


## National University of Computer and Emerging Sciences, Lahore Campus

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	Section:	ALL	Page(s):	11
	Exam Type:	Final		

Student: Name: \_\_\_\_\_ Roll No. \_\_\_\_\_ Section: \_\_\_\_\_

**Instruction/Notes:** Cutting and over writing will not be acceptable. Provide the answers in the space given below each question.

For section 'H' and 'E' Question no. 5 and 6 are excluded.

For section 'D' and 'F' Question no. 6 is excluded.

Students of all other sections should attempt ALL questions.

**Question 1:** Explain why it is necessary to have a disclaimer on a website to inform users of the website when cookies are being used. Not informing the consumer is unethical or illegal. [2+2]  
CLO1

To gain user consent to having their data collected via cookies.

The cookie consent should be mandatory as a way to deal with cookies being used only for the purpose(s) users consent to, in case of non-essential use. Not informing and getting the consent is not illegal but unethical. But once getting the consent, violating any clause in the consent is illegal.

**Question 2:** A successful distributed denial-of-service attack requires downloading software that turns unprotected computers into zombies under the control of the malicious hacker. Should the owners of the zombie computers be fined as a means of encouraging people to better safeguard their computers? Why or why not? [2+2] CLO1

No because the users being compromised is undesirable for themselves let alone for others.

**Question 3:** Discuss why an organization might elect to use a separate, independent team for quality testing rather than the group of people who originally developed the software. [4]

It is important that ultimate responsibility for quality is kept at the center. The day-to-day pressures on production and sales create the temptation to skimp on quality procedures in the interests of raising production levels, increasing sales or reducing costs. This can only be avoided by developing a "quality culture" within the organization, that is by creating an environment in which the idea of skipping quality procedures because of other pressures becomes unthinkable. For this to happen, the importance of quality must be seen to be recognized at the highest levels in the organization.

For when the original developers are to test they tend to develop a bias for their own creation and fail to see bugs

While a different team with no idea about the system would go in testing it blindly and might not know how to navigate the system 100% so they would probably tinker around more and possibly find bugs

**Question 4:** For any data breach at the vendor's end, why do customers need to be informed? Should informing be an illegal requirement? [2+2] CLO1

1. So that the consumers can take action on their side to minimize the impact.
2. Yes, informing the customers should be a legal requirement.

**Question 5:** State what could be opt-out and opt-in for the following situation. [2+2]

From time to time, we may wish to contact you with marketing information and updates about our own products and services by email, post or telephone. If you do not want to hear from us in this way, you can opt-out by ticking the options below or contacting us at any time.

- ☐ **I do not wish to hear from you by email in relation to marketing.**
- ☐ **I do not wish to hear from you by post in relation to marketing.**
- ☐ **I do not wish to hear from you by telephone in relation to marketing.**

For more details about how we will use your information and your rights in relation to your personal information please see our privacy notice at [www.shawbrook.co.uk/privacy-notice](http://www.shawbrook.co.uk/privacy-notice). If you have made a joint application, then you must inform the joint applicant of the information contained in the Shawbrook Privacy Notice and have their prior agreement to disclose to us their information. By proceeding, you acknowledge having read our privacy notice.

Opting out means that someone has to actively take action in order to withdraw their consent for something. For example:kkk

If the user does not want to receive any further communication they have to actively tick the above boxes. By doing nothing, they will be opted in.

This last part is key - by doing nothing, the user is opted in

**Question 6:**

**A)** What is the difference between act-utilitarianism and rule utilitarianism? Briefly explain with example. [2+2]

**Act utilitarianism allows any action that maximizes happiness, whereas rule utilitarianism imposes rules on which actions people are allowed to perform to promote happiness.**

**B)** Which kind of ethical theory, deontologist or consequentialist, works better for arguing that it is wrong to drive one's car on the left side of a road in a country where people normally drive on the right? Explain [3]

Deontologist Ethical Theory is best suited to the argument of which side of the road to drive on. This theory is best described as; an action is right if it is in accordance with a moral rule or principle. Let's take the rule; everyone will drive on the right hand side of the road in the state of Texas. If you follow the Deontologist Ethical theory everyone in Texas must drive on the right hand side of the road because it is the rule of law. There are no deviations to the rule for any reason at all.

Consequentiality Ethical theory is almost opposite to deontologist, sometimes there are no hard fast rules everyone must follow. An example might be the same law in Texas where all drivers will drive on the right hand side of the road; however, if there is a good reason, like a medical emergency a driver could drive on the left and side of the road. This might even extend to a driver who needs to turn at the next light when there is a line of cars ahead of them, they can drive on the left hand side for a short distance as long as no one is coming.

