

Exam Module1.3
Business Process Management & Enterprise Architecture
April 4, 2014

Instructions:

This is an open book exam – it is allowed to consult any reading material provided by the teachers.
Be sure to switch your mobile phone off and stow it in a closed bag.
Be sure to indicate name, program and student number on each sheet.
All questions are multiple-choice questions. You can earn 3 points for each question if you have the correct answer. A correct answer requires that **all** (there maybe more than one) and **only** the true multiple-choice options are indicated.
Success!

Question 1

What is the starting point for Business Process Management according to Weske?

- a) Activities
- b) Process Landscape
- c) Strategy
- d) Triggers
- e) Porter's value chain

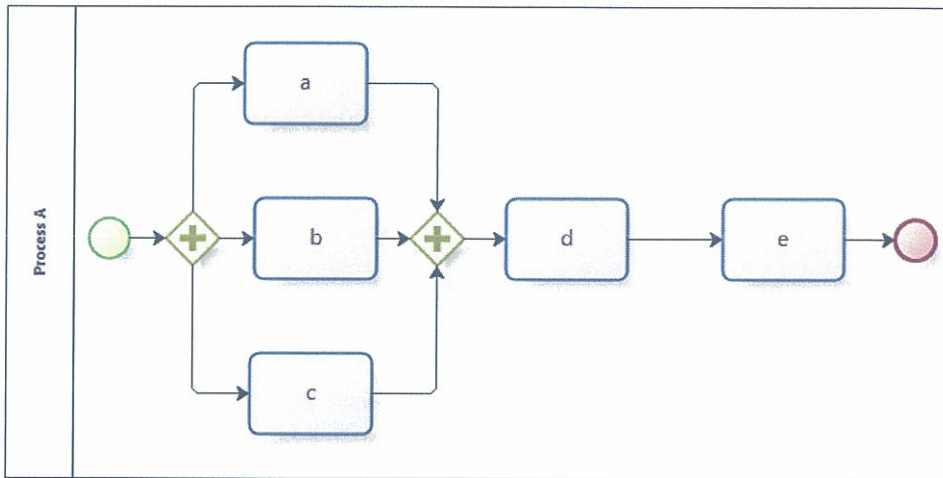
Question 2

Which of the following statements on business process models is true?

- a) A business process model represents activities in a company that cannot be automated with software systems.
- b) A business process model represents activities in a company that are designated for automation with software systems.
- c) A business process model acts as a blueprint for a set of business process instances.
- d) A business process model represents all possible or intended cases in the operational business of a company.

Question 3

Consider process A comprising activities a, b, c, d, e.

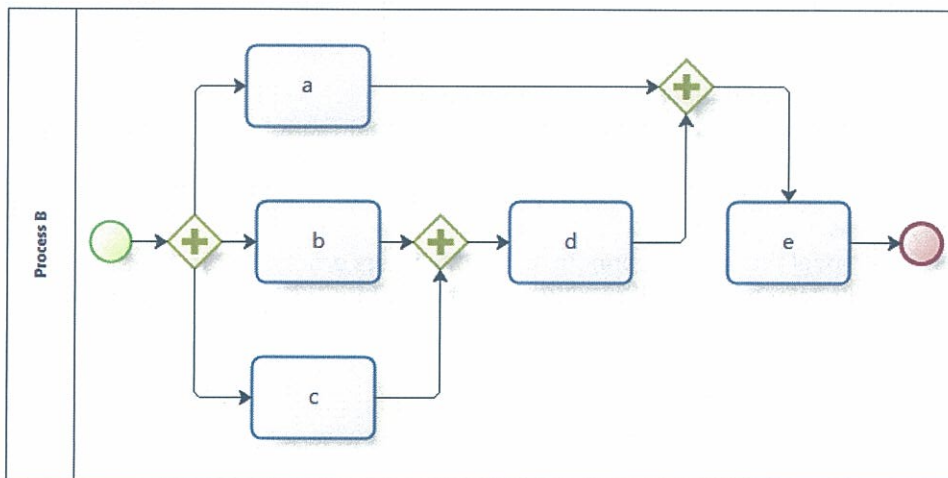


Which requirements are true for A?

- a) e requires that a, b, c, and d have completed.
- b) d requires that a, b, and c have completed.
- c) a and c are independent.
- d) a and d are independent.

