**Quality Management**

**1.** Which of these do NOT belong to the Crosby’s Quality Vaccine’s five sections?

a. Operations

b. Communication

c. Conformance

d. Policies

**Answer:** (c) Conformance

**2.** \_\_\_\_\_\_\_\_\_\_\_\_ refer to the customer needs that help in keeping a company in the market.

a. Excess Needs

b. Excitement Needs

c. Basic Needs

d. Performance Needs

**Answer:** (d) Performance Needs

**3.** \_\_\_\_\_\_\_\_\_\_\_\_ refers to the operational definition of goals.

a. Objectives

b. Action Plans

c. Target

d. Plans

**Answer:** (a) Objectives

**4.** Which of these is neither a physical nor an objective factor for performance appraisal?

a. Friendliness

b. Efficiency

c. Amount of work

d. Attendance

**Answer:** (a) Friendliness

**5.** The Four R’s of a Total Improvement was given by whom?

a. Deming

b. Jack L. Huffman

c. Taguchi

d. Crosby

**Answer:** (b) Jack L. Huffman

**6.** Which of these is the primary idea behind the concept of multiple sourcing?

a. Lower costs

b. Better service

c. Higher costs

d. Better quality

**Answer:** (c) Higher costs

**7.** Which of these does NOT amount to a tangible gain of the quality circle?

a. Better housekeeping

b. Attitudinal changes

c. Greater cost-effectiveness

d. Increased profitability

**Answer:** (b) Attitudinal changes

**8.** We also call specification limits to be a product’s \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. Median

b. Mode

c. Allowances

d. Tolerances

**Answer:** (d) Tolerances

**9.** Which of these does NOT happen to be one of the new seven management tools?

a. Histogram

b. Matrix Diagram

c. Tree Diagram

d. Affinity Diagram

**Answer:** (a) Histogram

**10.** Which of these is the odd one out according to the data inputs needed to prepare an FMEA?

a. Reliability data

b. Product & process specifications

c. Quality engineer

d. Customer priority data

**Answer:** (c) Quality engineer

**11.** Which of these does NOT refer to an emotional-based method to increase innovation?

a. Lateral Thinking

b. TRIZ

c. Synectics

d. Brainstorming

**Answer:** (b) TRIZ

**12.** \_\_\_\_\_\_\_\_\_\_\_\_ refers to the Six Sigma model that we use for the improvement of the existing product/process.

a. DMAAX

b. DMADV

c. DMAAD

d. DMAIC

**Answer:** (d) DMAIC

**13.** Which of these does NOT refer to a phase involved in the QFD process in product development?

a. Statistical Planning

b. Product Planning

c. Production Planning

d. Process Planning

**Answer:** (a) Statistical Planning

**14.** What would be the availability if the downtime is 60 minutes and the loading time is 400 minutes?

a. 87%

b. 85%

c. 83%

d. 81%

**Answer:** (b) 85%

**15.** The Rajiv Gandhi National Quality Award is given by which of these organizations?

a. PFRDA

b. IRDAI

c. SEBI

d. BIS

**Answer:** (d) BIS

**16.** Which of these ISO 14000 series standards consist of the guidelines of the Environmental Performance Evaluation?

a. ISO 14004

b. ISO 14001

c. ISO 14031

d. ISO 14010

**Answer:** (c) ISO 14031

**17.** What would be the individual reliability if the reliability of the system of five robots is 0.95 in a production line?

a. 0.6535

b. 0.8143

c. 0.9354

d. 0.9897

**Answer:** (d) 0.9897

**18.** Which of these does NOT refer to one of the principles of JIT manufacturing?

a. MRP

b. Total Quality Management

c. Supplier Management

d. Production Management

**Answer:** (a) MRP

**19.** Which of these refers to the ‘autonomation’ term?

a. 5S

b. Andon

c. Jidoka

d. Poka-Yoke

**Answer:** (c) Jidoka

**20.** Which of these refers to a real-world asset or product’s virtual representation?

a. 5S

b. Digital Twin

c. Andon

d. Poka-Yoke

**Answer:** (b) Digital Twin

1. What is the primary focus of the quality management system?  
a) Customer focus  
b) Engagement of people  
c) Process approach  
d) Improvement

Answer: a

2. What are the responsibilities of management in quality system management?  
a) Frequently change responsibilities of employees for flexibility  
b) Frequently change authorities for flexibility  
c) Authority changes but fixed responsibility  
d) Fix authority and responsibility

Answer: d

.

3. What is not true for the quality system requirements?  
a) Generic  
b) Depends upon size of organisation  
c) Independent of type of organisation  
d) Applicable to any organisation

Answer: b

4. What does quality plans specify in a quality system?  
a) Work instructions  
b) Checklists  
c) Clause to clause interpretation of work  
d) All resources and their schedule

Answer: d

5. In how many groups, the quality system and management requirements are divided as per ISO-9001:2000?  
a) 2  
b) 3  
c) 4  
d) 5

Answer: d

6. What is quality control?  
a) Process of recognition of entire manufacturing process  
b) Concerned with the integration of all the efforts in organisation  
c) Detection of defects in a product  
d) Minimization of material level

Answer: c

7. Which option is correct for given statements about quality assurance?  
Statement 1: It assures that quality requirements will fulfilled.  
Statement 2: Quality assurance is product oriented.  
a) F, F  
b) T, F  
c) T, T  
d) F, T

Answer: b

8. What is the purpose of ISO standards created for quality management systems?  
a) To certify the process  
b) To certify the quality of a product  
c) To certify the quality of service  
d) To certify the quantity used for product

Answer: a

**1-A is the system which provides guidelines for the organization and its employees to identify the needs of customer and to \_\_\_ and to meet these needs.**

(A) design and develop

(B) deliver the products or services

(C) produce

(D) all of the above

**2- \_\_\_ is a series of standards dealing with quality management systems.**

(A) ISO 9000

(B) ISO 9001

(C) ISO 9002

(D) ISO 9003

**3- The following standard is for Environmental Management System Guidelines for Principles, Systems, and Supporting Techniques.**

(A) ISO 9001

(B) QS 9000

(C) TS 9000

(D) ISO 14001

**4-Following is (are) the benefit(s) of ISO 9000 Certification.**

(A) Greater quality awareness

(B) Increased market share

(C) Reduced costs

(D) All of the above

**5- Following is (are) the Limitation(s) of ISO 9000 Certification.**

(A) does not provide any guideline for defining an appropriate process.

