FINAL EXAMINATION – 2019-02-08

## name:

# Bidding (6 points)

In a lowest price bid to implement a large software development project, you have to calculate the fixed price. Your corporate policy requires a 10% mark-up charged on top of all cost to compute the price.

Overhead cost and interest on capital are worth 30k€/week.

A 120k€/week time penalty will be charged for any delay that the project would experience out of the specified contract baseline of 42 weeks.

The activities required to implement the project are given in the table below. Some activities can be crashed by one or more weeks down to a shortest crashed duration. The project includes the software integration with an ERP system subproject developed by the client who promises completion within 26 weeks.

There is 50% chance that the ‘System setup’ activity may take 4 weeks longer if some issues will incur with no direct cost impact (risk may impact under either normal or crashed duration).

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| --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Task** | **Predecessor** | **Normal duration [weeks]** | **Normal direct cost [k€]** |  | **Shortest crashed duration**  **[weeks]** | **Weekly crashing curve slope[k€/week]** |
| A | User needs and specs design |  | 8 | 300 |  |  |  |
| B | Software development | A | 10 | 500 | Can be crashed | 8 | 20 |
| C | Hardware procurement | A | 8 | 300 |  |  |  |
| D | System setup | B, C | 6 | 200 | Can be crashed | 2 | 100 |
| E | Pre-test | D | 4 | 100 |  |  |  |
| F | Integration with ERP | E, H | 10 | 600 | Can be crashed | 6 | 50 |
| G | Final test | F | 4 | 100 |  |  |  |
| H | ERP subproject developed by client |  | 26 |  |  |  |  |

# Monitoring (6 points)

Take previous exercise. Assume you got the bid and the project is now 12 weeks into execution with following Earned Value Report.

Issues have been solved and risk will no longer incur on the system setup activity.

Analyze actual performance and propose corrective actions, if any.



540

# Contract definition (6 points)

A large apparel retailer needs to design and develop the new e-commerce website. To this end, a software development company has been hired as a contractor responsible for both requirements design, coding and delivery. An Agile Project Management (APM) methodology has been agreed to be used to deliver the project (e.g.: Scrum).

Please provide a short definition of APM. Then propose the most suitable payment scheme for the contract and give your justification.