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| **National University of Computer and Emerging Sciences, Lahore Campus** | | | | |
| C:\Users\saif\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.Word\final design.jpg | **Course Name:** | **Computer Org, & Arch.** | **Course Code:** |  |
| **Degree Program:** |  | **Semester:** | **Summer 2023** |
| **Exam Duration:** | **60 Minutes** | **Total Marks:** | **20** |
| **Paper Date:** | **December 5, 2023.** | **Weight** |  |
| **Section:** | **C** | **Page(s):** |  |
| **Exam Type:** | **Lab Activity** |  |  |
| **Student : Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Roll No.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Section:\_\_\_\_\_\_\_** | | | | |
| **Instruction/Notes:** | Attempt all questions. Programmable calculators are not allowed. | | | |

**Question # 1:** Six high school students’ participants in 900 m race, You are appointed for designing the display of the scoreboard. The score board layout is as follow:

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| --- | --- | --- | --- |
| **Rank** | **Name** | **Average Speed**  **(km /h)** | **Time Taken**  **(min)** |
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The participates average speed are recorded as follows:

1. Aaron Ship -------- 11 km /hr
2. Tee Morgan ---------- 12 km/hr
3. Chris Green ------------ 10 km/hr
4. Eyshal Lee ----------- 14 km/hr
5. Xavier Wan ---------- 16 km/hr
6. Store the names and the average speed under the labels Names and Speeds. s
7. Calculate the time taken by each player and do the needed conversions using subroutines
8. Sort the list in ascending order, 1st position to 5th based on time taken in mins.
9. The Scoreboard will display in the manner described in part c only when user press ‘F’ key on keyboard.

Note: All the conversions and calculations must be done under the subroutines. Comment your code well.