

ISTQB – BCS Certified Tester Foundation Level

Sample Paper B

Record your surname/last/family name and initials on the Answer Sheet.

Attempt all 40 multiple-choice questions – 1 mark awarded to each question.
Mark only one answer to each question.

There are no trick questions.

A number of possible answers are given for each question, indicated by either A. B. C. or D. Your answers should be clearly indicated on the Answer Sheet.

Pass mark is 26/40

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Modified/updated by QA.

- 1 How does software testing contribute to the quality of delivered software?
- A By detecting and removing all the defects in the delivered code and ensuring that all tests adhere to the quality standards set for the project.
 - B By measuring reliability of the software and ensuring that it is always above 99.99%.
 - C By identifying root causes of defects from past projects and using the lessons learned to improve processes and thus help to reduce the defect count.
 - D By detecting all deviations from coding good practice and ensuring that these are corrected.
- 2 An iPhone application identifies and counts all purchases of a particular product from a shopping website. The application as implemented incorrectly counts purchase attempts by including both failed attempts, and also those where the purchase was terminated by the user before completion. When the code was executed in testing it was found that the problem was located in the 'purchase identification' module, where the first stage in the purchasing process was counted, rather than a successful confirmed purchase. Which of the following statements **CORRECTLY** identifies what has happened?
- A The application failed because of a defect in the purchase identification module caused by a programmer mistake or a fault in the specification.
 - B An error by the programmer led to a mistake in the purchase identification module and this caused the application to fail.
 - C A defect in the purchase identification module caused by a mistake in the module specification led to an error in the overall application.
 - D A fault in the specification led to an error in the purchase identification module which caused a failure in the application.
- 3 Which of the following is a valid objective of testing?
- A Correcting defects.
 - B Confirming target delivery dates.
 - C Finding defects.
 - D Ensuring no defects are present.

- 4 Which of the following is a valid objective of acceptance testing?
- a. Finding defects – both in software and manuals.
 - b. Establish confidence in the system.
 - c. Deal with incomplete / undocumented requirements.
 - d. Ensuring that all related systems interact successfully.
 - e. Assessing readiness for deployment and use.
- A a and c only.
B b and c only.
C a and b only.
D b and e only.
- 5 Which statement **CORRECTLY** describes debugging?
- A Testers identify defects, developers locate and correct defects, testers confirm the correction has cleared the original defect.
B Developers identify defects, testers locate defects, developers correct and confirm the correction has cleared the original defect.
C Testers identify and locate defects, developers correct defects and confirm the correction has cleared the original defect.
D Developers identify, locate and correct defects, testers confirm the correction has cleared the original defect.
- 6 Which of the **MAIN** activities of the fundamental test process does the task 'verify the test environment set up is CORRECT' relate to?
- A Planning and control.
B Analysis and design.
C Implementation and execution.
D Evaluating exit criteria and reporting.
- 7 Which of the following characteristics is **MOST LIKELY** to promote effective software testing?
- A Independence from the development process.
B A belief that programmers always make mistakes.
C Knowledge of the number of defects typically found in a program.
D Confidence that the next stage will find defects missed at this stage.

- 8 Which of the following statements about software development models is **MOST** accurate?
- A The 4 stage V model is always the best choice of software development model for any project.
 - B The agile development model is usually most appropriate for short projects.
 - C The choice of software development model depends on product and project characteristics.
 - D The 2 stage V model is the most appropriate development model for simple products.
- 9 When **SHOULD** testers be involved in reviewing a UAT specification?
- A At the beginning of the project.
 - B As soon as requirements have been approved.
 - C As soon as the UAT specification has been drafted.
 - D At any time before UAT begins.
- 10 Which of the following accurately defines the integration testing test level?
- A Test basis includes software and system design, test objects include interfaces, and tests concentrate on the interactions between different parts of a system.
 - B Test basis includes component requirements, test objects include database modules, and tests concentrate on the behaviour of the system as a whole.
 - C Test basis includes business processes, test objects include system configuration and configuration data, and tests concentrate on establishing confidence in the system.
 - D Test basis includes use cases, test objects include user procedures and tests concentrate on a high level model of system behaviour.
- 11 Which of the following would **TYPICALLY** be used as the test basis for Acceptance Testing?
- a. System design.
 - b. System configuration.
 - c. Risk analysis reports.
 - d. System requirements.
 - e. Business use cases.
- A c, d, e only.
 - B a, b, d only.
 - C b, c, d only.
 - D a, b, e only.

