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.　*(F)*

(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. *(F)*

(3) The moderator generates a detailed (Wideband Delphi Estimation Sheet), estimates each task in the WBS, and documents the assumptions made.　*(f)*

(4) Estimation team members prepare a structured document containing problem specification, high level task list, assumptions, and the units of estimation.　*(F)*

(5) The value adjustment factor VAF exerts an influence of ±65% on the final adjusted function points FP count.　*(F)*

(6) Function point is independent of both technology and programming languages. *(T)*

(7) Windows, interfaces, and dialog boxes are GUI that can be used in counting function points.　*(T)*

(8) Requirements are the only thing needed for function point count.　*(T)*

(9) Milestones are points in the schedule to assess progress.　*(T)*

(10) Deliverables are work products delivered to the customer.　*(T)*

(11) One of the scheduling problems is to estimate time and resources for each task in the project.　*(F)*

(12) One of the scheduling activities is to minimize dependencies between tasks in the project.　*(T)*

(13) The algorithmic cost modelling is based on experience of past project and application domain.　*(F)*

(14) The size of the project is affected by the reused components and the programming language.　*(T)*

(15) Doubling the number of staff means that the duration of the project will be half the initial period.　*(F)*

(16) If 4 people can complete a project in 13 month, then 5 people can complete it in 11 month.　*(F)*

(17) Three-point Estimate (E) is based on the weighted average and follows triangular distribution.　*(F)* Pert is the ture

(18) PERT Estimate is based on the weighted average and follows beta distribution. *(T)*

(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.　*(F)*

(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.　*(T)*

(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. (T)

(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. (F)   Must contain no math's

(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.   (T)

(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. (T)

(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. (F)

(26) The project completion date is not based on the training, documentation and deployment because such tasks are called non-critical. (T)

(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. (F)

(28) Development effort can be estimated using Lines of Code (LOC) or Function Points (FP).   (T)

(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)≤ 3 (b) ≥ 3 (c) ≤ 7 (d) ≥ 7

(33) In a use case, transactions are classified as complex if their number is:

    (a)≤ 3   *(b) ≥ 3*   *(c) ≤ 7*   *(d) ≥ 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 x PM $^{(0.33+0.2 \text{ x } (B-1.01))}$, 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 = (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 x Size ^{B} x M,* A = 2.49, Size = 230000 LOSC, 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 = Σ14 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 × 0.01) + 0.65 and *TDI = Σ14 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. Hamdy Heniedy

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