(B) process is not foolproof

(C) does not automatically lead to Total Quality Management (TQM)

(D) all of the above

**6-ISO 9001 has \_\_\_ clauses.**

(A) five

(B) six

(C) seven

(D) eight

**7- Cleaner Production is the continual effort to \_\_\_, without reducing production capacity.**

(A) prevent pollution

(B) reduce the use of energy

(C) reduce the use of water and material resources and minimize waste

(D) all of the above

**8- A situation in which one country, region, or producer can produce a particular commodity more cheaply than another country, region or producer.**

(A) Competitive advantage

(B) Geographical advantage

(C) Regional advantage

(D) All of the above

**9- \_\_\_ is a non-profit organization that develops and publishes standards of virtually every possible sort, ranging from standards for information technology to fluid dynamics and nuclear energy.**

(A) International Organization for Statistical

(B) International Organization for Standardization

(C) International Organization for Systems

(D) None of the above

**10- When the money saved by renewable energy and energy efficiency more than pay for the capital and maintenance costs over a given period.**

(A) Cost Efficiency

(B) Cost Improvement

(C) Cost Effectiveness

(D) None of the above

What is quality management?

a) The process of ensuring that products meet customer requirements

b) The process of maximizing profits through cost reduction

c) The process of managing human resources effectively

d) The process of monitoring project timelines and milestones

Which of the following is a key principle of quality management?

a) Cost reduction at all costs

b) Continuous improvement and learning

c) Minimal customer interaction

d) Resource allocation optimization

What is the purpose of a quality management system (QMS)?

a) To ensure customer satisfaction

b) To reduce production costs

c) To streamline project management

d) To enforce strict rules and regulations

Which of the following is a quality management standard widely used in many industries?

a) ISO 9001

b) ISO 27001

c) ISO 14001

d) ISO 50001

What is the role of a quality management representative in an organization?

a) To perform quality control inspections

b) To oversee employee training programs

c) To coordinate quality improvement projects

d) To manage customer complaints and feedback

What is the purpose of a quality policy?

a) To define the organization's commitment to quality

b) To establish production quotas and targets

c) To assign quality responsibilities to employees

d) To monitor and control production processes

Which of the following is a tool commonly used in quality management for problem-solving and process improvement?

a) Pareto chart

b) Balance sheet

c) Gantt chart

d) Histogram

What is the role of statistical process control (SPC) in quality management?

a) To ensure compliance with regulatory standards

b) To monitor and control production processes

c) To analyze customer feedback and complaints

d) To track and manage project timelines and milestones

What does the term "continuous improvement" mean in the context of quality management?

a) Maintaining consistent quality standards over time

b) Adapting to changing customer requirements

c) Maximizing profits through cost reduction

d) Making incremental changes to improve processes and products

Which of the following is a key component of the Plan-Do-Check-Act (PDCA) cycle?

a) Identifying potential risks and mitigating them

b) Developing a project schedule and timeline

c) Monitoring and measuring performance against targets

d) Assigning roles and responsibilities to project team members

What is the purpose of a control chart in quality management?

a) To track changes made to project requirements

b) To identify and correct deviations in a process

c) To monitor employee attendance and productivity

d) To allocate resources effectively across projects

What is the role of benchmarking in quality management?

a) To establish performance targets and standards

b) To compare organizational processes with competitors or industry best practices

c) To evaluate customer satisfaction and feedback

d) To track and manage project risks and issues

1. CMM stands for  
a) Capability Management Module  
b) Conservative Maturity Model  
c) Capability Maturity Module  
d) Capability Maturity Model

Answer: d

2. The ISO 9000 series of standards is a program that can be used for external quality assurance purposes.  
a) True  
b) False

Answer: b

3. According to ISO 9001, the causes of nonconforming product should be  
a) deleted  
b) eliminated  
c) identified  
d) eliminated and identified

Answer: d

4. .CO policy in CMM means  
a) The leadership practices in Commitment to Perform  
b) The organizational structure (groups) practices in Ability to Perform  
c) The policy practices in Commitment to Perform  
d) The planning practices in Commitment to Perform

Answer: c

5. ISO 9001 is not concerned with \_\_\_\_\_\_\_\_\_\_\_\_ of quality records.  
a) collection  
b) maintenance  
c) verification  
d) dis-positioning

Answer: c

6. Which of the following is not a maturity level in CMM?  
a) Design  
b) Repeatable  
c) Managed  
d) Optimizing

Answer: a

7. In CMM, the life cycle activities of requirements analysis, design, code, and test are described in  
a) Software Product Engineering  
b) Software Quality Assurance  
c) Software Subcontract Management  
d) Software Quality Management

Answer: a

8. Which of the following requires design control measures, such as holding and recording design reviews and qualification tests?  
a) CMM  
b) ISO 9001  
c) ISO 9000-3  
d) None of the mentioned

Answer: c

9. The CMM emphasizes  
a) continuous process improvement  
b) the need to record information  
c) the need to accept quality system  
d) none of the mentioned

Answer: b

Which of the following statements is true about ISO standards?

a) ISO standards are specific to the software development industry.

b) ISO standards are voluntary and provide guidance for quality management.

c) ISO standards focus on project management practices only.

d) ISO standards are mandatory for all organizations globally.

What does ISO 9001:2015 certification signify?

a) Compliance with international information security standards.

b) Adherence to environmental management practices.

c) Compliance with quality management system requirements.

d) Adherence to occupational health and safety standards.

