passing it as your own work. In other words, plagiarism is a failure in giving credit to its source.

Plagiarism is a fraud and violation of Intellectual property rights. Since intellectual property holds a legal entity status, violating its owner's right is a legally punishable offence.

106. *What is digital property ? Give some examples of digital properties.*

Ans. Digital property (or digital assets) refers to any information about you or created by you that exists in digital form, either online or on an electronic storage device.

Examples of digital property include : any online personal accounts (email/social media accounts/ shopping accounts/video gaming accounts, online storage accounts) and personal websites and blogs ; domain names registered in your name; intellectual properties etc.

107. *Describe the terms freeware and open source software. Write examples of one Proprietary and one OSS Software.*

Ans. *Freeware* is the software free of cost, which can be copied, modified and redistributed as well but whose source code is not available. *Open source software*, on the otherhand, is the software, whose source code is available and which can be copied, modified and redistributed as well. There may or may not be charges payable for open source software.

Open Source Software : Linux ;

Proprietary Software : Microsoft Windows 8.

108. *Expand the following terms : (i) OSS (ii) SDLC (iii) GNU (iv) FLOSS*

Ans.

(i) OSS. Open Source Software.

(ii) SDLC. System Development Life Cycle.

(iii) GNU. GNU is Not Unix.

(iv) FLOSS. Free Libre/Livre and Open Source Software.

109. *Mr. Jayanto Das is confused between Shareware and Open source software. Mention at least two points of differences to help him understand the same.*

Ans. **Shareware** is software, which is made available with the right to redistribute copies, but it is available for limited time, often after a certain period of time, then a license fee should be paid.

Shareware is not the same thing as *free and open source software* (FOSS) for two main reasons :

(i) the source code is not available and,

(ii) modifications to the software are not allowed.

OSS refers to *open source software*, which refers to software whose source code is available to customers and it can be modified and redistributed without any limitation. An OSS may come free of cost or with a payment of nominal charges that its developers may charge in the name of development, support of software.

110. *Would you suggest open source software (OSS) for an organization or sector where the performance is the factor of utmost importance, such as Military ?*

You must be aware that military has different software needs than the commercial sector because of its unique mission and environment. While commercial sector chooses software on the basis of factors like : application choice, ease of use, service and support, price, reliability and performance, the military does the same depending upon factors like : reliability, long-term supportability, security, scalability and performance of the software.

Keeping in mind the above scenario, answer the above question with a proper justification. Give example of a software, if you are recommending one.

Ans. The open source software comes with characteristics like : availability of open source, no license restriction on type of usage, freedom to modify, redistribute etc. But all these characteristics are not enough to be suggested as a preferred software. Not all the OSS provide long-term support or are secure-enough or scalable. Therefore, we can not blindly recommend any OSS software. The same applies to proprietary software as well.

Therefore, we can recommend only those software to Military that have solid support-base in the form of *community-development-groups* etc. and that have features like *security, scalability and performance* along with it. Thus, the OSS software suite like LAMP (*Linux, Apache, MySQL, PhP*) that has all the above mentioned features can be recommended to Military.

111. *Posing as someone else online and using his/her personal/financial information shopping online or posting something is a common type of cyber crime these days.*

(a) What are such types of cyber crimes collectively called ?

(b) What measures can you take to stop these ?

Ans. (a) Online fraud

(b) The measures to stop these frauds may include :

- A monitoring official body that ensures the sanctity of Ecommerce Company and delivery of goods/services as promised.
- Strong security mechanism by the ecommerce site and payment gateways to prevent stealing of crucial information.

Official guidelines and safeguards on the selling of users' data to third parties.

112. *What are common gender and disability issues faced while teaching/using computers in classrooms ?*

Ans. The Gender issues while teaching /using computers are : *under representation of girls, not girl-friendly work-culture, etc.*

Disability issues while teaching/using computers are : *unavailability of teaching materials/aids, lack of special needs teachers and lack of supporting curriculum, etc.*

113. *Give examples of software, hardware that may be used for special needs students.*

Ans.

