

## ***Revision in Cost Estimation for the Mid-Term***

**(Q1) Choose True or False and label them in your sheet.**

- (1) During estimation we assume resources will be productive for more than 80 percent of their time. ( )
- (2) As the number of rounds in the Wideband Delphi Estimation decreases the range of estimation will be narrower, and Results are converged to an acceptable range. ( )
- (3) The moderator generates a detailed (Wideband Delphi Estimation Sheet), estimates each task in the WBS, and documents the assumptions made. ( )
- (4) Estimation team members prepare a structured document containing problem specification, high level task list, assumptions, and the units of estimation. ( )
- (5) The value adjustment factor VAF exerts an influence of  $\pm 65\%$  on the final adjusted function points FP count. ( )
- (6) Function point is independent of both technology and programming languages. ( )
- (7) Windows, interfaces, and dialog boxes are GUI that can be used in counting function points. ( )
- (8) Requirements are the only thing needed for function point count. ( )
- (9) Milestones are points in the schedule to assess progress. ( )
- (10) Deliverables are work products delivered to the customer. ( )
- (11) One of the scheduling problems is to estimate time and resources for each task in the project. ( )
- (12) One of the scheduling activities is to minimize dependencies between tasks in the project. ( )
- (13) The algorithmic cost modelling is based on experience of past project and application domain. ( )
- (14) The size of the project is affected by the reused components and the programming language. ( )
- (15) Doubling the number of staff means that the duration of the project will be half the initial period. ( )
- (16) If 4 people can complete a project in 13 month, then 5 people can complete it in 11 month. ( )
- (17) Three-point Estimate (E) is based on the weighted average and follows triangular distribution. ( )
- (18) PERT Estimate is based on the weighted average and follows beta distribution. ( )
- (19) Analogous estimation is a better way of estimation in the initial stages of the project, even if the project is new, and no past project is similar. ( )
- (20) The transaction functions EI (external inputs), EO (external outputs), EQ (external inquiries) are measured by counting FTRs (file type referenced) and DETs (data element type) that they contain. ( )

- (21) The data functions ILF (internal logic files) and EIF (external interface files) are measured by counting DETs (data element type) and RETs (record element type) that they contain. ( )
- (22) The processing logic of external inquiries (EQ) present information to the user through the retrieval of data or control information and must contain mathematical formulas for calculations. ( )
- (23) The processing logic of external outputs (EO) present information to the user through the retrieval of data or control information and must contain at least one mathematical formula for calculations. ( )
- (24) In Work Breakdown Structure (WBS) we use Analogy, Wideband Delphi or Three-point Estimation to arrive at the size and effort estimates for the tasks. ( )
- (25) While scheduling the tasks, we should take into account: Precedence, Concurrence, and Critical Path because critical tasks can start earlier or later without impacting the completion date. ( )
- (26) The project completion date is not based on the training, documentation and deployment because such tasks are called non-critical. ( )
- (27) In Finish-to-Start (FS) task dependency relationship, Task B cannot start till Task A is started while in Finish-to-Finish (FF) task dependency relationship, Task B cannot finish till Task A is completed. ( )
- (28) Development effort can be estimated using Lines of Code (LOC) or Function Points (FP). ( )

**(Q2) Choose the right answers and label them in your sheet.**

- (29) Estimation determines how much of the following it will take to build a specific system or product:

(a) *Experience*    (b) *Knowledge*    (c) *Resources*    (d) *Identified Risks*

- (30) The four basic steps in Software Project Estimation are:

(a) *Size, effort, schedule, and cost*

(b) *Input data, calculations, historical data, and good plan.*

(c) *Experience, Assumptions, Identified Risks, and Available Documents*

(d) *Money, time, resources, and effort*

- (31) Important factors that affect the accuracy of estimates are:

(a) *Accuracy of input data, accuracy of calculation, how historical or industry data matches the project, and carefully planned project.*