Which ISO standard is focused on information security management?

a) ISO 9001

b) ISO 14001

c) ISO 27001

d) ISO 20000

What is the purpose of SEI CMMI (Capability Maturity Model Integration)?

a) To assess an organization's capability to develop and maintain software systems.

b) To certify organizations for compliance with ISO standards.

c) To evaluate an organization's financial stability and profitability.

d) To provide guidelines for project management practices.

Which of the following best describes the maturity levels in SEI CMMI?

a) Initial, Managed, Defined, Quantitatively Managed, Optimizing

b) Initial, Repeatable, Defined, Quantitatively Managed, Optimizing

c) Ad Hoc, Managed, Defined, Quantitatively Managed, Optimizing

d) Initial, Repeatable, Defined, Managed, Optimizing

What is the highest maturity level in SEI CMMI?

a) Level 1 – Initial

b) Level 2 - Managed

c) Level 3 - Defined

d) Level 5 – Optimizing

What is the primary focus of Level 3 - Defined in SEI CMMI?

a) Process improvement based on quantitative data analysis.

b) Basic project management and planning practices.

c) Ad hoc and chaotic project management practices.

d) Implementing and institutionalizing standardized processes.

Which of the following is true about SEI CMMI Level 4 - Quantitatively Managed?

a) There is a strong emphasis on continuous process improvement.

b) Projects are managed based on well-defined and measured processes.

c) Basic project management practices are implemented and documented.

d) Project risks and issues are proactively identified and addressed.

What is the purpose of a SCAMPI appraisal in SEI CMMI?

a) To assess an organization's compliance with ISO standards.

b) To evaluate an organization's financial stability.

c) To measure an organization's maturity level in SEI CMMI.

d) To monitor and control project risks and issues.

Which of the following is a key characteristic of Level 2 - Managed in SEI CMMI?

a) Processes are ad hoc and not well-defined.

b) Project performance is not monitored or measured.

c) Project management practices are documented and followed.

d) Continuous process improvement

Which of the following is true about ISO 14001?

a) It focuses on information security management.

b) It provides guidelines for quality management systems.

c) It addresses environmental management practices.

d) It certifies organizations for occupational health and safety.

What is the purpose of ISO/IEC 27001?

a) To ensure compliance with quality management standards.

b) To establish guidelines for risk management.

c) To define requirements for service management systems.

d) To provide a framework for information security management.

What does SEI stand for in SEI CMMI?

a) Software Engineering Institute

b) Systems Engineering International

c) Service Excellence Institute

d) Standardization and Evaluation Institute

Which of the following is a key focus area in SEI CMMI Level 5 - Optimizing?

a) Establishing basic project management practices

b) Implementing and institutionalizing standardized processes

c) Identifying and managing project risks and issues

d) Continuously improving processes and organizational performance

What is the purpose of a SCAMPI A appraisal in SEI CMMI?

a) To evaluate an organization's maturity level in SEI CMMI

b) To assess an organization's compliance with ISO standards

c) To monitor and control project risks and issues

d) To measure an organization's financial stability

Which ISO standard provides guidelines for environmental management systems?

a) ISO 9001

b) ISO 14001

c) ISO 27001

d) ISO 45001

What is the purpose of ISO/IEC 20000?

a) To provide guidelines for environmental management systems.

b) To define requirements for information security management systems.

c) To establish standards for service management systems.

d) To certify organizations for quality management systems

What is the primary goal of Level 2 - Repeatable in SEI CMMI?

a) Establishing and managing basic project management practices.

b) Defining and documenting standardized processes.

c) Monitoring and controlling project risks and issues.

d) Continuously improving organizational performance.

Which of the following is a key characteristic of SEI CMMI Level 3 - Defined?

a) Ad hoc and chaotic project management practices.

b) Quantitative measurement and analysis of processes.

c) Repeatable and consistently applied processes.

d) Optimizing and innovating organizational processes.

What is the purpose of a SCAMPI B appraisal in SEI CMMI?

a) To measure an organization's maturity level in SEI CMMI.

b) To evaluate an organization's compliance with ISO standards.

c) To monitor and control project risks and issues.

d) To assess an organization's financial stability.

PSP and six sigm  
What is the primary objective of the Personal Software Process (PSP)?

a) Enhancing teamwork in software development

b) Maximizing software development speed

c) Improving individual productivity and software quality

d) Minimizing software testing efforts

Which phase of Six Sigma's DMAIC methodology involves identifying and validating potential causes of process variations? a) Define

b) Measure

c) Analyze

d) Control

Question: Which statistical tool is commonly used in Six Sigma to analyze the relationship between process inputs and outputs?

a) Fishbone diagram

b) Pareto chart

c) Control chart

d) Regression analysis

Question: In the context of PSP, what is the purpose of collecting process data?

a) To track project milestones

b) To estimate project costs

c) To identify potential software defects

d) To analyze and improve personal performance

Which of the following is NOT a phase in the Personal Software Process (PSP)?

a) Planning

b) Design

c) Coding

d) Testing

Question: What is the acceptable defect rate targeted in Six Sigma?

a) 5 defects per million opportunities

b) 5 defects per thousand opportunities

c) 5 defects per hundred opportunities

d) 5 defects per ten opportunities

Question: Which tool is commonly used in Six Sigma to prioritize issues and determine the most significant contributors to a problem?

a) Control chart

b) Fishbone diagram

c) Pareto chart

d) Scatter plot

Question: What is the primary focus of the Control phase in Six Sigma's DMAIC methodology?

a) Defining the problem and project goals

b) Measuring process performance and collecting data

c) Analyzing data to identify root causes and solutions

d) Implementing and sustaining process improvements

Question: Which of the following is a key principle of PSP?

a) Eliminating all defects in the software

b) Maximizing team collaboration and communication

c) Continuously improving personal software development practices

d) Reducing development time by skipping certain process steps

**1. Which of the following statements best describes Six Sigma?**

A. A quality control program  
B. A process improvement methodology  
C. A customer satisfaction initiative  
D. A human resource management strategy

