

Exam/(Partial)test. BIT Module 1.3 BIIT part BPM&EA
Bachelor (year 1) (B-BIT, B-TBK)(BMS, EEMCS)

Module/course code: 201300107 and 201300108

Date: 4 April 2016

Time: 13:45 – 15:30 (+25% for students who may use extra time)

Module-coördinator: Maria Iacob

Instructors: Marten van Sinderen, Lucas Meertens

Type of test:

- Closed book, multiple choice

Allowed aids during the test:

- No aids allowed

Attachments:

- Multiple Choice form

Additional remarks:

- Quantity of questions, quantity of pages, parts, scoring...

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Exam BIT Module 1.3 Business Intelligence and IT, Part BPM & EA

Module code: 201300107; 201300108

Exam date: April 4, 2016

Instructions

This is a closed book exam – it is not allowed to consult any reading material.

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.

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.

Your mark is calculated with the formula $M = (P/96)*9 + 1$, where P is the number of points obtained with your answers to the questions.

Success!

Multiple choice questions

Question 1

According to Weske, a business process is enacted by a single organization, but may interact with business processes performed by other organizations. Why is there a distinction between interactions within an organization and between organizations?

- (a) Interactions within an organization have a shorter time duration than interactions between organizations.
- (b) Interactions within an organization have shorter distances to bridge than interactions between organizations.
- (c) Interactions within an organization are more easily controlled than interactions between organizations.

Question 2

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 3

Which of the following statements is/are true?

- (a) A process orchestration is part of a process choreography.
- (b) A process choreography is part of a process orchestration.
- (c) A process choreography describes the interactions within a business organization.
- (d) A process orchestration describes the interactions between business organizations.
- (e) A process choreography describes the interactions between business organizations.

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Question 4

Which is the starting point for the business process methodology (as presented by Weske)?

- (a) Process design
- (b) Strategy and organization
- (c) Process landscape design
- (d) Operations and controlling

Question 5

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	1

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

Question 6

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

- (a) Business Process Modelling Notation
- (b) Unified Modelling Language
- (c) Event-driven Process Chain
- (d) Amber
- (e) Yet Another Modeling Language
- (f) Petri nets

Question 7

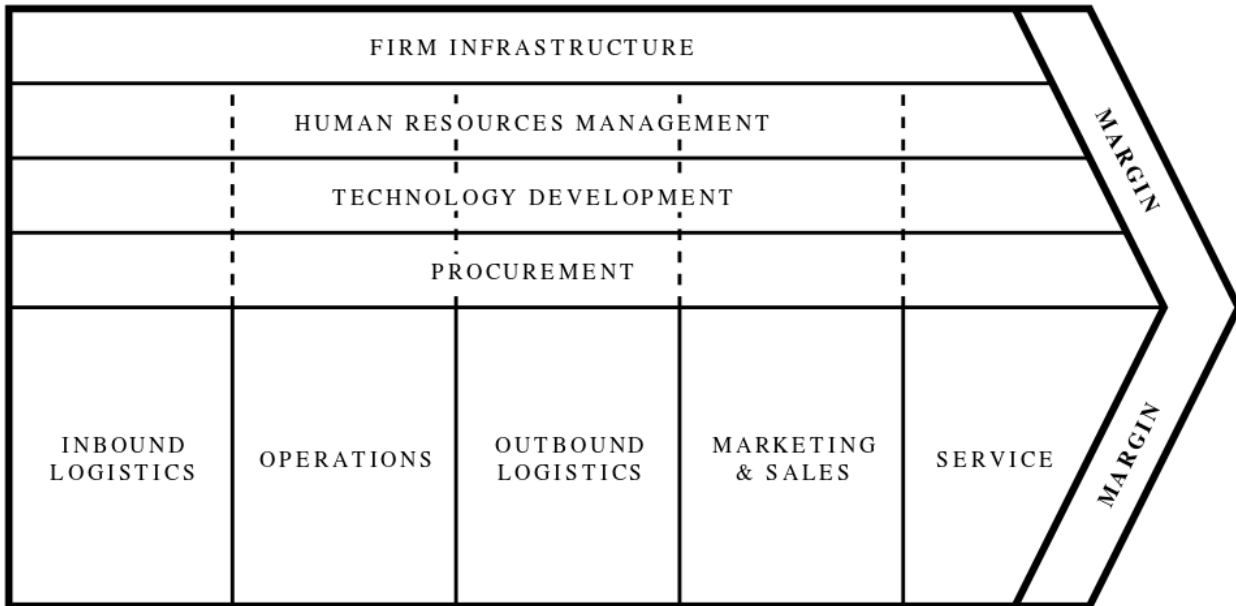
In April 2015, procesje.nl posted the following headline: "EU makes ABC obligatory for business process models" (instead of ABC, it mentioned the name of the de facto standard from the previous question). This was an April's fool joke, as a "good" process model should be: Fit for use. What else characterizes a "good" process model?