As with traffic laws, Deontologist theory would be the best type to follow. With a consequentiality ethical theory driving would be dangerous because no rule or law is absolute. You know if you allow people to drive in a manner that is convenient to them an accident is only a manner of time.

**Question 7:** Your Company is considering using N-version programming with two software development firms and two hardware devices for the navigation system of a guided missile.

Briefly describe what this means, and outline several advantages and disadvantages of this approach. [2+2+2]

N-version programming is a form of redundancy that involves the execution of a series of program instructions simultaneously by two different systems. The systems use different algorithms to execute instructions that accomplish the same result. The results from the two systems are then compared; if a difference is found, another algorithm is executed to determine which system yielded the correct result. In some cases, instructions for the two systems are written by programmers from two different companies and run on different hardware devices. The rationale for N-version programming is that both systems are highly unlikely to fail at the same time under the same conditions. Thus, one of the two systems should yield a correct result. IBM employs N-version programming to reduce disk sector failures in data storage devices. Two pieces of code in the same application save a piece of data and then compare the data to ensure that no errors occurred.

**Question 8:** You are the project manager of a project and you need to prioritize and manage time for tasks listed in the table below. Using the concept of The Eisenhower Matrix, categorize these items into four quadrants. Write down the quadrant number against each item as per your understanding. [10]

Important / Urgent 1	Important / Not Urgent 2
Not Important / Urgent 3	Not Important / Not Urgent 4

#	Item	Quadrant #
1	Reply to email from the customer	1
2	Plan next phase of the project to be started in three weeks	2
3	Project meeting to address an issue	1
4	Preparation for the upcoming meeting	2
5	Attend a meeting with no clear agenda	3
6	Compile work hours report due today	3
7	Spend time on your social media app timeline	4

8	Attend to visitors	3
9	Attend to a complaint of one of your team member	1
10	Discussions on the current political scenario	4

**Question 9:** Following are the types of attacks, read the statement in the given table and write the type of attack in next column: [7]

- A. Virus
- B. Worm
- C. Trojan horse
- D. Distributed denial of service
- E. Rootkit
- F. Spam
- G. Phishing (spear-phishing, smishing, and vishing)

Exploit	Exploit (Fill the column with exploit number)
This exploit refers to unsolicited email messages, usually sent in bulk to a large list of recipients. This can be sent by real humans, but more often, it is sent by a botnet, which is a network of computers (bots or spam-bots) infected with malware and controlled by a single attacking party (bot herder). Apart from email, this can also be distributed via text messages or social media. Most people find this annoying but consider it an inevitable side effect of using email communication. While this is annoying -- it can choke email inboxes if not properly filtered and regularly deleted -- it can also be a threat. The senders regularly alter their methods and messages to trick potential victims into downloading malware, sharing data or sending money.	F: Spam
This is a form of exploit in which an attacker masquerades as a reputable entity or person in email or other forms of communication. Attackers will commonly use familiar looking emails to distribute malicious links or attachments that can perform a variety of functions. Some will extract login credentials or account information from victims.  In this exploit, deceiving is popular with cybercriminals, as it is far easier to trick someone into clicking a malicious link in a seemingly legitimate looking email than it is to break through a computer's defenses.	G: Pishing
A computer program that replicates by copying itself to another program, computer boot sector or document and changes how a computer works. It spreads between systems after some type of human intervention. They	A: Virus

<p>replicate by creating their own files on an infected system, attaching themselves to a legitimate program, infecting a computer's boot process or infecting user documents. It requires someone to knowingly or unknowingly spread the infection.</p>	
<p>A program or a collection of malicious software tools that give a threat actor remote access to and control over a computer or other system. Although this type of software has some legitimate uses, such as providing remote end-user support, most open a backdoor on victims' systems to introduce malicious software -- including viruses, ransom-ware, key-logger programs or other types of malware -- or to use the system for further network security attacks. These programs often attempt to prevent detection of malicious software by deactivating endpoint antimalware and antivirus software.</p> <p>These, can be purchased on the dark web, can be installed during phishing attacks or employed as a social engineering tactic to trick users into giving the permission to be installed on their systems, often giving remote cybercriminals administrator access to the system. Once installed, it gives the remote actor access to and control over almost every aspect of the operating system. Older antivirus programs often struggled to detect these.</p>	E: Rootkit
<p>In this exploit, multiple compromised computer systems attack a target and cause the service to be unavailable for users of the targeted resource. The target can be a server, website or other network resource. The flood of incoming messages, connection requests or malformed packets to the target system forces it to slow down or even crash and shut down, thereby make the service unavailable to legitimate users or systems.</p> <p>Many types of threat actors, ranging from individual criminal hackers to organized crime rings and government agencies, carry out this exploit. In certain situations -- often ones related to poor coding, missing patches or unstable systems -- even legitimate, uncoordinated requests to target systems can look like a this exploit when they are just coincidental lapses in system performance.</p>	D: DDOS
<p>A program whose primary function is to self-replicate and infect other computers while remaining active on infected systems. It duplicates itself to spread to uninfected computers. It often does this by exploiting parts of an operating system that are automatic and invisible to the user. Typically, a user only notices a worm when its uncontrolled replication consumes system resources and slows or halts other tasks.</p>	B: Worm
<p>In computing, a program downloaded and installed on a computer that appears harmless, but is, in fact, malicious. Unexpected changes to computer settings and unusual activity, even when the computer should be idle, are strong indications that it is residing on a computer.</p> <p>Typically, it is hidden in an innocent-looking email attachment or free download. When the user clicks on the email attachment or downloads the free program, the malware hidden inside is transferred to the user's</p>	Cawe4q2Zq2Q2 q2 : Trojan horse