(b) *Size, effort, schedule, and cost*

(c) *Experience, Assumptions, Identified Risks, and Available Documents*

(d) *Money, time, resources, and effort*

- (32) In a use case, transactions are classified as simple if their number is:

(a)  $\leq 3$     (b)  $\geq 3$     (c)  $\leq 7$     (d)  $\geq 7$

- (33) In a use case, transactions are classified as complex if their number is:  
 (a)  $\leq 3$       (b)  $\geq 3$       (c)  $\leq 7$       (d)  $\geq 7$
- (34) In a use case model, actors are classified as complex if:  
 (a) *There is no interaction with the system*  
 (b) *user interacting through GUI*  
 (c) *user interacting through API*  
 (d) *interacting through a protocol*
- (35) In a use case model, actors are classified as average if:  
 (a) *There is no interaction with the system*  
 (b) *User interacting through GUI*  
 (c) *User interacting through API*  
 (d) *User interacting through a protocol*
- (36) In the Wideband Delphi Estimation, the process is stopped after:  
 (a) *Certain number of rounds and Achievement of consensus*  
 (b) *Achievement of consensus and Stability of results*  
 (c) *Stability of results, Achievement of consensus, and Certain number of rounds*  
 (d) *Certain number of rounds, achievement of consensus, or stability of results*
- (37) The Unadjusted Use-Case Points (UUCP) must be adjusted for :  
 (a) *Estimation sheet, Technical and Environmental Complexity*  
 (b) *Environmental Complexity and Estimation sheet*  
 (c) *Technical Complexity, and Environmental Complexity*  
 (d) *Technical Complexity and Estimation sheet*
- (38) One of the following is a pricing strategy:  
 (a) *Contractual terms*      (b) *Market opportunity*  
 (c) *Underpricing*      (d) *Proposal planning*
- (39) One of the following affects software pricing:  
 (a) *Development plan*      (b) *Pricing to win*  
 (c) *Increased pricing*      (d) *Requirements volatility*
- (40) One of the planning stages:  
 (a) *Requirement volatility*      (b) *Contingency planning*  
 (c) *Market opportunity*      (d) *Proposal planning*
- (41) Which of the of the following sub-models in the COCOMO method is based on the number of application points:  
 (a) *Early design model*      (b) *Reuse model*  
 (c) *Post architectural model*      (d) *Application decomposition model*

- (42) Which of the of the following sub-models in the COCOMO method is based on the number of function points:  
 (a) *Early design model* (b) *Reuse model*  
 (c) *Post architectural model* (d) *Application decomposition model*
- (43) Which of the of the following sub-models in the COCOMO method is based on the number of lines reused or generated:  
 (a) *Early design model* (b) *Reuse model*  
 (c) *Post architectural model* (d) *Application decomposition model*
- (44) Which of the of the following sub-models in the COCOMO method is based on the number of lines of source code:  
 (a) *Early design model* (b) *Reuse model*  
 (c) *Post architectural model* (d) *Application decomposition model*
- (45) While scheduling the project, when a task must occur in parallel with another this is called ...  
 a) *Precedence* b) *Concurrence* c) *Critical Path* d) *Outline*
- (46) Screens, reports, graphs, or control signals that the program generates for use by an end user or other program are considered ...  
 a) External Inputs b) External Outputs c) External queries
- (47) One of the following is a function point counting method:  
 (a) Use cases method  
 (b) Web pages  
 (c) PERT method  
 (d) Three point method

**(Q3) Attach a draft for solution of the following problems, choose the right answers.**

(48) In the following project duration equation  $B = 1.17$ ,  $PM = 50$ :

$TDEV = 3 \times PM^{(0.33+0.2 \times (B-1.01))}$ , the project duration will be:

- (a) *13 months* (b) *11 months* (c) *12 months* (d) *14 months*

(49) If the scale factors affecting the exponent B in the effort equation are given as Precedentedness = 2, development flexibility = 4, risk resolution = 4, team cohesion = 4, process maturity = 3. If B is given by the following equation, its value will be:  $[B = (\text{sum of scale factors}/100) + 1.01]$

- (a) *1.18* (b) *1.17* (c) *0.18* (d) *1.19*

- (50) If the cost drivers affecting the multiplier M in the effort equation are given as reliability = 1.4, complexity = 1.3, memory constraint = 1.2, schedule = 1.3, and tool use = 1.2. The value of M will be:  
 (a) 6.4      (b) 3.4      (c) 3.9      (d) 2.2
- (51) In the effort equation  $PM = A \times Size^B \times M$ ,  $A = 2.49$ ,  $Size = 230000$  LOC,  $B = 1.16$ ,  $M = 3.2$ , the effort estimate with cost drivers will be:  
 (a) 1367      (b) 4374      (c) 1524      (d) 5182
- (52) If the weights of simple, average, and complex use cases are 5, 10, and 15 respectively and number of simple, average, and complex use cases are 8, 12, and 6 respectively, then the unadjusted use case weight will be:  
 (a) 30      (b) 56      (c) 780      (d) 250
- (53) If the weights of simple, average, and complex actors are 1, 2, and 3 respectively and number of simple, average, and complex actors are 5, 4, and 6 respectively, then the unadjusted actor weight will be:  
 (a) 21      (b) 31      (c) 90      (d) 720
- (54) If the unadjusted use case weight is 280 and the unadjusted actor weight is 40 then the unadjusted use case points will be:  
 (a) 11200      (b) 7      (c) 320      (d) 1120
- (55) If the technical complexity factor = 0.8, the environmental complexity factor = 0.9, and the unadjusted use case points = 325 then the adjusted use case points will be:  
 (a) 234      (b) 326.7      (c) 191      (d) 552
- (56) If you have 345 unadjusted function points, and the influence factor = 1.2 then the adjusted function points will be: (a) 287.5    (b) 414    (c) 346.2    (d) 343.8
- (57) If the Total Degree of Influence (TDI) on function point adjustment is given by the equation  $TDI = \sum 14 \text{ factor's Degrees of Influence}$  and the degree of influence of each factor is measured on a scale of zero to five, then the range of TDI will be:  
 (a)  $0 \leq TDI \leq 70$     (b)  $14 \leq TDI \leq 70$     (c)  $5 \leq TDI \leq 14$     (d)  $5 \leq TDI \leq 70$
- (58) If the value adjustment factor of function points counting is given by the equation:  $VAF = (TDI \times 0.01) + 0.65$  and  $TDI = \sum 14 \text{ factor's Degrees of Influence}$  and the degree of influence of each factor is measured on a scale of zero to five, then the range of VAF will be:  
 (a)  $0.65 \leq VAF \leq 1.35$     (b)  $0.79 \leq VAF \leq 1.35$     (c)  $0.65 \leq VAF \leq 0.7$

*\*\*Good Luck\*\* Dr. Handy Heniedy*

### **SWE145 – SW Cost Estimation Oral Exam – Fall 2023 - Model 1**

- (1)** The size of the project is affected by the reused components and the programming language.
- (2)** Which of the following methods of computing effort is based on these factors: the size of a project in function points, the kind of development environment, and the maximum team size:
  - (a)** Industry average graphs
  - (b)** Science estimate
  - (c)** (ISBSG) method
  - (d)** Informal comparison

### **SWE145 – SW Cost Estimation Oral Exam – Fall 2023 - Model 2**

- (1)** Doubling the number of staff means that the duration of the project will be halved.
- (2)** One of the following is a function point estimation method
  - (a)** Use cases method
  - (b)** Task list
  - (c)** Web pages
  - (d)** The Dutch method