- (a) Answers the questions asked
- (b) Enables clear communication
- (c) Modelled from left to right
- (d) None of the above

Question 8

Which well-known concept does the image below show?

- (a) Porter's value chain
- (b) Process landscape design
- (c) An ERP system
- (d) House of Business Engineering
- (e) Lean value stream



Question 9

The above image shows primary and secondary activities. What are 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 10

According to the above classification of processes, which of the following is/are support processes.

- (a) Handling requests from employees to take their annual vacation
- (b) Reimbursing travel expenditures to employees when returning from a business travel
- (c) Handling customer complaints (complaint-to-resolution)
- (d) Producing the annual report of the company
- (e) Recovering overdue payments from customers

Question 11

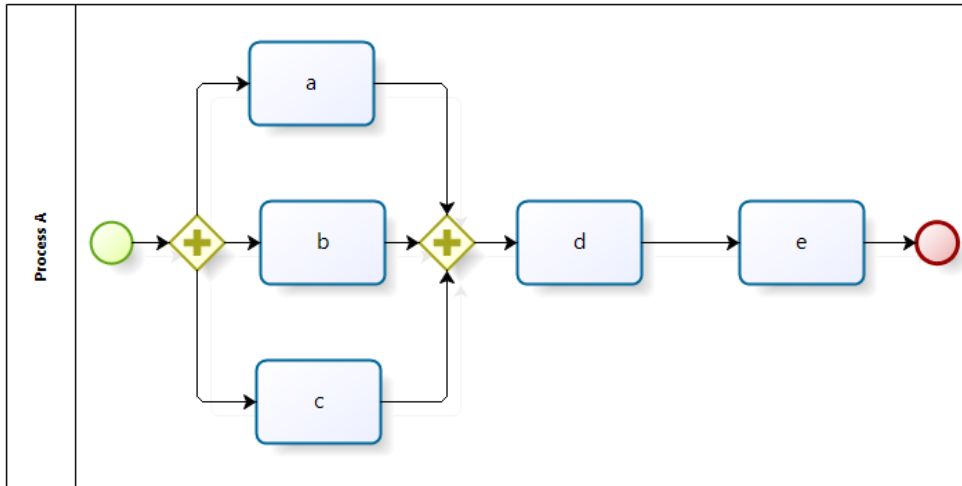
Which of the following relationships between business processes and services is true?

- (a) A business process can coordinate the use of services.
- (b) A service can implement a business process.
- (c) A service can coordinate the collaboration between business processes
- (d) A business process can provide a service

Question 12

Consider the figure below with process A comprising activities a, b, c, d, e. Which statements are true for A?

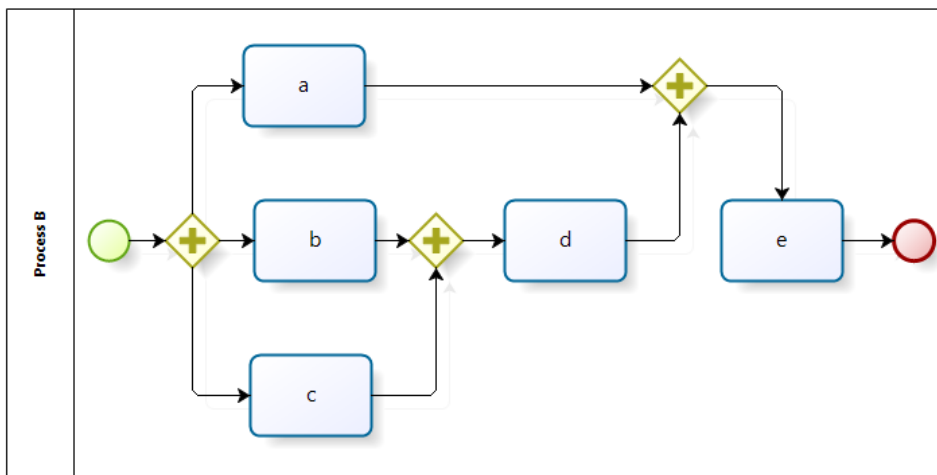
- (a) d requires that a, b, and c have completed.
- (b) either a, b, or c should be completed before d can start.
- (c) e requires that d has completed.
- (d) c and d are independent.
- (e) b and c are independent.