**Answer: B.** A process improvement methodology

**2. Which of the following is not a phase of the Six Sigma DMAIC process?**

A. Define  
B. Measure  
C. Analyze  
D. Implement

**Answer: D.** Implement

**3. What is the primary goal of the Six Sigma methodology?**

A. To reduce costs  
B. To improve customer satisfaction  
C. To increase efficiency  
D. To reduce defects

**Answer: D.** To reduce defects

**4. Which of the following is an example of a Six Sigma tool used in the Analyze phase?**

A. Ishikawa diagram  
B. Pareto chart  
C. Control chart  
D. Process map

**Answer: B.** Pareto chart

**5. Which of the following is a statistical measure of variation in a process?**

A. Mean  
B. Mode  
C. Range  
D. Standard deviation

**Answer: D.** Standard deviation

**6. Which of the following is a common goal of a Six Sigma project?**

A. Reduce process cycle time  
B. Improve customer service  
C. Increase revenue  
D. All of the above

**Answer: D.** All of the above

**7. Which of the following is an example of a non-value-added activity?**

A. Designing a product  
B. Testing a product  
C. Repairing a defective product  
D. All of the above

**Answer: C.** Repairing a defective product

**8. What is the primary benefit of using statistical process control (SPC)?**

A. It improves quality by reducing variation  
B. It reduces costs by increasing efficiency  
C. It increases revenue by improving customer satisfaction  
D. It improves employee morale by increasing job security

**Answer: A.** It improves quality by reducing variation

**9. Which of the following is a common cause of variation in a process?**

A. Special causes  
B. Common causes  
C. Random causes  
D. All of the above

**Answer: B.** Common causes

**10. Which of the following is an example of a mistake-proofing technique?**

A. Poka-yoke  
B. Value stream mapping  
C. Flowcharting  
D. Pareto charting

**Answer: A.** Poka-yoke

**11. Which of the following is a key component of Six Sigma deployment?**

A. Executive leadership  
B. Front-line employees  
C. Middle management  
D. All of the above

**Answer: D.** All of the above

**12. Which of the following is an example of a lean tool used in process improvement?**

A. Control chart  
B. Pareto chart  
C. Kaizen event  
D. Process map

**Answer: C.** Kaizen event

**13. Which of the following is a key principle of the Lean methodology?**

A. Eliminating defects  
B. Reducing cycle time  
C. Eliminating waste  
D. Increasing customer satisfaction

**Answer: C.** Eliminating waste

**14. Which of the following is an example of a value-added activity?**

A. Designing a product  
B. Waiting for materials to arrive  
C. Transporting materials between workstations  
D. Inspecting a finished product

**Answer: A.** Designing a product

**15. Which of the following is a common tool used in Lean process improvement?**

A. Control chart  
B. Pareto chart  
C. Kanban board  
D. Ishikawa diagram

**Answer: C.** Kanban board

**16. Which of the following is an example of a Lean principle?**

A. Define, Measure, Analyze, Improve, Control  
B. Plan, Do, Check, Act  
C. Gemba, Kaizen, Muda  
D. Voice of the Customer

**Answer: C.** Gemba, Kaizen, Muda

**17. Which of the following is a common Lean tool used for visual management?**

A. Flowchart  
B. Ishikawa diagram  
C. Kanban board  
D. Pareto chart

**Answer: C.** Kanban board

**18. Which of the following is a common tool used in Lean Six Sigma?**

A. Ishikawa diagram  
B. Control chart  
C. Kanban board  
D. Pareto chart

**Answer: D.** Pareto chart

**19. What is the primary goal of the Lean Six Sigma methodology?**

A. To reduce cycle time  
B. To improve customer satisfaction  
C. To eliminate waste  
D. To reduce defects

**Answer: C.** To eliminate waste

**20. Which of the following is an example of a Lean Six Sigma project?**

A. Reducing customer complaints  
B. Improving employee morale  
C. Streamlining the hiring process  
D. All of the above

**Answer: A.** Reducing customer complaints

**21. What is the primary benefit of using a control chart?**

A. It improves quality by reducing variation  
B. It reduces costs by increasing efficiency  
C. It increases revenue by improving customer satisfaction  
D. It improves employee morale by increasing job security

**Answer: A.** It improves quality by reducing variation

**22. Which of the following is a key element of the DMAIC process?**

A. Analyze  
B. Plan  
C. Execute  
D. Communicate

**Answer: A.** Analyze

**23. Which of the following is a common statistical tool used in Six Sigma?**

A. Fishbone diagram  
B. Gantt chart  
C. Control chart  
D. Mind map

**Answer: C.** Control chart

**24. What is the primary goal of the Define phase in the DMAIC process?**

A. To establish a baseline for the process  
B. To identify the root cause of a problem  
C. To implement process improvements  
D. To measure the effectiveness of the improvements

**Answer: A.** To establish a baseline for the process

**25. Which of the following is a common tool used in the Measure phase of the DMAIC process?**

A. Ishikawa diagram  
B. Gantt chart  
C. Control chart  
D. Process map

**Answer: D.** Process map

**26. What is the primary goal of the Analyze phase in the DMAIC process?**

A. To establish a baseline for the process  
B. To identify the root cause of a problem  
C. To implement process improvements  
D. To measure the effectiveness of the improvements

**Answer: B.** To identify the root cause of a problem

**27. Which of the following is a common tool used in the Improve phase of the DMAIC process?**

A. Control chart  
B. Fishbone diagram  
C. Pareto chart  
D. Ishikawa diagram

**Answer: B.** Fishbone diagram

**28. What is the primary goal of the Control phase in the DMAIC process?**

A. To establish a baseline for the process  
B. To identify the root cause of a problem  
C. To implement process improvements  
D. To sustain the improvements over time