- 12 At which test level(s) can both functional and structural tests be used together?
- A At the component test level only.
 - B At all test levels.
 - C At integration testing and system testing levels only.
 - D At all levels from integration testing to acceptance testing.
- 13 Which of the following statements **BEST** characterises maintenance testing?
- A Maintenance testing is triggered by changes to delivered software and uses impact analysis to minimise the amount of regression testing needed.
 - B Maintenance testing is triggered by changes to software under development before initial delivery and uses the test plan to determine how much regression testing to do.
 - C Maintenance testing is triggered by changes to the test environment and uses testing tools to perform regression testing.
 - D Maintenance testing is triggered by changes to the software environment and uses structural testing to ensure the changes function correctly.
- 14 Under which of the following circumstances is maintenance testing required?
- A Migration of software onto a new platform.
 - B Testing during initial development of a replacement for an existing system.
 - C Purchase of a new testing tool.
 - D Updating of a regression suite.
- 15 Which of the following **BEST** defines static techniques?
- A Executing the software work product and analysing actual results.
 - B Manually examining the code or software documentation without automated analysis.
 - C Automated analysis of the code or software documentation without manual examination.
 - D Manual examination and automated analysis of code or software documentation.
- 16 Which of the following is a role in a formal review?
- A Adjudicator.
 - B Moderator.
 - C Governor.
 - D Corrector.

- 17** Which from the following list are **TYPICALLY** found to enable the review process to be successful?
- a. Each review has clear defined objectives.
 - b. The lower the number of defects, the better the review process.
 - c. The right people for the review objective are involved.
 - d. There is an emphasis on learning and process improvement.
 - e. Management are not involved in the process at all.
 - f. Checklists should not be used, as these slow down the process.
- A** a, b and d only.
B b, c and f only.
C a, c and d only.
D d, e and f only.
- 18** Which of the following would **TYPICALLY** be identified using static analysis by tools?
- A** Incorrect error handling.
B A potential infinite loop.
C Memory leakage.
D A variable being set to the wrong value.
- 19** Before an invoice can be created, an account is required. Before an account can be set up, an account user is required (in order to set up the account). The software is delivered with a master user only, who can only create other types of users. The following test cases have been written to test the high-level structure of the software.
- a. Create an invoice.
 - b. Amend an invoice.
 - c. Process an invoice (send to customer).
 - d. Delete an invoice.
 - e. Create an account.
 - f. Create an account user.
 - g. Amend an account user.
 - h. Delete an account user.
 - i. Amend an account.
 - j. Delete an account

Which of the following test procedures would enable all tests to be run?

- A** f, g, a, c, b, d, e, i, j, h.
B e, i, a, c, b, d, f, g, h, j.
C e, i, f, g, a, c, b, d, h, j.
D f, g, e, i, a, b, c, d, j, h.

20 Which of the following test case design techniques is white box (structure-based)?

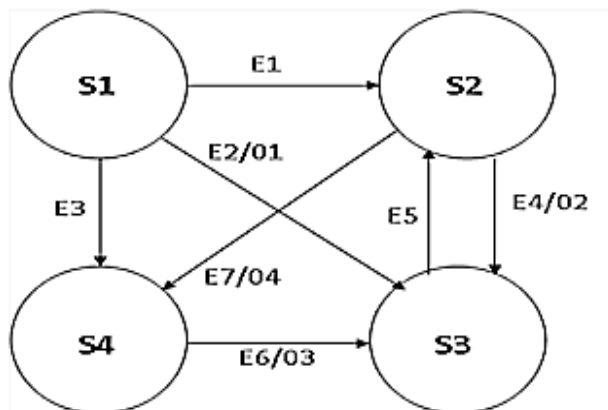
- A** Use case testing.
- B** State transition testing.
- C** Decision testing.
- D** Equivalence partitioning.