### **SWE145 – SW Cost Estimation Oral Exam – Fall 2023 - Model 3**

- (1)** If 4 people can complete a project in 13 month, then 5 people can complete it in 11 month.
- (2)** One of the following is a size estimation method
  - (a)** Task list
  - (b)** GUI components
  - (c)** Industry average graphs
  - (d)** The Dutch method

#### **SWE145 – SW Cost Estimation Oral Exam – Fall 2023 - Model 4**

- (1)* LOC can be used for estimating an individual's task assignments because of the little differences in productivity between programmers.
- (2)* While scheduling the project, we find a set of sequential tasks upon which the project completion date depends this is called ...
  - (a)* Precedence
  - (b)* Concurrency
  - (c)* Critical Path
  - (d)* Outline

#### **SWE145 – SW Cost Estimation Oral Exam – Fall 2023 - Model 5**

- (1)* Measurements in LOC allow for project comparisons and estimation of future projects based on data from past projects.
- (2)* While scheduling the project, when a task must occur in parallel with another this is called ...
  - (a)* Precedence
  - (b)* Concurrency
  - (c)* Critical Path
  - (d)* Outline

#### **SWE145 – SW Cost Estimation Oral Exam – Fall 2023 - Model 6**

- (1)* In the Simplified Function-Point Techniques, counting FP depends only on internal logical files (ILF) and external interface files (EIF).
- (2)* The most popular method in estimating development effort is:
  - (a)* Function points method
  - (b)* Lines of code method (LOC)
  - (c)* Use case points method

### **SWE145 – SW Cost Estimation Oral Exam – Fall 2023 - Model 7**

- (1) Windows, interfaces, and dialog boxes are GUI that can be used in counting function points.
- (2) Tasks that occur before each other is said to be:
  - (a) Concurrent
  - (b) Precedent
  - (c) Critical

### **SWE145 – SW Cost Estimation Oral Exam – Fall 2023 - Model 8**

- (1) If you don't have your own historical data, you can look up a rough estimate of effort by using an effort graph.
- (2) One of the following is a size estimation method:
  - (a) GUI components
  - (b) Industry average graphs
  - (c) The Dutch method

### **SWE145 – SW Cost Estimation Oral Exam – Fall 2023 - Model 9**

- (1) Adding people to a project increases the productivity of existing team members.
- (2) The consensus of researchers is that schedule compression must be not more than:
  - (a) 25 % from nominal
  - (b) 20 % from nominal
  - (c) 30 % from nominal



### **SWE145 – SW Cost Estimation Oral Exam – Fall 2023 - Model 10**

- (1) The use of historical data is positively correlated with cost and schedule overruns.
- (2) If the feature set of a project is flexible and can be cut, the schedule can be shortened as much as you want, subject to your willingness to cut features.
- (3) We can reduce costs by shortening the schedule and conducting the project with a smaller team.

### **SWE145 – SW Cost Estimation Oral Exam – Fall 2023 - Model 11**

- (1) Medium and large projects typically experience some ramp down of team members from the beginning to the middle of the project, and some ramp up in the final stages.
- (2) Measurements in LOC allow for project comparisons and estimation of future projects based on data from past projects.

## *Revision questions on function points*

### **Q1: Which of the following statements is TRUE and which is FALSE**

- 1) The transaction functions EI (external inputs), EO (external outputs), EQ (external inquiries) are measured by counting FTRs (file type referenced) and DETs (data element type) that they contain.
- 2) The data functions ILF (internal logic files) and EIF (external interface files) are measured by counting DETs (data element type) and RETs (record element type) that they contain.
- 3) The processing logic of external inquiries (EQ) present information to the user through the retrieval of data or control information and must contain mathematical formulas for calculations.
- 4) The processing logic of external outputs (EO) present information to the user through the retrieval of data or control information and must contain at least one mathematical formula for calculations.
- 5) The value adjustment factor VAF exerts an influence of  $\pm 65\%$  on the final adjusted function points FP count.
- 6) Function point is independent of both technology and programming languages.
- 7) Windows, interfaces, and dialog boxes are GUI that can be used in counting function points.
- 8) Requirements are the only thing needed for function point count.