**Answer: D.** To sustain the improvements over time

**29. Which of the following is a common tool used in the Control phase of the DMAIC process?**

A. Control chart  
B. Gantt chart  
C. Pareto chart  
D. Ishikawa diagram

**Answer: A.** Control chart

**30. Which of the following is a common tool used in the Define phase of the DMAIC process?**

A. Pareto chart  
B. Process map  
C. Fishbone diagram  
D. Control chart

**Answer: B.** Process map

**31. Which of the following is a common tool used in the Analyze phase of the DMAIC process?**

A. Ishikawa diagram  
B. Control chart  
C. Pareto chart  
D. Statistical analysis

**Answer: D.** Statistical analysis

**32. Which of the following is NOT one of the key principles of Six Sigma?**

A. Focus on the customer  
B. Continuous improvement  
C. Empowerment of employees  
D. Reduce waste and defects to zero

**Answer: D.** Reduce waste and defects to zero

**33. What is the difference between a Type I error and a Type II error?**

A. A Type I error occurs when a process is not in control, while a Type II error occurs when a process is in control.  
B. A Type I error occurs when a hypothesis is rejected when it is actually true, while a Type II error occurs when a hypothesis is accepted when it is actually false.  
C. A Type I error occurs when a process is producing too many defects, while a Type II error occurs when a process is producing too few defects.  
D. A Type I error occurs when a process is producing defects that are not important, while a Type II error occurs when a process is not producing defects that are important.

**Answer: B.** A Type I error occurs when a hypothesis is rejected when it is actually true, while a Type II error occurs when a hypothesis is accepted when it is actually false.

**34. Which of the following is a statistical tool used in hypothesis testing?**

A. Gantt chart  
B. Control chart  
C. Pareto chart  
D. Student’s t-test

**Answer: D.** Student’s t-test

**35. Which of the following is a measure of central tendency?**

A. Range  
B. Variance  
C. Standard deviation  
D. Mean

**Answer: D.** Mean

**36. Which of the following is a measure of variability?**

A. Range  
B. Mean  
C. Median  
D. Mode

**Answer: A.** Range

**37. Which of the following is a measure of dispersion?**

A. Mean  
B. Variance  
C. Standard deviation  
D. Mode

**Answer: C.** Standard deviation

**38. Which of the following is a measure of skewness?**

A. Mean  
B. Median  
C. Mode  
D. Variance

**Answer: B.** Median

**39. Which of the following is a measure of kurtosis?**

A. Mean  
B. Median  
C. Mode  
D. Variance

**Answer: D.** Variance

**40. What is the purpose of a control chart?**

A. To monitor a process over time  
B. To analyze data in the Analyze phase of the DMAIC process  
C. To identify the root cause of a problem  
D. To develop a plan for implementing process improvements

**Answer: A.** To monitor a process over time

**41. Which of the following is a type of control chart used for monitoring the mean of a process?**

A. P chart  
B. X-bar chart  
C. R chart  
D. C chart

**Answer: B.** X-bar chart

**42. Which of the following is a type of control chart used for monitoring the variability of a process?**

A. P chart  
B. X-bar chart  
C. R chart  
D. C chart

**Answer: C.** R chart

**43. Which of the following is a type of control chart used for monitoring the proportion of defects in a process?**

A. P chart  
B. X-bar chart  
C. R chart  
D. C chart

**Answer: A.** P chart

**44. Which of the following is a type of control chart used for monitoring the number of defects per unit of output in a process?**

A. P chart  
B. X-bar chart  
C. R chart  
D. C chart

**Answer: D.** C chart.

**45. What is the purpose of a fishbone diagram?**

A. To identify the root cause of a problem  
B. To monitor a process over time  
C. To analyze data in the Analyze phase of the DMAIC process  
D. To develop a plan for implementing process improvements

**Answer: A.** To identify the root cause of a problem

**46. Which of the following is a type of process map used in Six Sigma?**

A. Gantt chart  
B. Control chart  
C. Pareto chart  
D. Value stream map

**Answer: D.** Value stream map

**47. Which of the following is NOT one of the five steps of the DMAIC process?**

A. Define  
B. Measure  
C. Analyze  
D. Evaluate

**Answer: D.** Evaluate

**48. Which of the following is a tool used in the Improve phase of the DMAIC process?**

A. Pareto chart  
B. Fishbone diagram  
C. Failure mode and effects analysis (FMEA)  
D. Statistical process control (SPC) chart

**Answer: C.** Failure mode and effects analysis (FMEA)

**49. What is the purpose of a run chart?**

A. To monitor a process over time  
B. To identify the root cause of a problem  
C. To analyze data in the Analyze phase of the DMAIC process  
D. To develop a plan for implementing process improvements

**Answer: A.** To monitor a process over time

**50. Which of the following is a tool used in the Analyze phase of the DMAIC process to identify and prioritize the most important causes of a problem?**

A. Pareto chart  
B. Control chart  
C. Fishbone diagram  
D. Value stream map

**Answer: A.** Pareto chart

1. The process of generating analysis and design documents is known as  
a) Software engineering  
b) Software re-engineering  
c) Reverse engineering  
d) Re-engineering

Answer: c

2. What is a software patch?  
a) Required or Critical Fix  
b) Emergency Fix  
c) Daily or routine Fix  
d) None of the mentioned

Answer: b

3. Which one of the following is not a maintenance model?  
a) Waterfall model  
b) Reuse-oriented model  
c) Iterative enhancement model  
d) Quick fix model

Answer: a

4. What does ACT stands for in In Boehm model for software maintenance?  
a) Actual change track  
b) Annual change track  
c) Annual change traffic  
d) Actual change traffic

Answer: c

5. Choose the suitable options with respect to regression testing.  
a) It helps in development of software  
b) It helps in maintenance of software  
c) It helps in development & maintenance of software  
d) none of the mentioned

Answer: c

6. What are legacy systems?  
a) new systems  
b) old systems  
c) under-developed systems  
d) none of the mentioned

Answer: b

7. Which of the following manuals is not a user documentation?  
a) Beginner’s Guide  
b) Installation guide  
c) Reference Guide  
d) SRS