21 From the following list, which of the following apply to experience-based techniques?

- a. Test cases are derived from a model of the problem to be solved or the software.
- b. Test cases are derived from the knowledge of the testers.
- c. The knowledge of testers, developers and users is used to drive testing.
- d. The internal structure of the code is used to derive test cases.

- A** a and b only.
- B** c and d only.
- C** a and d only.
- D** b and c only.

22 A test case starts at S1 and triggers 4 events in sequence: E1, E4, E5, E7. What will be the finishing state and the output(s) from the test case?



- A** S2 and O4.
- B** S4 and O2.
- C** S2 and O2.
- D** S4 and O4

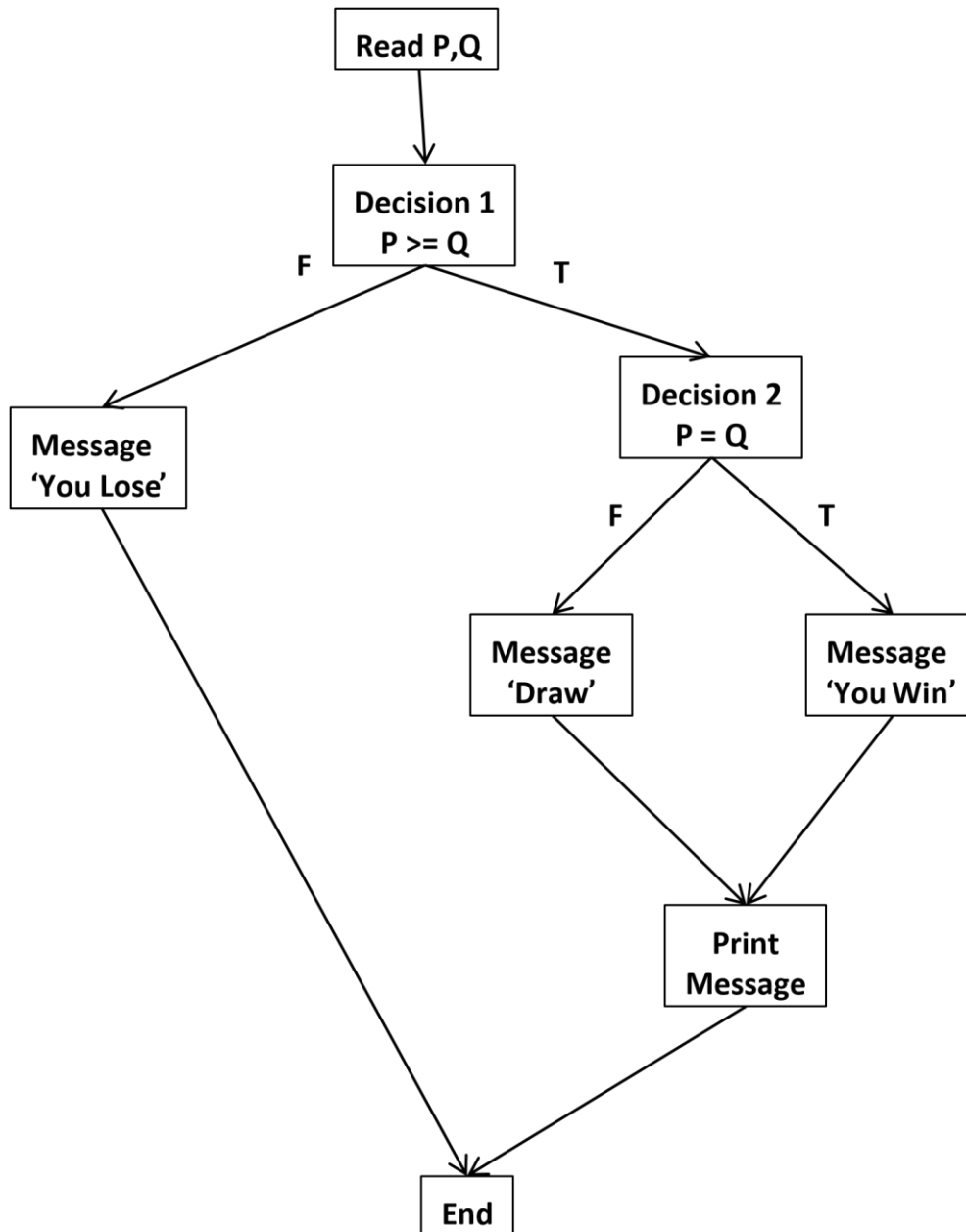
- 23 The Cambrian Pullman Express has special ticketing requirements represented by the partial decision table below.