1. Sophisticated virtual keyboard software.
2. A joystick that is specific to the needs of the child.
3. A programming editor that can be interfaced with the virtual keyboard, and does not require any mouse movements.
4. For low-vision students, Braille keyboards, monitors, and printers should be made available to facilitate their learning and working on computers.

114. List a table of differences between Free software and Open source software.

Ans.

Free Software	Open Source Software
<ul style="list-style-type: none"> <input type="checkbox"/> Freedom to run program for any purpose <input type="checkbox"/> Freedom to study about program <input type="checkbox"/> Freedom to distribute copies of software <input type="checkbox"/> Freedom to modify/improve program and release improvements to public 	<ul style="list-style-type: none"> <input type="checkbox"/> It has distribution of license. <input type="checkbox"/> Availability of source code. <input type="checkbox"/> Free distribution <input type="checkbox"/> Integrity of Authors Source Code.

115. What is the difference between Proprietary software and Open source software ?

Ans.

	Proprietary	Open Source
Cost	Mostly available for a free	Must be free to use modify and redistribute.
Support	Support provided by the vendor at a cost.	Community of users and developers
Ownership of Source Code	Organization that created it	Free, no ownership
Modification of Source Code	Only organization/creator can modify	Free, anyone can modify
Copyright	Licensed, typically for a free	Licensed ; typically for a free
Code	Provide only Object code not source code	Provide source code with object code

116. What is the difference between Free software and Freeware ?

Ans.

	Free Software	Freeware
About	Free software is software that can be used, studied, and modified without restriction, and which can be copied and redistributed in modified or unmodified form either without restriction.	Freeware refers to software that anyone can download from the Internet and use for free.
License and Copyright	GNU General Public License or similar open source licenses. A copyright is usually put just on the name of the software and the freedoms to use are also listed.	User license or EULA (End User License Agreement) is an important part of freeware. Each license is specific to the freeware. Copyright laws are also applicable to Freeware.
Features	All the features are free.	All the features are free.
Distribution	Programs can be distributed free of cost.	Freeware programs can be distributed free of cost.
Example	Mozilla Firefox , gedit, vim, pidgin, GNU Coreutils, Linux kernel	Adobe PDF, Google Talk, yahoo messenger, MSN messenger

117. *What is the difference among Freeware, Free software and Open source software ?*

Ans. Freeware is a software available at no fee but its source code or any freedom to use/modify is not available. "Free software" and "Open source software" are two terms for the same thing : software released under licenses that guarantee a certain, specific set of freedoms.

According to Bruce Perens, one of the founders of the OSI and Open Source Definition, **the Open Source term was intended as a synonym for Free Software.**

Freeware comes with a terms to use while free/open source software give freedom to use/modify the code.

All open source software can be used for commercial purpose.

118. *What is the difference among Shareware, Freeware and Public domain software ?*

Ans. Shareware. Shareware software is distributed at low (or sometimes no) cost, but usually requires payment and registration for full legal use. Copies are distributed on a trial basis. You are free to test the software, see if it matches your needs, and decide whether it's a good value.

Freeware. Freeware is also distributed at minimal cost, but in this case the authors do not expect payment for their work. Typically, freeware programs are small utilities or incomplete programs that authors release for their potential benefit to others, but without support. The author of a freeware program may still retain a copyright on its contents and stipulate that others not modify the program or charge significant fees for its use or distribution.

Public domain software. Public domain software is not copyrighted. It is released without any conditions upon its use, and may be used without restriction. This type of software generally has the lowest level of support available.

119. *Are public domain software open source software ? How are these two similar or different ?*

Ans. "Open Source" describes a subset of free software that is made available under a copyright license along with its Source code openly available. Open source software gives people permission in advance to use the software as per their own needs and innovate or change it with technology.

"Public Domain" means software (or indeed anything else that could be copyrighted) that is not restricted by copyright. It may be this way because the copyright has expired, or because the person entitled to control the copyright has disclaimed that right.

A public domain software may not be necessarily an open source software.

120. *What are the freedoms that a free software must provide ?*

Ans. According to the Free Software Definition free software must fulfill 4 freedoms :

- (i) The freedom to run the program, for any purpose
- (ii) The freedom to study how the program works, and adapt it to your needs.
Access to the source code is a precondition for this.
- (iii) The freedom to redistribute copies.
- (iv) The freedom to improve the program, and release your improvements to the public, so that the whole community benefits. Access to the source code is a precondition for this.