Question 4

Consider process B, comprising the same activities as process A in Question 3, but representing another concurrency option for these activities.

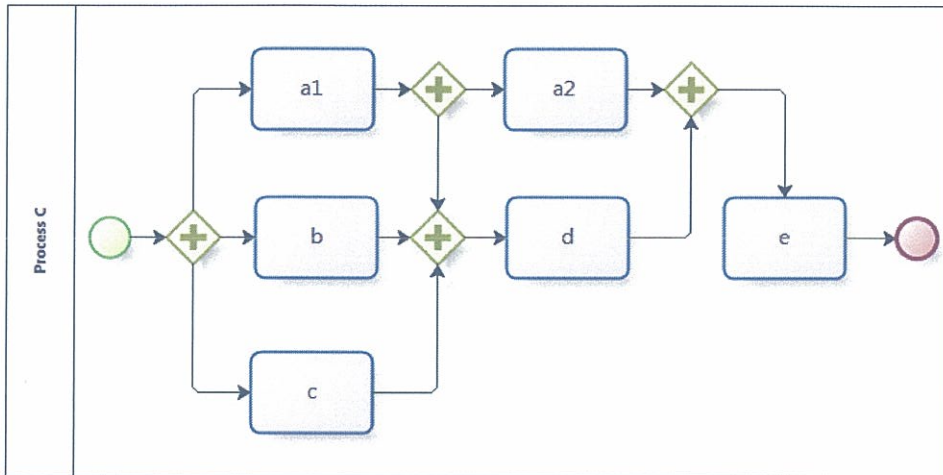


Which requirements are true for B?

- a) e requires that a, b, c, and d have completed.
- b) d requires that a, b, and c have completed.
- c) a and c are independent.
- d) a and d are independent.

Question 5

Consider another process C, with the same activities as process B in Question 4, but where activity a is refined as a1 followed by a2 (the designers found out that a is in fact a composite activity).



Assuming that a1 can easily be implemented in parallel with b, would it be correct to replace process B by process C?

- a) yes, because this best reflects our current understanding of reality.
- b) yes, because this would follow from the decomposition (expanding) of a.
- c) no, because this would unnecessarily restrict implementation options.
- d) no, because this is not consistent with the original requirements expressed by B.

Question 6

In BPMN, activities can be grouped in pools or lanes. How are the activities in different groupings related?

- a) Related activities in different lanes, but belonging to the same pool, are connected by message flows.
- b) Related activities in different pools are connected by message flows.
- c) Related activities in different pools are connected by message flows or sequence flows, depending on the nature of the relationship.
- d) Related activities in different lanes, but belonging to the same pool, are connected by message flows or sequence flows, depending on the nature of the relationship.

Question 7

How many levels of abstraction does the UML MOF (meta-modelling) have?

- a) 1 level
- b) 2 levels
- c) 3 levels
- d) 4 levels
- e) 5 levels

Question 8

What kind of split is this?



- a) AND-split
- b) XOR-split

- c) OR-split
- d) Thread split
- e) Deferred choice

Question 9

Which split belongs at the question mark in this truth-table?

A	B	A ? B
0	0	0
0	1	1
1	0	1
1	1	0

- a) AND-split
- b) XOR-split
- c) OR-split
- d) Thread split
- e) Deferred choice

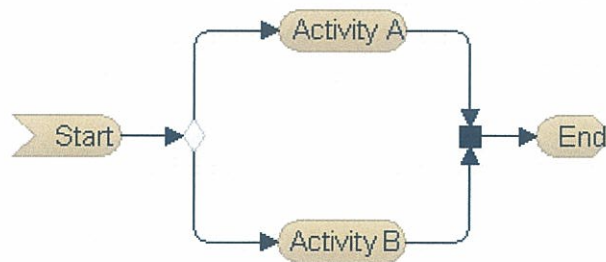
Question 10

Which view of the house of business engineering (ARIS' HOBE) has the focus in BPM?

- a) Control
- b) Organization
- c) Function
- d) Product/Service
- e) Data

Question 11

Consider the following diagram, where the white rhombus is an XOR-split, the black square is an AND-join.



If this process starts 5 times, then how many times does either A or B happen?

- a) 0 times
- b) 1 time
- c) 3 times
- d) 5 times

Question 12

Consider again the diagram of Question 12. How often does this process end?