Conditions	Rule 1	Rule 2	Rule 3	Rule 4	Rule 5	Rule 6	Rule 7
First class ticket	Y	N	N	N	Y	N	N
Std class flexible ticket	N	Y	N	N	N	Y	N
Std class day return	N	N	Y	N	N	N	N
Std class super saver	N	N	N	Y	N	N	Y
Railcard holder	N	N	N	N	Y	Y	Y
Actions							
OK to travel	Y	N	N	N	Y	N	N
Eligible for upgrade	N	Y	N	N	N	Y	N
Concessionary fare	N	N	N	N	Y	Y	N

Carol has a student railcard and is travelling on a Flexible Standard Class ticket. James has a senior railcard and is travelling on a super saver ticket. Which of the options represents the **CORRECT** actions for these two test cases?

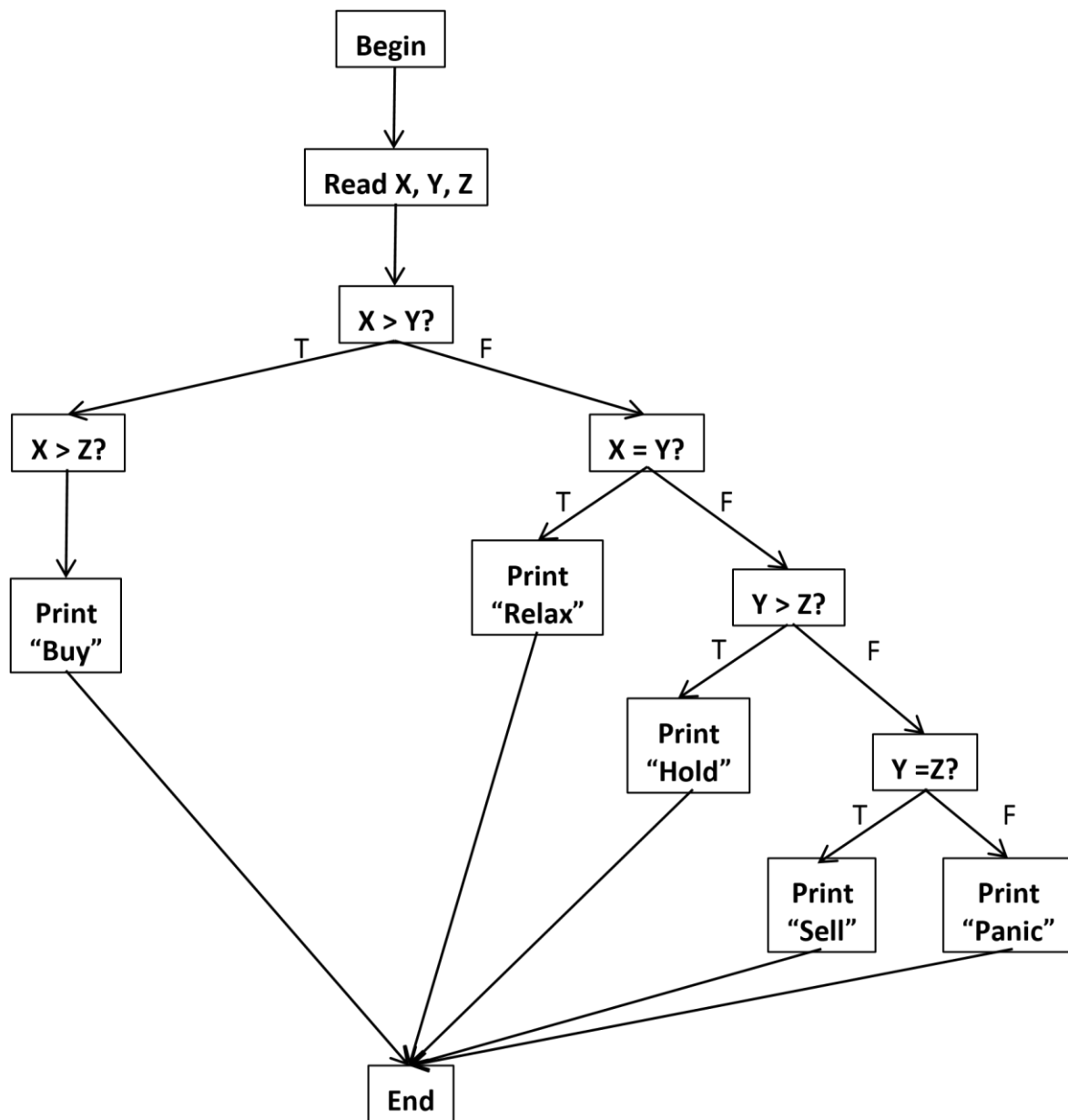
- A Carol is not OK to travel, but is eligible to upgrade and eligible for a concessionary fare; James cannot use the service.
- B Carol is OK to travel and is eligible for a concessionary fare; James is eligible for an upgrade.
- C Carol and James are both eligible to travel and to upgrade.
- D Carol is OK to travel but not to upgrade; James cannot use the service.