121. *Compare freeware and Shareware.*

[CBSE Sample Paper II, 12]

Ans. Freeware is computer software that is available for use at no cost or for an optional fee. Freeware is generally proprietary software available at zero price and is not free software. The author usually restricts one or more rights to copy, distribute and make derivative works of the software.

Shareware is usually offered as a trial version with certain features only available after the license is purchased, or as a full version, but for a trial period. Once the trial period has passed, the program may stop running until a license is purchased. Shareware is often offered without support, updates, or help menus, which only become available with the purchase of a license. The words "free trial" or "trial version" are indicative of shareware.

122. *What do you mean by Spam mails ? How can you protect your mailbox from Spams ?*

[CBSE Sample Paper I, 12]

Ans. Spam mails, also known as junk e-mail, is a subset of spam that involves nearly identical messages sent to numerous recipients by e-mail. We can protect our mailbox from spams by creating appropriate filters.

123. *What is free software ? How is it different from Open Source Software ?*

Ans. Free software means the software is freely accessible and can be freely used, changed and distributed by all who wish to do so. And no payments are needed to be made for free software.

Open Source Software is different from free software in the sense that it does not have to be free of charge (contrary to free software).

124. *Differentiate between open source and open data.*

[CBSE Sample Paper 2019-20]

Ans. The term '**open source**' is applicable to software, which means source code of a software is freely available and user can make changes in it and reuse it.

The term '**open data**' is applicable to data that is freely available for everyone to use without any licensing or copyright requirements.

125. *Compare and Contrast*

- (i) OSS and FLOSS
- (ii) Proprietary software and Free software
- (iii) Freeware and Shareware
- (iv) Freeware and Free software.

Ans.

- (i) **OSS** refers to *open source software*, which refers to software whose source code is available to customers and it can be modified and redistributed without any limitation. An OSS may come free of cost or with a payment of nominal charges that its developers may charge in the name of development, support of software.

FLOSS refers to *Free Libre and Open Source Software* or to *Free Libre and Open Source Software*. The term FLOSS is used to refer to a software which is both *free software* as well as *open source software*. Here the words **libre** (a Spanish word) and **livre** (a Portuguese word) mean *freedom*.

- (ii) **Proprietary software** is the software that is *neither open nor freely available*. Its use is regulated and further distribution and modification is either forbidden or requires special permission by the supplier or vendor. Source code of proprietary software is normally not available.

Free Software means the software is freely accessible and can be freely used, changed, improved, copied and distributed by all who wish to do so. And no payments are needed to be made for **free software**.

- (iii) The term **freeware** has no clear definition, but is generally used for software, which is available free of cost and which allows copying and further distribution, but **not modification** and whose source code is not available. Freeware should not be mistaken for *open software* or for *free software*.

Shareware is software, which is made available with the right to redistribute copies, but it is stipulated that if one intends to use the software, often after a certain period of time, then a license fee should be paid.

Shareware is not the same thing as *free and open source software* (FOSS) for two main reasons : (i) the source code is not available and, (ii) modifications to the software are not allowed.

- (iv) The term **freeware** has no clear definition, but is generally used for software, which is available free of cost and which allows copying and further distribution, but **not modification** and whose source code is not available. Freeware should not be mistaken for *open software* or for *free software*.

Free Software means the software is freely accessible and can be freely used, changed, improved, copied and distributed by all who wish to do so. And no payments are needed to be made for **free software**.

126. *Discuss some commonly available public domain/open source software licenses.*

Ans. 1. The MIT License. The MIT license is a free software license created by the MIT (Massachusetts Institute of Technology). It puts very limited restrictions on reuse.

Its Key points are :

- You can use, copy and modify the software however you want. No one can prevent you from using it on any project, from copying it however many times you want and in whatever format you like, or from changing it however you want.
- You can give the software away for free or sell it. You have no restrictions on how to distribute it.
- The only restriction is that it be accompanied by the license agreement. It basically says that anyone can do whatever they want with the licensed material, as long as it's accompanied by the license.