### **Q2: Choose the right answer**

- 9) **The most popular method in estimating development effort is:**  
a) Function points method      b) Lines of code method (LOC)      c) Use case method
- ✓ 10) **Screens, reports, graphs, or control signals that the program generates for use by an end user or other program are considered ...**  
a) External Inputs    b) External Outputs    c) External queries
- 11) **One of the following is a function point counting method:**  
a) Use cases method  
b) Web pages  
c) The Dutch method

**Q3: Choose the right answer for the following problems**

**12)** If you have 345 unadjusted function points, and the influence factor = 1.2 then the adjusted function points will be:

$$\text{adjusted function points} = \text{unadjusted function points} * \text{VAF}$$

- a) 287
- b) 414
- c) 346.2

**13)** If the Total Degree of Influence (TDI) on function point adjustment is given by the equation  $\text{TDI} = \sum 14 \text{ factor's Degrees of Influence}$  and the degree of influence of each factor is measured on a scale of zero to five, then the range of TDI will be:

**Varies from 0 to 5**

- a)  $0 \leq \text{TDI} \leq 70$
- b)  $14 \leq \text{TDI} \leq 70$
- c)  $5 \leq \text{TDI} \leq 14$

**14)** If the value adjustment factor of function points counting is given by the equation:

$\text{VAF} = (\text{TDI} \times 0.01) + 0.65$  and  $\text{TDI} = \sum 14 \text{ factor's Degrees of Influence}$  and the degree of influence of each factor is measured on a scale of zero to five, then the range of VAF will be:

- a)  $0.65 \leq \text{VAF} \leq 1.35$
- b)  $0.79 \leq \text{VAF} \leq 1.35$
- c)  $0.65 \leq \text{VAF} \leq 0.7$

## ***Revision In Cost Estimation for the Mid-Term***

**(Q1) Choose True or False and label them in your sheet.**

- (1)** During estimation we assume resources will be productive for more than 80 percent of their time. ( )
- (2)** As the number of rounds in the Wideband Delphi Estimation decreases the range of estimation will be narrower, and Results are converged to an acceptable range. ( )
- (3)** The moderator generates a detailed (Wideband Delphi Estimation Sheet), estimates each task in the WBS, and documents the assumptions made. ( )
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**(Q2) Choose the right answers and label them in your sheet.**

**(16)** Estimation determines how much of the following it will take to build a specific system or product:

**(a) Experience   (b) Knowledge   (c) Resources   *Identified Risks***

**(17)** The four basic steps in Software Project Estimation are:

- (a) Size, effort, schedule, and cost**
- (b) Input data, calculations, historical data, and good plan.**
- (c) Experience, Assumptions, Identified Risks, and Available Documents**
- (d) Money, time, resources, and effort**

**(18)** Important factors that affect the accuracy of estimates are:

- (a) Accuracy of input data, accuracy of calculation, how historical or industry data matches the project, and carefully planned project.**
- (b) Size, effort, schedule, and cost**
- (c) Experience, Assumptions, Identified Risks, and Available Documents**
- (d) Money, time, resources, and effort**

**(19)** In a use case, transactions are classified as simple if their number is:

- (a)  $\leq 3$       (b)  $\geq 3$       (c)  $\leq 7$       (d)  $\geq 7$**

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- (a) Certain number of rounds and Achievement of consensus**
- (b) Achievement of consensus and Stability of results**
- (c) Stability of results, Achievement of consensus, and Certain number of rounds**
- (d) Certain number of rounds, achievement of consensus, or stability of results**