24 Which set of test cases below will exercise both outcomes from “Decision 2”?



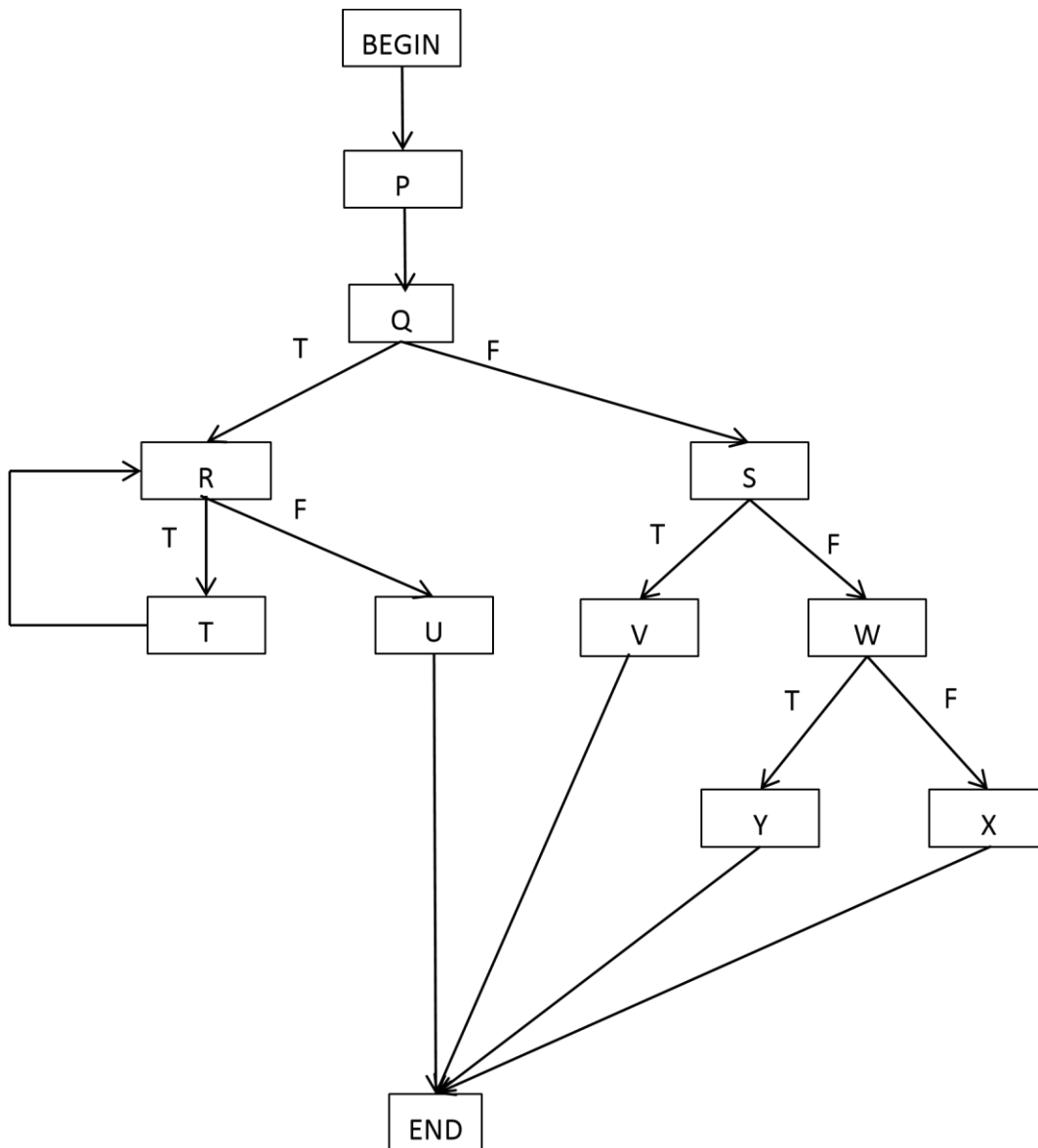
- | | | |
|----------|---------------------|------------------|
| A | TC1: P = 24, Q = 20 | TC2: P=24, Q=25. |
| B | TC1: P = 36, Q = 36 | TC2: P=37, Q=35. |
| C | TC1: P = 42, Q = 43 | TC2: P=42, Q=42. |
| D | TC1: P = 37, Q = 36 | TC2: P=35, Q=36. |