- a) 0 times
- b) 1 time

- c) 3 times
- d) 5 times

Question 13

Which is the de facto (most used) standard language for BPM?

- a) Business Process Modelling Notation
- b) Unified Modelling Language
- c) Event-driven Process Chain
- d) Amber

Question 14

What are the tertiary processes?

- a) Processes that are at the core of the business, going from supplier to customer (process-oriented).
- b) Processes that are at the core of the business, each coming after the other (functional-oriented).
- c) Processes that support the processes at the core of the business.
- d) Processes that manage the other processes.

Question 15

Which management approach focusses on "reducing waste"?

- a) Lean
- b) Agile
- c) Waterfall
- d) BPR
- e) BPE
- f) BSC

Question 16

Which control flow pattern is not (directly) possible with BPMN?

- a) Explicit termination
- b) Structured loop
- c) Arbitrary cycle
- d) Milestone
- e) None (of the above)

Question 17

What characterizes a 'good' process model?

- a) Fit for use
- b) Answers the questions asked
- c) Enables clear communication
- d) All of the above
- e) None of the above

Question 18

What characterizes a workflow model?

- a) Fit for automation
- b) Bypassing the need for human input
- c) Explicating human tasks and system tasks

- d) Separation of process logic from application logic
- e) Prescribing concurrency of workflow instances

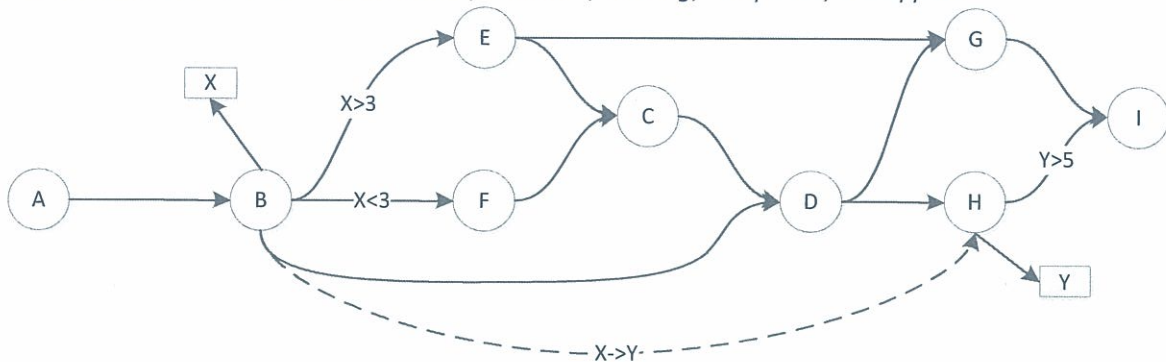
Question 19

Which statements about work items in human interaction workflows are true?

- a) A work item is associated with one workflow instance.
- b) A work item is always assigned to one application instance.
- c) A work item flows between the activities in the workflow.
- d) A work item needs to be finished before the next activity in the workflow can be started.
- e) A work item belongs to one work item list.

Question 20

Observe the following Activity net. Assume all activities have an AT_LEAST_ONE join semantic. Activities can be in one of five states: *Not activated*, *Activated*, *Running*, *Completed*, or *Skipped*.



The execution of the Activity net is started, and execution events are recorded in a log . At some point in time the execution is stopped. This is the execution log until that point:

start(A)	end(A)	start(B)	end(B) [X=3]
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Which states in the network are now *Activated*?

- a) A and B
- b) B and D
- c) E and F
- d) Only D

Question 21

Related to the same Activity net and execution log, which states are now *Completed*?

- a) A and B
- b) A, B and D
- c) B and D
- d) Only A

Question 22

Related to the same Activity net and execution log, which states are now *Skipped*?

- a) E, F and G
- b) E, F and C
- c) E and F
- d) C, E and G

Question 23

Related to the same Activity net and execution log, which states are now *Not activated*?

- a) D, G and H
- b) E, F and C
- c) G, H and I
- d) Only I

Question 24

Taking the same Activity net, but another execution with a different execution log as a result:

start(A)	end(A)	start(B)	end(B) [X=4]	start(D)
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Which states in the network are now *Activated*?

- a) A and B
- b) B and D
- c) Only E
- d) D and E

Question 25

Related to the same Activity net and execution log, which states are now *Completed*?

- a) A and B
- b) A, B and D
- c) B and D
- d) Only A

Question 26

Related to the same Activity net and execution log, which states are now *Skipped*?