**(24)** The Unadjusted Use-Case Points (UUCP) must be adjusted for :

- (a) Estimation sheet, Technical and Environmental Complexity**
- (b) Environmental Complexity and Estimation sheet**
- (c) Technical Complexity, and Environmental Complexity**
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- (25) One of the following is a pricing strategy:  
(a) *Contractual terms*                      (b) *Market opportunity*  
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(a) *Early design model*                      (b) *Reuse model*  
(c) *Post architectural model*                      (d) *Application decomposition model*
- (32) The factors affecting the size of the project are:  
(a) *Reused components and Programming languages, and application domain*  
(b) *Programming languages and application domain, and Reused components*  
(c) *System distribution, application domain, and Programming languages*  
(d) *Reused components, Programming languages, and System distribution*
- (33) While scheduling the project, when a task must occur in parallel with another this is called ...  
a) *Precedence*                      b) *Concurrence*                      c) *Critical Path*                      d) *Outline*

**(Q3) Attach a draft for solution of the following problems, choose the right answers.**

- (34)** In the following project duration equation  $B = 1.17$ ,  $PM = 50$ :  
 $TDEV = 3 \times PM^{(0.33+0.2 \times (B-1.01))}$ , the project duration will be:  
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Precedentedness = 2, development flexibility = 4, risk resolution = 4, team  
cohesion = 4, process maturity = 3. If  $B$  is given by the following equation, its  
value will be:  $[B = (\text{sum of scale factors}/100) + 1.01]$   
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- (36)** If the cost drivers affecting the multiplier  $M$  in the effort equation are given as  
reliability = 1.4, complexity = 1.3, memory constraint = 1.2, schedule = 1.3, and tool  
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(a) 6.4    (b) 3.4    (c) 3.9    (d) 2.2
- (37)** In the effort equation  $PM = A \times \text{Size}^B \times M$ ,  $A = 2.49$ ,  $\text{Size} = 230000$  LO SC,  
 $B = 1.16$ ,  $M = 3.2$ , the effort estimate without cost drivers will be:  
(a) 1367    (b) 4374    (c) 1524    (d) 5182
- (38)** In the effort equation  $PM = A \times \text{Size}^B \times M$ ,  $A = 2.49$ ,  $\text{Size} = 230000$  LO SC,  
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- (41)** If the unadjusted use case weight is 280 and the unadjusted actor weight is 40 then  
the unadjusted use case points will be:  
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- (42)** If the technical complexity factor = 0.8, the environmental complexity factor = 0.9,  
and the unadjusted use case points = 325 then the adjusted use case points will be:  
(a) 234    (b) 326.7    (c) 191    (d) 552

***\*\*Good Luck\*\* Dr. Handy Heniedy***

# Questions for the oral exam in software cost estimation

## First term 2023/2024

### **Q1: Choose T or F:**

- (1) The size of the project is affected by the reused components and the programming language. **T**
- (2) Doubling the number of staff means that the duration of the project will be halved. **F**
- (3) If 4 people can complete a project in 13 month, then 5 people can complete it in 11 month. **F**
- (4) LOC can be used for estimating an individual's task assignments because of the little differences in productivity between programmers. **F**
- (5) Measurements in LOC allow for project comparisons and estimation of future projects based on data from past projects. **T**
- (6) In the Simplified Function-Point Techniques, counting FP depends only on internal logical files (ILF) and external interface files (EIF). **T**
- (7) Windows, interfaces, and dialog boxes are GUI that can be used in counting function points. **T**
- (8) If you don't have your own historical data, you can look up a rough estimate of effort by using an effort graph. **T**
- (9) Adding people to a project increases the productivity of existing team members. **F**
- (10) The use of historical data is positively correlated with cost and schedule overruns. **F**
- (11) If the feature set of a project is flexible and can be cut, the schedule can be shortened as much as you want, subject to your willingness to cut features. **T**
- (12) We can reduce costs by shortening the schedule and conducting the project with a smaller team. **F**