- 25 Which of the following test cases will ensure that the statement 'Print "Hold"' is exercised?



- A X=2, Y=2, Z=2.
- B X=2, Y=3, Z=4.
- C X=2, Y=4, Z=3.
- D X=4, Y=3, Z=2.

- 26** The flow graph below shows the logic of a program for which 100% statement coverage and 100% decision coverage is required on exit from component testing.



The following test cases have been run:

Test Case 1 covering path P,Q,R,U.
Test Case 2 covering path P,Q,S,V.
Test Case 3 covering path P,Q,S,W,X.
Test Case 4 covering path P,Q,S,W,Y.

- A** Statement coverage is 100%; decision coverage is 100%.
- B** Statement coverage is less than 100%; decision coverage is 100%.
- C** Statement coverage is 100%; decision coverage is less than 100%.
- D** Statement coverage and decision coverage are both less than 100%.

- 27 Which of the following is a valid reason for writing test cases based on experience and intuition?
- A Use of formal techniques requires expensive training.
 - B Only experience can ensure all functionality is covered.
 - C Tests based on experience and intuition can supplement formal techniques.
 - D Formal techniques require the use of expensive tools.
- 28 Which of the following test design techniques is classified as a structure-based (white box) technique?
- A Exploratory testing.
 - B Decision table testing.
 - C State transition testing.
 - D Statement testing.
- 29 Why is independent testing important?
- A Because independent testers make fewer assumptions than developers.
 - B Because independent testers are less prone to making errors than the development team.
 - C Because independent testers can verify assumptions made during specification and implementation of the system.
 - D Because independent testers have a greater sense of responsibility for quality than developers.
- 30 Which statement **BEST** describes when test planning **SHOULD** be performed?
- A Test planning is performed only once, at the beginning of the life cycle, and generates a Master Test Plan.
 - B Test planning is performed at the beginning of the life cycle and again at the beginning of test execution.
 - C Test planning is performed at the beginning of the testing phase and again at the beginning of every test level.
 - D Test planning is performed continuously in all life cycle processes and activities.

- 31 The following test cases need to be run, but time is limited, and it is possible that not all will be completed before the end of the test window. The first activity is to run any re-tests, followed by the regression test script. Users have supplied their priority order to tests. Which of the following gives an appropriate test execution schedule, taking account of the prioritisation and other constraints?

#	Description	Priority	Note
a	Re-test defect no.52	Low	Re-test
b	Ability to amend transaction type	High	
c	Re-test defect no.26	High	Re-test
d	Run regression test script	Medium	Regression
e	Print monthly sales figures	Medium	
f	Add special invoice to previous month	Low	
g	Reprint selected previous sales figures	High	Must be run after item e
h	Account administrator able to amend any previous month's sales figures	Low	
i	Print year-to-date figures	Medium	

- A b, c, g, d, e, i, a, f, h.
B a, c, d, b, g, e, i, f, h.
C c, a, d, b, e, g, i, h, f.
D d, c, a, e, b, g, i, f, h.