- a) E, F and G
- b) Only F
- c) C, E and G
- d) E and F

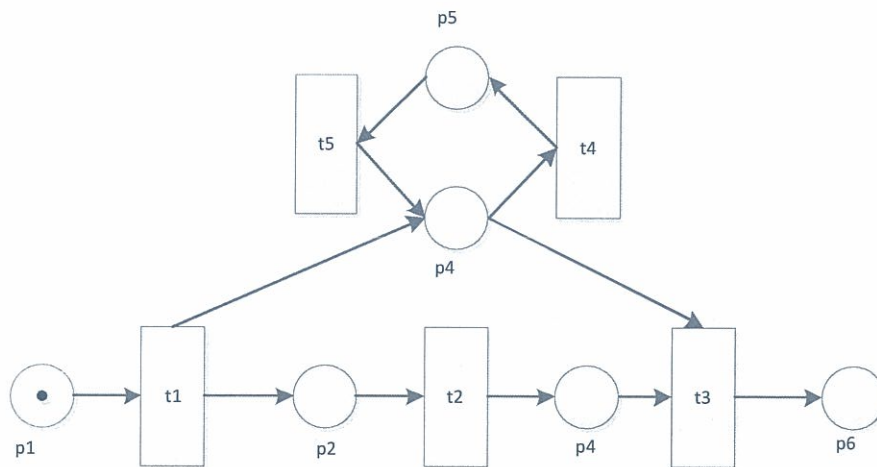
Question 27

Related to the same Activity net and execution log, which states are now *Not activated*?

- a) D, G and H
- b) E, F and C
- c) G, H and I
- d) Only I

Question 28

Consider the following E/C Petrinet for a reachability analysis.



Is it possible to reach the state in which both p_3 and p_5 carry tokens?

- a) Yes
- b) No

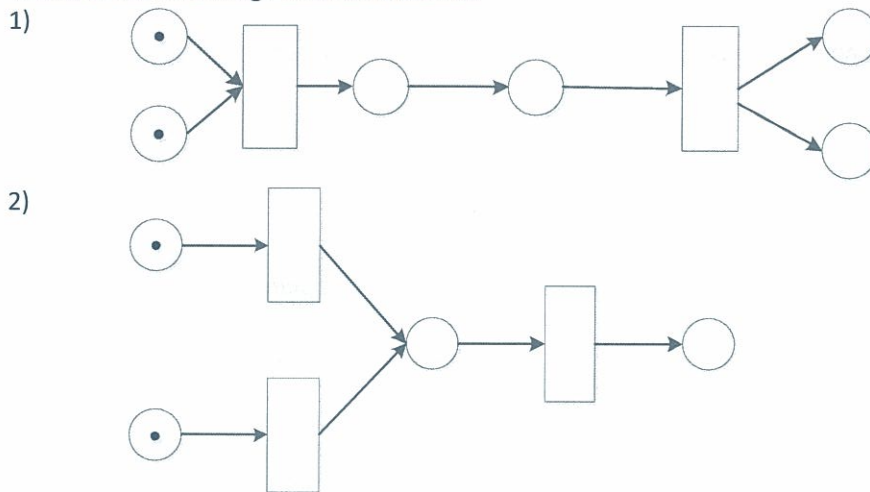
Question 29

Referring to the same Petri net, is it possible to reach a state in which only p_5 contains a token?

- a) Yes
- b) No

Question 30

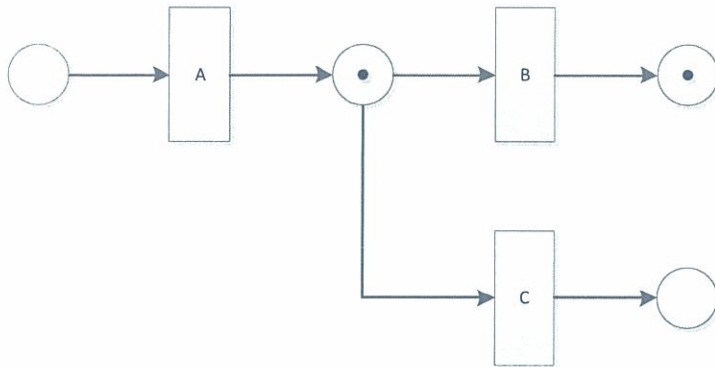
Which of the following Petri nets is sound?



