

### Question 23

(a) A custom designed solution for the company would be better for the company than an off the shelf package, the reason being is that the company would design a program that would be suited to the needs of the company, but the downside to this is it would cost much more money, compared to an off the shelf package, and would take up much more time. This off the shelf package would be a good alternative for the company, as it would cost much less and less time than getting a customised program created for them, the only downside to this is being that the company might have to buy a number of products to meet all the criteria the company could require, it would still cost the company a lot of money but a lot less money compared to a custom designed program.

(b) (i) The Open source approach is made possible from today's hardware and software since most of the world's people use computers, and more than 85% of the computers are classified as 'decent' which means they can run all sorts of newly developed software. This has made the use and development of open source software very easy, as both hardware and software, even though technology is moving fast and things are getting older every day, are all mostly even and can provide a stable working environment for open source software products.

(ii) The project management issues that would arise from the use of this software development approach would be making sure of what type of code and knowledge is used and to make sure that when the program is compiled it is able to be run for a purpose and work, and to also be run on a broad spectrum of computer types. If this is not done the name open sourced software loses its integrity, as most people around the world give out their knowledge for a program design and development, but if it is kept then there won't be any more problems, related to the project management.

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(c) (i) The instruction to the CPU, ADD (Reg n, Reg m, Reg p) is being use as an accumulator since is the instruction to the CPU to add to registers results and get a new register.

(ii) The Hexadecimal value of Mem 6 is A1, but the the program is runned the Reg 3 changes the value of Mem 6 to 30+A1.

(iii) The decimal value of Reg 3 is 30+A1. I arrived at this answer because the add CPU instruction has the value Reg 3 being the joining of Reg 1 and Reg 2, thus the decimal value for Reg 3 is 30F8.

(iv)    LOAD (Reg 1, Mem 5)  
          LOAD (Reg 2, Mem 7)  
          ADD 3(Reg 3, Reg 1, Reg 2)  
          STORE (Reg 3, Mem 7)  
          STOP