Answer: d

8. Which of the following manuals is a user documentation?  
a) SRS -Software Requirement Specification  
b) SDD -Software Design Document  
c) System Overview  
d) None of the mentioned

Answer: c

9. The process of transforming a model into source code is known as  
a) Forward engineering  
b) Reverse engineering  
c) Re-engineering  
d) Reconstructing

Answer: a

10. How many stages are there in Iterative-enhancement model used during software maintenance?  
a) two  
b) three  
c) four  
d) five

Answer: b

Question: What is software maintenance?

a) The process of developing new software applications

b) The process of fixing bugs and errors in software

c) The process of enhancing software functionality

d) The process of documenting software requirements

Question: Which type of software maintenance involves making changes to the software to adapt it to a new environment or platform?

a) Corrective maintenance

b) Adaptive maintenance

c) Perfective maintenance

d) Preventive maintenance

Question: What is the primary goal of preventive maintenance in software?

a) Fixing software defects and errors

b) Enhancing software performance and efficiency

c) Adding new features and functionality to the software

d) Proactively identifying and addressing potential issues before they occur

Question: Which type of software maintenance involves modifying the software to improve its performance or usability?

a) Corrective maintenance

b) Adaptive maintenance

c) Perfective maintenance

d) Preventive maintenance

Question: What is regression testing in the context of software maintenance?

a) Testing the software to ensure it meets the specified requirements

b) Testing the software after modifications to ensure existing functionality is not affected

c) Testing the software for performance and scalability issues

d) Testing the software for security vulnerabilities

Question: Which of the following is NOT a phase in the software maintenance process?

a) Planning

b) Analysis

c) Design

d) Implementation

Question: Which type of software maintenance involves fixing software defects that were not discovered during the development phase?

a) Corrective maintenance

b) Adaptive maintenance

c) Perfective maintenance

d) Preventive maintenance

Question: What is the main purpose of a software maintenance plan?

a) To outline the initial development process

b) To identify software defects and errors

c) To define strategies and activities for maintaining software

d) To prioritize software enhancements and new features

Question: Which type of software maintenance involves modifying the software to meet new or changing user requirements?

a) Corrective maintenance

b) Adaptive maintenance

c) Perfective maintenance

d) Preventive maintenance

Question: What is the primary objective of software maintenance?

a) To improve software performance

b) To minimize the cost of software development

c) To extend the lifespan of software systems

d) To introduce new features and functionality

1. Software Maintenance includes  
a) Error corrections  
b) Enhancements of capabilities  
c) Deletion of obsolete capabilities  
d) All of the mentioned

Answer: d

2. Maintenance is classified into how many categories ?  
a) two  
b) three  
c) four  
d) five

Answer: c

3. The modification of the software to match changes in the ever changing environment, falls under which category of software maintenance?  
a) Corrective  
b) Adaptive  
c) Perfective  
d) Preventive

Answer: b

4. How many phases are there in Taute Maintenance Model?  
a) six  
b) seven  
c) eight  
d) nine

Answer: c

5. What type of software testing is generally used in Software Maintenance?  
a) Regression Testing  
b) System Testing  
c) Integration Testing  
d) Unit Testing

Answer: a

6. Regression testing is a very expensive activity.  
a) True  
b) False

Answer: a

7. Selective retest techniques may be more economical than the “retest-all”technique.How many selective retest techniques are there?  
a) two  
b) three  
c) four  
d) five

Answer: b

8. Which selective retest technique selects every test case that causes a modified program to produce a different output than its original version?  
a) Coverage  
b) Minimization  
c) Safe  
d) Maximization

Answer: c

9. \_\_\_\_\_\_\_\_\_\_\_\_\_\_ measures the ability of a regression test selection technique to handle realistic applications.  
a) Efficiency  
b) Precision  
c) Generality  
d) Inclusiveness

Answer: c

10. Which regression test selection technique exposes faults caused by modifications?  
a) Efficiency  
b) Precision  
c) Generality  
d) Inclusiveness

Answer: d

Software reuse

1. Reuse-based software engineering is a software engineering strategy where the development process is geared to reusing existing software.  
a) True  
b) False

Answer: a  
Clarification: None.

2. The open source movement has meant that there is a huge reusable code base available at  
a) free of cost  
b) low cost  
c) high cost  
d) short period of time

Answer: b  
Clarification: The open source movement has meant that there is a huge reusable code base available at low cost. This may be in the form of program libraries or entire applications.

3. Consider the example and categorize it accordingly, “A pattern-matching system developed as part of a text-processing system may be reused in a database management system”.  
a) Application system reuse  
b) Component reuse  
c) Object and function reuse  
d) None of the mentioned

Answer: b  
Clarification: Components of an application, ranging in size from subsystems to single objects, may be reused.

4. COTS stands for  
a) Commercial Off-The-Shelf systems  
b) Commercial Off-The-Shelf states  
c) Commercial Off-The-System state  
d) None of the mentioned

Answer: a  
Clarification: None.

5. COTS product reuse means  
a) Class and function libraries that implement commonly used abstractions are available for reuse  
b) Shared components are woven into an application at different places when the program is compiled  
c) Large-scale systems that encapsulate generic business functionality and rules are configured for an organization  
d) Systems are developed by configuring and integrating existing application systems

Answer: d  
Clarification: None.

6. .NET are specific to which platform?  
a) Java  
b) Mac-OS  
c) Microsoft  
d) LINUX

Answer: c  
Clarification: NET Framework (pronounced dot net) is a software framework developed by Microsoft that runs primarily on Microsoft Windows.

7. Which of the following is a generic structure that is extended to create a more specific subsystem or application?  
a) Software reuse  
b) Object-oriented programming language  
c) Framework  
d) None of the mentioned

Answer: c  
Clarification: Frameworks are implemented as a collection of concrete and abstract object classes in an object-oriented programming language.