- (13) Medium and large projects typically experience some ramp down of team members from the beginning to the middle of the project, and some ramp up in the final stages. **F**
- (14) Measurements in LOC allow for project comparisons and estimation of future projects based on data from past projects. **T**

**Q2: Choose the correct answer:**

- (15) Which of the following methods of computing effort is based on these factors: the size of a project in function points, the kind of development environment, and the maximum team size:
- (a) Industry average graphs
  - (b) Science estimate
  - (c) **(ISBSG) method**
  - (d) Informal comparison
- (16) One of the following is a function point estimation method
- (a) Use cases method
  - (b) Task list
  - (c) Web pages
  - (d) **The Dutch method**
- (17) One of the following is a size estimation method
- (a) Task list
  - (b) **GUI components**
  - (c) Industry average graphs
  - (d) The Dutch method
- (18) While scheduling the project, we find a set of sequential tasks upon which the project completion date depends this is called ...
- (a) Precedence
  - (b) Concurrence
  - (c) **Critical Path**
  - (d) Outline

(19) While scheduling the project, when a task must occur in parallel with another this is called ...

(a) Precedence

**(b) Concurrency**

(c) Critical Path

(d) Outline

(20) The most popular method in estimating development effort is:

(a) Function points method

**(b) Lines of code method (LOC)**

(c) Use case points method

(21) Tasks that occur before each other is said to be:

(a) Concurrent

**(b) Precedent**

(c) Critical

(22) One of the following is a size estimation method:

**(a) GUI components**

(b) Industry average graphs

(c) The Dutch method

(23) The consensus of researchers is that schedule compression must be not more than:

**(a) 25 % from nominal**

(b) 20 % from nominal

(c) 30 % from nominal

## ***Software Cost estimation Practical Exam First Term 2023/2024***

1. The general effort equation is:

$$PM = A \times \text{Size}^B \times M,$$

where the exponent B is given by the equation:

$$\text{The exponent } B = [(\sum \text{scale factors}) / 100] + 1.01,$$

the scale factors are Precedentedness, Development flexibility, Risk resolution, Process maturity, and Team Cohesion.

- (a) Estimate the scale factors and calculate B in the following case:*** A

company takes on a new project not in a domain of its experience. The client did not define the process to be used and has allowed time for risk analysis. The company has a CMM level 3 rating (Capability Maturity Model is a framework for assessing how well organizations manage the development of their staff).

- (b) If the multiplier M = 2 calculate the effort without cost drivers and with cost driver if the project size = 125000 LOC.***

2. In a use case estimation method given that the unadjusted use case points (UUCP) = 85, Environmental Factor (EF) = 1.05, and Technical Complexity Factor (TCF) = 0.85. ***Calculate the Adjusted Use-Case Points.***
3. If you have ***275-function-point program*** were to be implemented in ***Java***, calculate the range of the size estimate and the nominal value given that for Java: you would take the range of ***40 to 80 LOC per function point*** and the expected value of ***55 LOC per function point***.
4. Suppose you are creating an effort estimate for a desktop business application of 1,400 function points in Java and you have a maximum team size of 6 people. ***Calculate the effort for this application using the ISBSG Method***, given that:  
*The Desktop equation:*  
$$\text{StaffMonths} = 0.157 \times \text{FunctionPoints}^{0.591} \times \text{MaximumTeamSize}^{0.810}$$
  
*The Third Generation Language equation:*  
$$\text{StaffMonths} = 0.425 \times \text{FunctionPoints}^{0.488} \times \text{MaximumTeamSize}^{0.697}$$

5. Suppose you have an effort estimate of *21 to 28* staff months. ***Derive the estimated range for the schedule from a past project*** its estimated effort and schedule were 22 staff months and 9 months respectively, using the equation:

$$\text{EstimatedSchedule} = \text{PastSchedule} \times (\text{EstimatedEffort} / \text{Past Effort})^{1/3}$$