Question 13

Consider the figure below with process B, comprising the activities a, b, c, d, e. Which statements are true for B?

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



Question 14

Which of the following statements about workflow management systems (WfMS) is/are true?

- (a) A WfMS is an information system that is process-aware.
- (b) A WfMS automates the message flow between different business processes.
- (c) A WfMS separates process logic from application code.
- (d) A WfMS separates workflow definition from workflow execution.
- (e) A WfMS tightly couples application code with process code for efficiency reasons.

Question 15

Which of the following statements about human interaction workflows (HIWF) is/are true?

- (a) A HIWF consists entirely of activities that require human involvement.
- (b) A HIWF consists of a mixture of activities that require human involvement and activities that are implemented by enterprise applications.
- (c) A HIWF has message exchanges with both human workers and software applications using synchronous interactions.
- (d) A HIWF has interactions with human workers using asynchronous interactions.

Question 16

Workflow management systems have a buildtime and a runtime component. Which of the following statements is/are true?

- (a) At buildtime, the allocation of work to specific human actors has to be specified.
- (b) At buildtime, the progress of workflow instances has to be monitored.
- (c) At runtime, different instances of the same workflow should involve the same human actors.
- (d) At runtime, different instances of the same workflow can have different execution logs.
- (e) At runtime, different instances of the same workflow should leave data in the same state.

Question 17

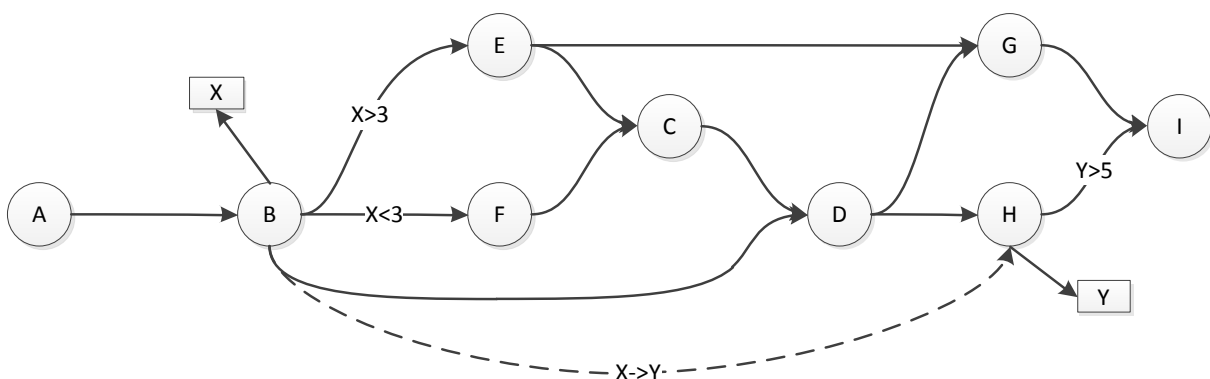
Web services technology is underpinned by a set of core standards that allow discovery and invocation of deployed Web services in networked environments. Which are these core standards

- (a) HTTP, TCP/IP, and REST
- (b) WSDL, SOAP, and UDDI
- (c) WSDL, SOAP, and BPEL
- (d) HTTP, SOAP, and REST

Question 18

Consider the Activity net in the figure below. 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*. Which of these activities are always executed (choose the most complete answer)?

- (a) A and B.
- (b) A, B, and I.
- (c) A, B, D, H, and I.
- (d) A, B, D, G, H, and I.



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Question 19

Consider the Activity net of the previous question. 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 activity/activities is/are Activated?

- (a) D
- (b) A and B
- (c) A, B, and D
- (d) D and H

Question 20

For the same Activity net and execution log, which activity/activities is/are Completed?

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

Question 21

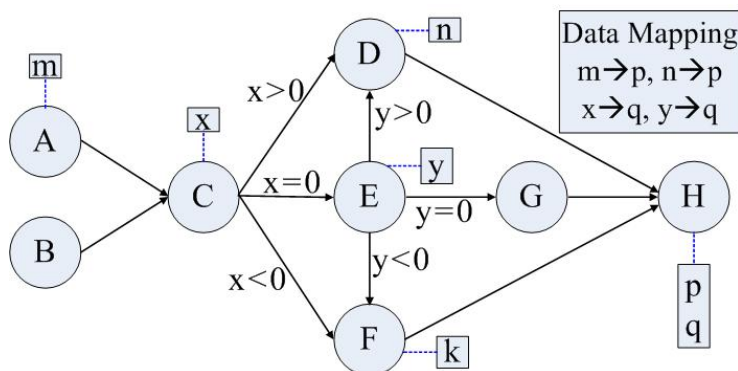
For the same Activity net and execution log, which activity/activities is/are Running?

