Question 1 Which of the following statements best describes both verification and validation?

a) Validation confirms the software is syntactically correct, verification confirms it operates according to the specification

b) Validation confirms the software is good for the end user, verification confirms it works according to the specification

c) Validation confirms the software is good for the end user, verification confirms that can be proved to work correctly in all cases

d) Validation confirms the software is syntactically correct, verification confirms that can be proved to work correctly in all cases

e) None of the above

Question 2 Looking at the class diagram shown in Figure 1, which of the following describes all the IS-A relationships.

a) B is an A, C is an A, E is a C, F is a D only

b) B is an A, C is an A, E is a C, E is an A, F is a D only

c) C is a B, D is a C, F is an E only

d) B is a C, C is a D, E is an F only

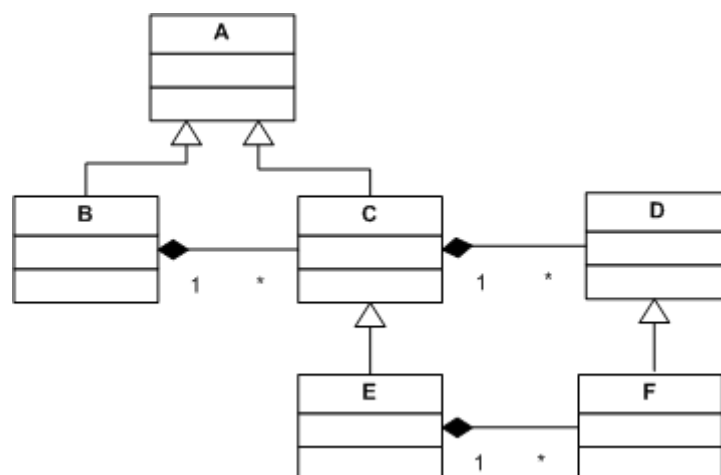e) A is an B, A is an C, C is a A, A is an E, D is a F only

Figure 1 Class Diagram

Question 3 Looking at Figure 1, which of the following best describes all of the IS PART OF relationships?

a) B is part of C, C is part of D, E is part of F
b) B is part of C, C is part of D, E is part of F
c) B and C are part of A, E is part of F, C is part of D
d) C is part of B, D is part of C, F is part of E and D is part of B
e) E and F are part of C and D

Question 4 Look the Figure 2, which of the following would be the best match (note not all use cases are shown):

a) UseCase 1 Check item is in stock, UseCase2 Item out of stock inform customer, UseCase 3 Payment failed
b) UseCase1 Take payment, UseCase2 Payment failed, UseCase 3 Item out of stock
c) UseCase1 Take payment, UseCase2 Invalid product code, UseCase 3 Item out of stock
d) UseCase 1 Check item is in stock, UseCase2 Item out of stock inform customer, UseCase 3 Take payment
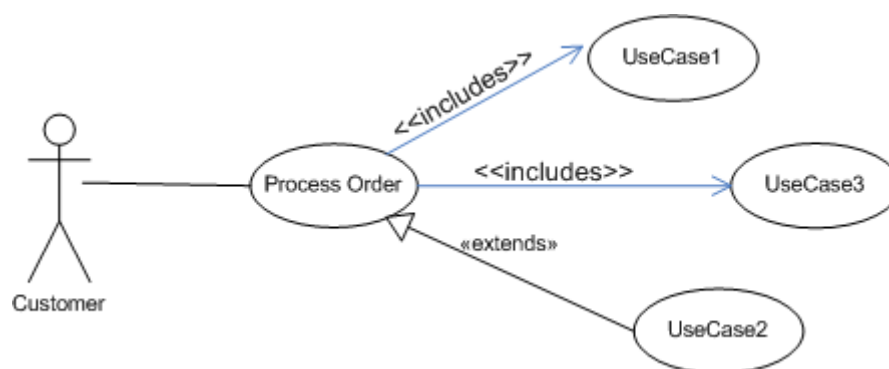e) UseCase 1 Take payment, UseCase2 Item out of stock inform customer, UseCase 3 Payment failed

Figure 2 Actor model

Question 5   Consider the Petri Net in Figure 3 with places p1, p2, p3 and p4 and   transitions t1, t2 and t3. For the given initial state of the system shown in Figure 3, which transitions are enabled?

    a) Any two of T1, T2 and T3
    b) T1, T2 and T3
    c) T1 and T2 only
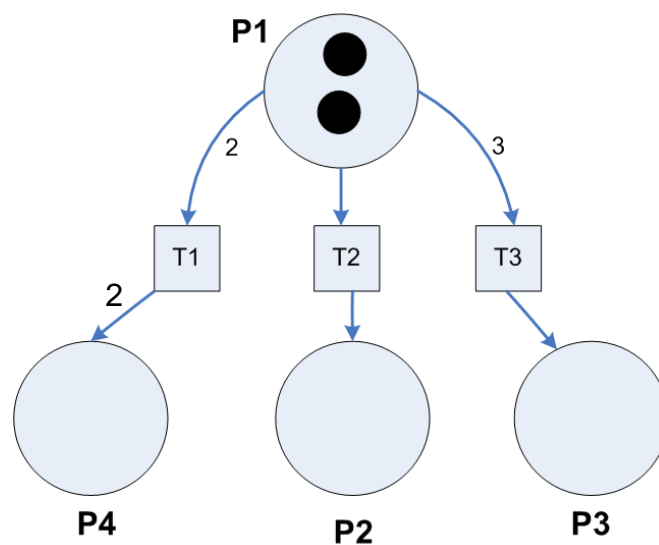   d) T3 only
    e) No transitions

Figure 3 Simple Petri Net

Question 6.   When the Petri Net shown in Figure 3 fires, which transitions will fire, and after firing what will be the state of the net?

    a)   T1 will fire and the state will be (0,0,0,2)

    b)   T2 will fire and the state will be (0,1,0,0)

    c)   T3 will fire and the state will be (0,0,3,0)

    d)   T1 or T2 will fire we cannot determine which, if T1 fires the state will be (0,0,0,2), if T2 fires the state will be (1.1.0.0)

    e)   T1, T2 and T3 will fire we cannot determine which the state of the net will be random

Question 7   Which of the following statements about cohesion and couple is true

   a) High cohesion and high coupling lead to high quality software
   b) Low coupling makes software hard to test, high cohesion leads stronger software with less bugs
   c) Low coupling and high cohesion makes software easier to test and debug
   d) High coupling makes the software run faster, low cohesion is a part of the syntactic structure of the code
   e) Coupling and cohesion are only relevant for distributed systems

Question 8   Which of the following are features of black box testing?

X1   Code is hidden

X2   Path testing is done

X3   Software is tested according to specification using test cases

X4   Boundary cases are used

X5   Loop testing is done

   a) All of the above
   b) X1, X2, X3 and X4
   c) X1,X2, X3 and X5
   d) X1,X3 and X4
   e) X2,X3,X4 and X5

Question 9   Which of the following best describes high software robustness?

   a) Low chance of software failure
   b) Low chance of data low on crash
   c) Low chance of software testing failure
   d) Strong coupling between modules
   e) High speed of execution

Question 10 Which of the following are non-functional requirements?

X1   User uses username and password to login
X2   Passwords must be at least 10 characters long
X3   Development team uses ISO9000 quality standard
X4   Development is done in Java
X5   The system scans and processes paper sourced documents.

   a) X1,X2,X3 and X4
   b) X2,X3 and X4
   c) All of the above
   d) X1 and X5
   e) X2, X2,X4 and X5