8. “An ordering system may be adapted to cope with a centralized ordering process in one company and a distributed process in another.” Which category the example belong to?  
a) Process specialization  
b) Platform specialization  
c) Environment specialization  
d) Functional specialization

Answer: a  
Clarification: In process specialization, the system is adapted to cope with specific business processes.

9. What are generic application systems that may be designed to support a particular business type, activity, or sometimes a complete enterprise?  
a) COTS-solution systems  
b) COTS-integrated systems  
c) ERP systems  
d) Both COTS-solution and COTS-integrated systems

Answer: a  
Clarification: None

10. Which of the following is not an advantages of software reuse?  
a) lower costs  
b) faster software development  
c) high effectiveness  
d) lower risks

Answer: c  
Clarification: Effectiveness depends on how one reuses the existing product.

11. ERP stands for  
a) Effective Reuse Planning  
b) Enterprise Resource Planning  
c) Effective Research Planning  
d) None of the mentioned

Answer: b  
Clarification: Enterprise Resource Planning systems are examples of large-scale COTS reuse.

12. Which framework class include standards and classes that support component communication and information exchange?  
a) System infrastructure frameworks  
b) Middleware integration frameworks  
c) Enterprise application frameworks  
d) MVC

Answer: b

**What is the meaning of COTS product reuse?**  
a) Shared components works together at different places in an application  
b) Software development is by configuring and integrating the existing application software  
c) Both A and B  
d) None of these  
Answer: b  
**The given sentence is the example of which of the following specialization?**  
“A Pizza ordering system may be adapted to cope with a centralized Pizza ordering process in “Pizza Hut” and a distributed process in another one.”  
a) Functional specialization  
b) Platform specialization  
c) Environment specialization  
d) Process specialization  
Answer: d  
**Which is the generic structure that is prolonged to create a more specific subsystem or application?**  
a) Framework

b) Object-oriented programming language  
c) Software reuse  
d) None of the mentioned  
Answer: a **Which of the following are the generic application software that may be designed to support a particular business type, activity, or sometimes a complete enterprise?**  
a) COTS-integrated software  
b) COTS-solution software  
c) ERP software  
d) Both A and B  
Answer: b  
**.NET are specific to which of the following platform?**  
a) Microsoft  
b) Mac-OS  
c) Java  
d) LINUX  
Answer: a  
**The full form of COTS is?**  
a) Commercial Off-The-System state  
b) Commercial Off-The-Shelf states  
c) Commercial Off-The-Shelf systems  
d) None of the mentioned  
Answer: c  
**………is the drawback of software reuse?**  
a) high effectiveness  
b) faster software development  
c) lower costs  
d) lower risks  
Answer: a  
**What is the full form of ERP?**  
a) Effective Reuse Planning  
b) Effective Research Planning  
c) Enterprise Resource Planning  
d) Effective Reuse Planning  
Answer: c  
**In software reuse, the software development process follows the concept of reusing the existing software.**  
a) True  
b) False  
Answer: a

1. A software element conforms to a standard component model and can be independently deployed and composed without modification according to a composition standard.  
a) True  
b) False

Component based software development

Answer: a  
Clarification: This definition is essentially based on standards so that a software unit that conforms to these standards is a component.

2. Which of the following is a feature of CBSE?  
a) It increases quality  
b) CBSE shortens delivery time  
c) CBSE increases productivity  
d) All of the mentioned

Answer: d  
Clarification: CBSE increases quality, especially evolvability and maintainability. Other options are also favor CBSE.

3. Which of the following term is best defined by the statement:”For a component to be composable, all external interactions must  
take place through publicly defined interfaces”?  
a) Standardized  
b) Independent  
c) Composable  
d) Documented

Answer: c  
Clarification: The answer is self explanatory.

4. A component model defines standards for  
a) properties  
b) methods  
c) mechanisms  
d) all of the mentioned

Answer: d  
Clarification: A component model defines standards for properties individual components must satisfy and methods and mechanisms for composing components.

5. Which of the following is not an example of component technology?  
a) EJB  
b) COM+  
c) .NET  
d) None of the mentioned

Answer: d  
Clarification: All the options supports the implementation, assembly, deployment, execution of components.

6. Which of the following term is best defined by the statement:”The operations on each side of the interface have the same name but their parameter types or the number of parameters are different.”?  
a) Parameter incompatibility  
b) Operation incompleteness  
c) Operation incompatibility  
d) None of the mentioned

Answer: a  
Clarification: None.

7. Which of the following term is best defined by the statement: “The names of the operations in the ‘provides’ and ‘requires’ interfaces are different.”?  
a) Parameter incompatibility  
b) Operation incompleteness  
c) Operation incompatibility  
d) None of the mentioned

Answer: c  
Clarification: None.

8. A \_\_\_\_\_\_\_\_\_ defines a set of standards for components, including interface standards, usage standards, and deployment standards.  
a) Component-based software engineering  
b) Component composition  
c) Component model  
d) Component interfaces

Answer: c  
Clarification: The implementation of the component model provides a set of common services that may be used by all components.

9. When composing reusable components that have not been written for your application, you may need to write adaptors or ‘glue code’ to reconcile the different \_\_\_\_\_\_\_\_\_\_  
a) Component modules  
b) Component composition  
c) Component model  
d) Component interfaces

Answer: c  
Clarification: None.

10.\_\_\_\_\_\_\_\_\_\_\_\_ is a reuse-based approach to defining, implementing, and composing loosely coupled independent components into systems.  
a) Component-based software engineering  
b) Component composition  
c) Component model  
d) Component interfaces

Answer: d  
Clarification: Component Interfaces are PeopleSoft’s way of exposing the business logic developed into Components for consumption by other areas of the system.

1. What are the benefits for component based product lines?  
a) Being able to take faster advantage of new product and new technology  
b) Higher employee productivity  
c) Increase in time to market market  
d) None of the mentioned

Answer: c  
Clarification: The benefits are Being able to take faster advantage of new product and new technology, High employee productivity.