- a) 1.
- b) 2.
- c) Both
- d) Neither

Question 31

Consider the following Petri net.



Which transition will fire next?

- a) A
- b) B
- c) C
- d) Because of non-determinism, we cannot say in advance.

Question 32

In Activity nets, can a process with the control flow going from A to B, and the dataflow going from B to A be executed?

- a) Yes, this can always happen
- b) Yes, if we assume that input is not immediately consumed at the start of the activity
- c) Yes, if we assume that the output can be generated before the activity is started
- d) No, this process cannot be executed.

Question 33

What is the result of a deadpath elimination in Activity nets?

- a) Elimination of all running activities of a dead path.
- b) Skipping of all activities of a non-selected path.
- c) Compensation of all activities of a dead path.
- d) Abortion of all workflow activities.

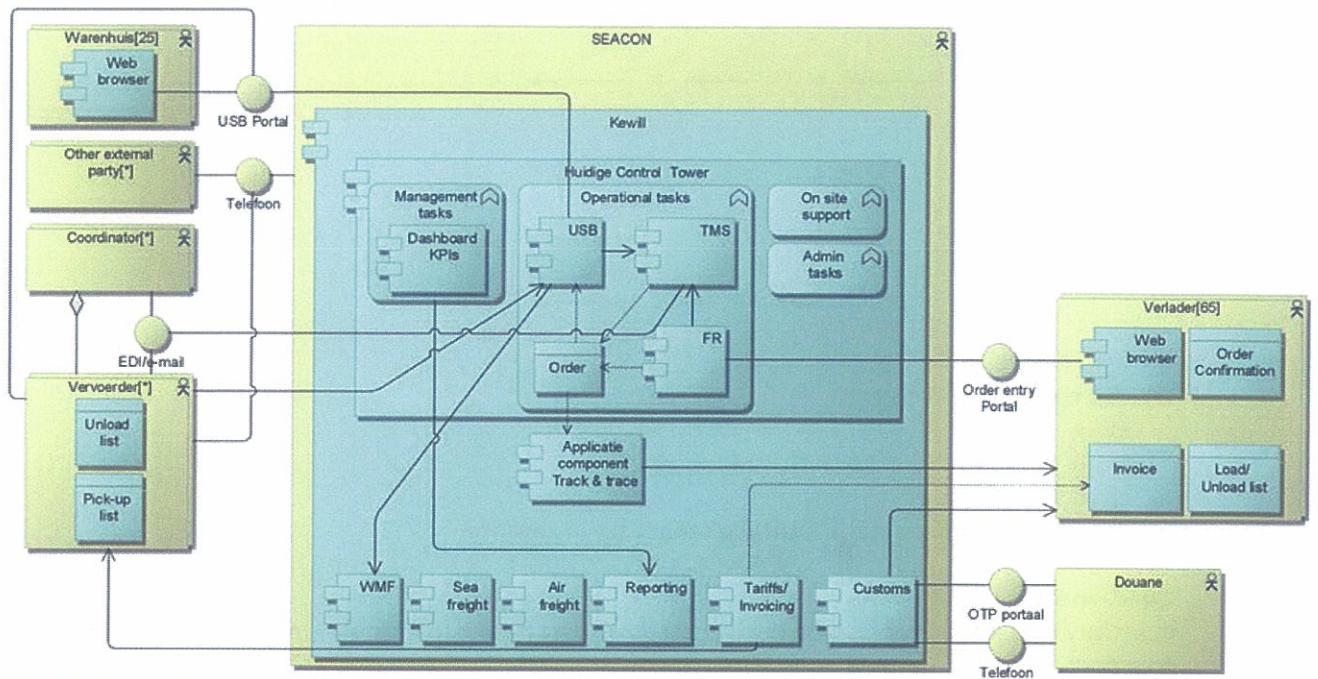
Question 34

In which of the TOGAF ADM phases a gap analysis can take place?

- a) Phase A
- b) Phase B, C, or D
- c) All TOGAF ADM phases
- d) In the requirements management phase

Question 35

Consider the model below.



Which of following statements is true?

- The model shows a layered view on architecture.
- The model contains concepts from two layers.
- All interactions between the modeled actors go through an interface.
- This model represents a view which reflects best the concerns of a business analyst type of stakeholder.