- 9) According to straight line method of providing depreciation, the value of fixed asset
- Remains constant
  - Increase each year.
  - Decrease each year
  - None of them.
- 10) Your wife is currently working as a sales manager at XYZ Company that deals with Imported IT equipment's; you need to purchase some laptops for newly hired employees at your company. Therefore, you decided to give her a contract for high quality laptops. This is an example of ----.
- Nepotism
  - Cronyism
  - Conflict of interest
  - Fair deal
- 11) A consulting firm responds to customer issues as they come up, and those issues change with the business environment. Consulting firms want to respond quickly to the customers. Which of the following model would be suited to the consulting firm.
- Bureaucratic Model
  - Organic Model
  - Matrix
  - None of the above
- 12) An office secretary will now also welcome the occasional guests who visit the office. This gives her a welcome break in her daily work, as she likes to make people feel at home and chat with new people. Which of following job category would be applicable.
- Job rotation
  - Job enlargement
  - Job enrichment
  - All of the above
- 13) Suppose ABC Limited has Current Assets of \$10, 00,000 and Current Liabilities of \$15, 00,000. Next, calculate the Working Capital of the Company.
- \$5,00,000
  - \$5,00,000
  - \$25,00,000
  - \$15,00,000
- 14) Build employer's skills to enable them to take on new duties is called.
- Training
  - Development
  - Both a & b
  - None of the above
- 15) The system which is followed in organizations to distribute some portion from profits to all/some employees in organization is classified as
- profit sharing
  - gain sharing
  - broad banding
  - draw sharing
- 16) If you write an original story, what type of intellectual property gives you the right to decide who can make and sell copies of your work?
- Copyright
  - Trade secret
  - Patents
  - Trademarks
- 17) Imagine a sports team sets up a company to sell its own range of clothes. What type of intellectual property can the team use to show that the clothes are made by them?
- Copyright
  - Patents
  - Registered designs
  - Trademarks
- 18) Human resource management is concerned with \_\_\_\_\_?



- a) Employees
- b) Employer

- c) Law
- d) None of the above

19) The professional bodies usually start by a group of people that have similar interests in the same type of activity. Which of the following features, professional bodies should have:

A) Establishing a code of conduct to regulate the way members of the body behave in their professional lives and a disciplinary procedure to discipline members who breach this code;  
B) Establishing mechanisms for disseminating knowledge of good practice and new developments to its members, typically through publications and conferences but increasingly also with the World Wide Web.

C) Setting standards of education and experience that must be met by people wishing to become members of the body.

D) Advising government and regulatory bodies about matters within its area of expertise.

- a) Both (A) and (D)
- b) All of the Above
- c) None of the above

20) Consider a case: Trevor is an employee in a software company. Trevor wants to start his own software business, and for that, he discusses his plans with his friends, so he can get a kick-start. During this phase, he accidentally reveals confidential information of his company where he is working as an employee, without the permission of his boss. Which section of BCS (British Computer Society) code of conduct has Trevor violated?

- a) The public interest
- b) Duty to relevant authority
- c) Duty of the profession
- d) Professional Competence and Integrity
- e) Status of professional code and conduct

21) In companies, the stakeholders can be directors, where the business is usually not working on a large scale.

- a) True
- b) False
- c) The statement above is invalid.

22) Companies, where the owners are personally liable for all the company's debts are which types of companies?