- (a) A
- (b) D, G and H
- (c) C, E and F
- (d) None of the above

Question 22

Consider the following Activity Net S and assume that all activities have join semantics AT_LEAST_ONE. Note that m, n, x, and y are output data items while k, p, and q are input data items. Activities can be in one of five states: *Not activated*, *Activated*, *Running*, *Completed*, or *Skipped*. Which activities will always get executed for completed workflow instances on S, independent from the concrete execution path taken (pick the most accurate answer)?

- (a) A, B, and C
- (b) A and H
- (c) A, B, C and G
- (d) A, B, C and H



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Question 23

Regarding the previous activity net, observe the following execution log:

START(A)	END(A) [m = 3]	...	START(H)	END(H) [p = 5]
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Which statement(s) is/are true?

- (a) A has the state completed
- (b) F has been skipped
- (c) G has been completed
- (d) H has the state activated

Question 24

Regarding the previous activity net, observe the following execution log:

...	END(E) [y = -20]
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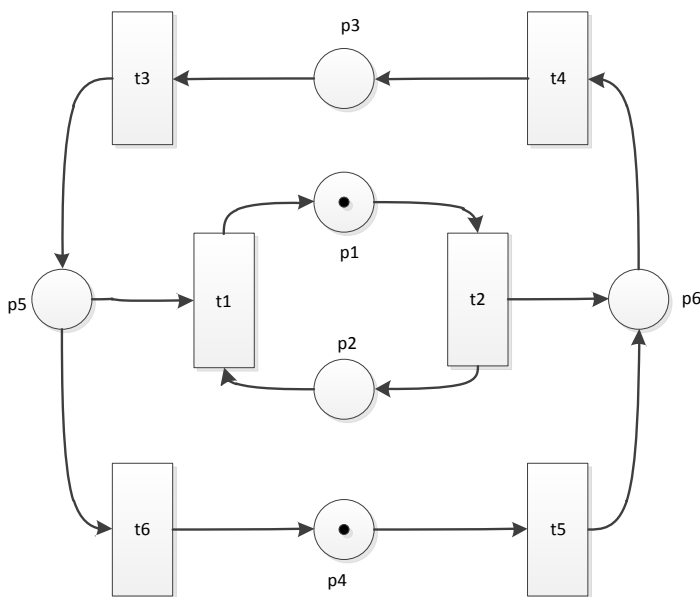
Which statement(s) is/are true?

- (a) A has been completed
- (b) B has been skipped
- (c) F has been skipped
- (d) G has been completed

Question 25

Consider the P/T net in the figure below. What is the maximum number of tokens in the network?

- (a) 2
- (b) 3
- (c) 5
- (d) Infinite



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Question 26

Related to the same P/T net, how many different markings does the network have?

- (a) 8
- (b) 11
- (c) 14
- (d) 17

Question 27

Related to the same P/T net, which of the following two transitions are never enabled at the same time?

- (a) t1 and t2
- (b) t2 and t3
- (c) t3 and t4
- (d) t4 and t5

Question 28

Related to the same P/T net, what is the maximum number of transitions enabled at the same time?

- (a) 1
- (b) 2
- (c) 3
- (d) 4

Question 29

Which statement is true?

- (a) Every P/T net can be expressed as an E/C net.
- (b) Every E/C net can be expressed as a P/T net.
- (c) Both are true.
- (d) Neither are true.

Question 30

Story points are used in the agile Scrum method. During their guest lecture, CAPE groep gave an example of this, including a burn down chart. What are story points?

- (a) A unit to measure progress in software development.
- (b) The amount of hours it takes to complete a story.
- (c) A unit to measure the quality of a story.
- (d) A unit to measure the performance of an application.
- (e) A unit to measure the quality of a software engineer.

Question 31

"The only certainty is change" is a quote from the guest lecture of CAPE groep. To which abbreviation of the regular lectures does this relate?

- (a) VUCA
- (b) WOTTA
- (c) ERP
- (d) BPR
- (e) 5 Ws
- (f) HOBE

Question 32

Consider the model below. Which of these statements is **false**?

- (a) The model shows a layered view on architecture.
- (b) Between each two consecutive layers there is a service layer.
- (c) This model covers all ArchiMate aspects: information (a.k.a. passive structure), behavior and active structure
- (d) In the model several supply chain actors are modelled.