- 32 Which of the following factors will **MOST** affect the testing effort required to test a software product?

- A The number of staff available to execute tests.
B The level of detail in the test plan.
C The requirements for reliability and security in the product.
D The test estimation method used.

- 33 Which of the following is a common test metric that provides the **BEST** indicator of test progress?

- A The number of testers used for test execution.
B Planned test execution completion date.
C Test failure rate of tests executed.
D The number and severity of product risks.

- 34 Test objectives for the test of a safety critical system include completion of all outstanding defect correction. Regression testing is required following defect correction at all test levels. Which **two** of the following metrics would be **MOST** suitable for determining whether the test objective has been met?
- a. Number of Regression tests run versus passed at all levels of testing.
 - b. Number of Incidents closed at all levels of testing.
 - c. Number of tests run versus passed in System test.
 - d. Number of tests run versus passed at all levels of testing.
 - e. Number of Incidents raised versus closed at all levels of testing.
- A a and e only.
B b and c only.
C d and e only.
D a and b only.
- 35 Test script "Transval 001" verifies transaction validation screen "TRN03". According to the specification (PID version 1.3, section 10.2) the validation screen should not accept future dated transactions.
Test script "EOD 004" verifies end of day processing, this script is scheduled to run after data has been entered via screen "TRN03".
During test execution, test script "Transval 001" has passed, but test script "EOD 004" has failed, as future dated transactions appear to have caused the end of day processing to fail.
An Incident report needs to be raised, which of the following is the **BEST** detail to include?
- A **Title:** End of Day failure. **Reproducible:** Yes. **Description:** Script "EOD 004" fails when the first transaction of the day is future dated. Screen shot of the failure is attached.
- B **Title:** Transaction input screen validation. **Reproducible:** Yes. **Description:** End of Day process fails. Validation of transaction entry on screen TRN03 should not allow future dated transactions – see PID ver 1.3, section 10.2. Screen shot of the failure and of a future dated transaction from the input screen is attached, together with a database query showing the future a dated transaction.
- C **Title:** Screen TRN03 validation of transaction date. **Reproducible:** No. **Description:** When a future dated transaction is processed by the end of day process, a failure can occur. Three runs of the end of process passed today so this does not always happen. Screen shot of the failure is attached.
- D **Title:** Screen TRN03 validation of transaction date. **Reproducible:** Yes. **Description:** Script "EOD 004" failed as a transaction was future dated. Screen shot of the failure is attached and also the database query showing the transaction that is future dated. Validation of transaction entry on screen TRN03 should not allow future dated transactions – see PID ver 1.3, section 10.2.

- 36** Which **two** of the following test tools may be used to support test execution?
- a. Test data preparation tools.
 - b. Test harness.
 - c. Review tools.
 - d. Test comparators.
 - e. Configuration management tools.
- A** a and b only.
B c and d only.
C c and e only.
D b and d only.
- 37** Which of the following is a consideration when deploying test execution tools?
- A** Data-driven testing cannot be used with test execution tools.
B Recorded manual tests may become unstable in use.
C Keyword-driven testing cannot be used with test execution tools.
D Expected results for tests are not required because the tool generates expected results.
- 38** Which of the following is a valid consideration, when deciding if static analysis tools are appropriate?
- A** Static analysis tools can be applied to new code but cannot be applied to existing code.
B Static analysis tools are not recommended for enforcing coding standards in development teams.
C Static analysis tools may generate large numbers of warning messages when applied to new code, even if the code meets coding standards.
D Static analysis tools do not generate any warning messages when applied to existing code.
- 39** What is the **MAIN** reason for using a pilot project to introduce a testing tool into an organisation?
- A** To identify the requirements for using a tool.
B To make a selection between alternative tools.
C To assess whether the tool will be cost- effective.
D To ensure the tools fits existing processes without change.

- 40** Which of the following **BEST** describes the relationship between test planning and test execution?
- A** Test planning sets the level of detail in test procedures for test execution.
 - B** Test planning schedules test execution but does not assign resources.
 - C** Test planning defines the overall approach to testing but does not schedule test execution.
 - D** Test planning assigns resources for test execution but does not schedule the test activities.

-End of Paper-