- a) Public
- b) Limited
- c) Private
- d) Sole traders

23) Employee in a company carry out job depends on several factors:

1. *how well they understand what is required of them*
2. *their ability*
3. *the quality of the facilities provided for doing the job*
4. *their motivation, that is how well they want to do the job*
5. *the attitude of their colleagues*

Consider a case :

Specifications of individual modules are unclear, ambiguous or incomplete. Anyone who asks for clarification is told "Do the best you can with the spec you've got". Because of the habit of measuring effort in man months, there is an assumption that people are all the same. The result is that the programmer with a degree in Mathematics is writing the report generation module while the programmer with a degree in Business Studies is struggling with a module to calculate the eigenvalues of a matrix. There are five terminals, connected to an overloaded mainframe, shared between the 25 staff; the semicolon key on one of the terminals works only intermittently. The staff are housed in a single

large room in a converted aircraft hangar. A formal “flexitime” system is in use and employees pay great attention to it, in order to maximize their time off. The main subject of conversation at coffee breaks is the appointments pages of Computer Weekly. Although the company pays competitive salaries, at least once a month there is a leaving party for a member of the team. No one shows any interest in what the software is for. The company has tried hard to recruit good programmers and, when they first join the project, new recruits seem to perform very well but, after three months, they are indistinguishable from their colleagues.

**If poor quality of software coming from the team, which factors mentioned above, can be the reason(s):**

- |                     |                     |
|---------------------|---------------------|
| a) Both (1) and (2) | d) (3), (1) and (2) |
| b) (4), (3) and (1) | e) (3), (5) and (4) |
| c) (5) only         |                     |

24) Copyright and related rights protection is an essential component in fostering human creativity and innovation

- |         |          |
|---------|----------|
| a) TRUE | b) FALSE |
|---------|----------|

25) General guidelines of computer ethics are needed for \_\_\_\_

- |                                |                 |
|--------------------------------|-----------------|
| a) Computer crime              | c) Cracking     |
| b) Protection of personal data | d) All of these |

26) Plagiarism is \_\_\_\_\_?

- |   |  |
|---|--|
| a) Turning in someone else’s work as your own                     | c) Failing to put a quotation in quotation marks |
| b) Copying words or ideas from someone else without giving credit | d) All of these                                  |

27) Software can be protected by

- |                    |              |
|--------------------|--------------|
| a) Trade Mark      | c) Copyright |
| b) Design Registry | d) Patent    |

28) The look of the product may be registered in the

- |              |                     |
|--------------|---------------------|
| a) Copyright | c) Patent           |
| b) Trademark | d) Designs Registry |

29) The name under which a product is sold may be registered as a

- |                     |              |
|---------------------|--------------|
| a) Copyright        | c) Trademark |
| b) Designs Registry | d) Patent    |

30) \_\_\_\_\_ is defined as a group of people working together to created profit

- |                 |             |
|-----------------|-------------|
| a) Rout line    | c) System   |
| b) Organization | d) Military |

31) The quest to maximize the profitability should be constrained by:

- |                          |                                  |
|--------------------------|----------------------------------|
| a) Ethical Obligations   | c) Stakeholders                  |
| b) Unethical Obligations | d) Lack of social responsibility |

- 32) Vesting decision-making authority in lower-level managers or other employees is called:
- a) Decentralization
  - b) Centralization
  - c) Localization
  - d) Distributed authority
- 33) The business plan is a document that explains the plans to the potential investors. Which of the following features should be included in a business plan?
1. Technical feasibility
  2. Time period to return the money
  3. Assessment of competition
  4. Grants/loans
  5. Sale of equity
- a) Both (1) and (3)
  - b) (1), (2) and (4)
  - c) (3), (2) and (5)
  - d) Both (1) and (3)
  - e) All of the above
- 34) To ask the users who visit your website for consent to store cookies on their device. Which of the following option is applicable
- a) Opt-in
  - b) Opt-Out
  - c) Both a & b
- 35) A company has decided to invest in outer shape design of bottle in which they would fill the perfume produced by them, which is distinctive, and they wish to ensure that they have sole use.
- a) Copyrights
  - b) Trade mark
  - c) Patent
  - d) Industrial designs
- 36) The unauthorized copying of personal computer software for use in the office or at home or sharing of software among friends comes under
- a) Piracy
  - b) Copyright
  - c) Trade secret
- 37) Currently, XYZ Corporation has \$2,000,000 of equity; so the debt-to-equity (D/E) ratio is 5x—[\$10,000,000 (total liabilities) divided by \$2,000,000 (shareholders' equity) equals 5x]. XYZ Corporation definitely would be considered as
- a) Highly geared.
  - b) Low geared
- 38) Which of the following model has the characteristics of “Emphasize on expertise rather than authority”
- a) Organic Model
  - b) Mechanistic Model
  - c) Matrix Model
  - d) Bureaucratic Model
- 39) Ali deposited Rs. 2,500 in an account that pays 6% simple interest. How much money will he have at the end of 3 years?
- a) 2,950
  - b) 2860
  - c) 3220
  - d) 3950

40) An IT Company provides multiple software products based on different regions. Which of the following structure would be follow by the IT company:

- a) Product line structure
- b) Geographical structure
- c) **Mixed Structure**
- d) Structure by Function