**Short Questions: [5 marks each]**

**What are the tasks that the Operating System performs as “Resource Manager”?**

| *Answer:*   * It enables multiple programs’ execution at the same time. * It enables resource sharing. * Resource allocation/distribution is controlled by Operating Systems. * It provides resources to the software so that it can use the hardware to complete tasks. * It acts as a bridge between the software and the hardware. |
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**What do you think would be the case if search engines like Google did not exist?**

| *Answer:*  There are almost billions of websites on the internet. Search engines index all of these websites. It helps us to perform a systematic search based on query on billions of websites.  If there were no search engines, then we will not be able to search any website based on our needs. We will need to memorize the URLs for the websites we want to visit. The reach of the internet will not be this vast if there were no search engines. People won't be able to use Wikipedia (and similar websites) to find information. So people will not use the internet this much for any academic or research purposes. The usage of the internet will be limited. |
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**Suppose you want to search for apartments to rent. The apartments must be in Dhaka, but you want to avoid Mirpur. What text do you type in the search box?’**

| *Answer:*  If we want to avoid Mirpur, we can use a minus (-) sign before Mirpur.  If we must include Dhaka, we can use a double quotation(“ ”) sign around Dhaka.  *I would type the following in the search box:* apartment rent in “Dhaka” -Mirpur |
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**There are three basic logical structures in programming – sequence, selection, and repetition. Differentiate between selection and repetition.**

| *Answer:*  We use a selection statement when based on some condition we want to perform a specific task and we use repetition when based on some condition we want to perform a task a few times (It can be 0,1, n times, or infinity times). The condition can be either true or false. The selection statement will execute only once if the condition is true whereas repetition will execute repeatedly till the condition becomes false.  Example of selection statement: we can write a condition to check if the age of a person is above 18 or not. If it is above 18, then he can vote, or else he can not.  Example of repetition statement: we can write a condition to print the students’ information who got above 80 in an exam. It will repetitively check the condition for each student and if the condition is true then it will print that students’ information.  In programming, selection statements are written using “if”, “if-else”,”if-else if-else”, “switch-case”, etc. And repetition statements are written using “while”, “do-while”, and “for” loop. |
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