2. **The BSD License.** The BSD license is a part of a family of permissive free software licenses, imposing minimal restrictions on the use and redistribution of covered software.

Its Key points are :

- (i) Keeps the copyright notice.
- (ii) You are free to use, redistribute, and license the code under another license.

3. **The Apache 2.0 License.** The Apache 2.0 license is a permissive free software license by the Apache Software Foundation.

These rights can be applied to both *copyrights* and *patents*. The Apache License offers :

- (i) Keeps the copyright notice and a copy of the Apache 2.0 license.
- (ii) You are free to use, modify, distribute, and redistribute the software.
- (iii) If you modify the code, you have to mention your modifications particularly.
- (iv) Rights are granted for no fee or royalty.
- (v) Rights are worldwide and irrevocable.

4. The GPL (GNU General Public License). The GPL license is the first *copyleft license* for general use. A *copyleft license* means the derivative work can only be distributed under the same license terms.

Its key points are :

- (i) Keeps the licensing header.
- (ii) Your software release has to be GPL-licensed too.
- (iii) If anyone requests it, you have to make the sources available.

5. The LGPL (GNU Lesser General Public License). The LGPL license is a weak copyleft license for general use.

The LGPL and GPL licenses differ with one major exception ; with LGPL the requirement that you have to release software extensions in open GPL has been removed.

Mostly, LGPL is used by libraries.

Its key points are :

- (i) Keeps the licensing header.
- (ii) If anyone requests it, you have to make the sources available.

127. Explain Phishing and how to prevent it?

Ans. Phishing is the practice of attempting to acquire sensitive information from individuals over the internet, by means of deception. Information typically targeted by phishing schemes includes passwords, user-names, bank account information, and social security numbers.

One can prevent the phishing attacks by using the following practices :

- Don't enter sensitive information in the webpages that you don't trust
- Verify the site's security
- Use Firewalls
- Use AntiVirus Software that has Internet Security
- Use Anti-Phishing Toolbar

128. Why should E-waste be handled properly ? Is it toxic ?

Ans. Some of the components of e-waste contain materials such as lead, cadmium, mercury, polychlorinated biphenyls (PCBs), etched chemicals, brominated flame retardants which are hazardous in nature. Therefore, e-waste should be handled in an environment-friendly manner to prevent this hazardous material polluting the environment.

E-waste as such is not toxic. However, processing of e-waste to recover valuable materials such as lead, copper and gold is hazardous. Therefore, a careful environmentally sound recovery process is required for recycling the e-waste.

129. *As a citizen of india, what advise you should give to others for e-waste disposal ?*

[CBSE Sample Paper 2019-20]

Or

How should one dispose off the E-waste ?

Ans. E-wastes should not be given to unauthorized vendors/buyers. The respective pollution control boards in different states, authorize agencies to collect e-waste from generators. The dealers should have valid consent and authorization. This authorization is given based on the competency of the recycler, infrastructure and other factors as decided by the regulatory authorities.

130. *Where can one recycle TV ?*

Ans. There are a number of drop off locations available for recycling your televisions. Since many of the old generation TVs consist of CRT glass, it is even more important to recycle these using certified e-waste recyclers.

131. *What is the difference between threat, vulnerability and risk ?*

Ans. A **threat** is the possibility of an attack.

A **vulnerability** is a weakness in the system.

Risks are items that may cause harm to the system or organization.

132. *Carefully read the following and determine what kind of cybercrime has caused them ?*

Changes in an account's beneficiaries

- (a) *Denial of credit for no apparent reason*
- (b) *Failing to receive mail or bills*
- (c) *Credit reports that contain inquiries or information about accounts that the client did not open*
- (d) *Bills arrive from unknown or unfamiliar sources*
- (e) *Calls from creditors or collection agencies about services or purchases that your client did not initiate*
- (f) *Large debit or credit card charges that your client cannot explain*
- (g) *Changes in authorized signers on debit or credit card accounts*
- (h) *Inappropriate or unusual charges to a debit or credit card*
- (i) *Calls from creditors or collection agencies about services or purchases that your client did not initiate.*

Ans. (a) – (e) – Identity theft ;

(f) –(i) – Credit card Fraud