2. Which of the following are incorrect needs for component based product lines?  
a) More changeable system  
b) More extensible system  
c) Less reliable components  
d) All of the mentioned

Answer: c  
Clarification: High extensible system are needed for component based product lines.

3. Interface assumptions can be into which of following forms?  
a) Provides assumption  
b) Required assumption  
c) All of the mentioned  
d) None of the mentioned

Answer: c  
Clarification: All of the mentioned are the two forms of Interface assumptions.

4. Which of the following are types of Interface mismatch?  
a) Avoid it  
b) Detect those cases you haven’t avoided  
c) Repair those cases you have detected by adapting the components  
d) All of the mentioned

Answer: d  
Clarification: All of the mentioned are types of interface mismatch.

5. Which of the following are techniques for repairing interface mismatch?  
a) Wrappers  
b) Bridges  
c) Mediaters  
d) All of the mentioned

Answer: d  
Clarification: All of the mentioned are the techniques for repairing interface mismatch.

6. Which of the following truly describes Wrappers?  
a) Encapsulation whereby some components is encased within an alternative abstraction  
b) Translation between assumptions of an arbitrary component to some provides assumptions of some other arbitrary components  
c) Incorporation of planning function that in effect results in runtime determination of the translation  
d) None of the mentioned

Answer: a  
Clarification: Wrappers are Encapsulation whereby some components is encased within an alternative abstraction.

7. Which of the following truly describes Mediators?  
a) Encapsulation whereby some components is encased within an alternative abstraction  
b) Translation between assumptions of an arbitrary component to some provides assumptions of some other arbitrary components  
c) Incorporation of planning function that in effect results in runtime determination of the translation  
d) None of the mentioned

Answer: c  
Clarification: Mediators are incorporation of planning function that in effect results in runtime determination of the translation.

8. Which of the following truly describes Bridges?  
a) Encapsulation whereby some components is encased within an alternative abstraction  
b) Translation between assumptions of an arbitrary component to some provides assumptions of some other arbitrary components  
c) Incorporation of planning function that in effect results in run-time determination of the translation  
d) None of the mentioned

Answer: b  
Clarification: Bridges are Translation between assumptions of an arbitrary component to some provides assumptions of some other arbitrary components.

9. Which of the following shows properties of the others two interface repairing technique?  
a) Wrappers  
b) Bridges  
c) Mediaters  
d) None of the mentioned

Answer: c  
Clarification: Mediator technique shows properties of other two techniques.

10. Which of techniques for avoiding interface mismatch?  
a) A disciplined approach to specify as many assumptions about a components interface as is feasible  
b) Assumptions stated assertions about sufficiency of the services provided each module  
c) All of the mentioned  
d) None of the mentioned

Answer: a  
Clarification: One of the technique to avoid interface mismatch is a disciplined approach to specify as many assumptions about a components interface as is feasible.

Advance techniques of software engineering :

1. Software is defined as \_\_\_\_\_\_\_\_\_\_\_  
a) set of programs, documentation & configuration of data  
b) set of programs  
c) documentation and configuration of data  
d) None of the mentioned

2. What is Software Engineering?  
a) Designing a software  
b) Testing a software  
c) Application of engineering principles to the design a software  
d) None of the above

3. Who is the father of Software Engineering?  
a) Margaret Hamilton  
b) Watts S. Humphrey  
c) Alan Turing  
d) Boris Beizer

4. What are the features of Software Code?  
a) Simplicity  
b) Accessibility  
c) Modularity  
d) All of the above

5. \_\_\_\_\_\_\_\_\_\_\_\_ is a software development activity that is not a part of software processes.  
a) Validation  
b) Specification  
c) Development  
d) Dependence

6. Define Agile scrum methodology.  
a) project management that emphasizes incremental progress  
b) project management that emphasizes decremental progress  
c) project management that emphasizes neutral progress  
d) project management that emphasizes no progress  
View Answer

7. CASE stands for  
a) Computer-Aided Software Engineering  
b) Control Aided Science and Engineering  
c) Cost Aided System Experiments  
d) None of the mentioned  
View Answer

8. \_\_\_\_\_\_\_\_ is defined as the process of generating analysis and designing documents?  
a) Re-engineering  
b) Reverse engineering  
c) Software re-engineering  
d) Science and engineering  
View Answer

9. The activity that distributes estimated effort across the planned project duration by allocating the effort to specific software developing tasks is \_\_\_\_\_\_\_\_\_\_\_\_  
a) Project scheduling  
b) Detailed schedule  
c) Macroscopic schedule  
d) None of the mentioned  
View Answer

10. What is a Functional Requirement?  
a) specifies the tasks the program must complete  
b) specifies the tasks the program should not complete  
c) specifies the tasks the program must not work  
d) All of the mentioned  
View Answer

11. Why do bugs and failures occur in software?  
a) Because of Developers  
b) Because of companies  
c) Because of both companies and Developers  
d) None of the mentioned  
View Answer

12. Attributes of good software is \_\_\_\_\_\_\_\_\_\_\_\_  
a) Development  
b) Maintainability & functionality  
c) Functionality  
d) Maintainability  
View Answer

13. The Cleanroom philosophy was proposed by \_\_\_\_\_\_\_\_\_  
a) Linger  
b) Mills  
c) Dyer  
d) All of the Mentioned  
View Answer

14. What does SDLC stands for?  
a) System Design Life Cycle  
b) Software Design Life Cycle  
c) Software Development Life Cycle  
d) System Development Life cycle  
View Answer

15. Who proposed the spiral model?  
a) Barry Boehm  
b) Pressman  
c) Royce  
d) IBM  
View Answer

16. \_\_\_\_\_\_\_\_\_\_\_\_\_\_ is not among the eight principles followed by the Software Code of Ethics and Professional Practice.  
a) PRODUCT  
b) ENVIRONMENT  
c) PUBLIC  
d) PROFESSION  
View Answer

17. Which of the following are CASE tools?  
a) Central Repository  
b) Integrated Case Tools  
c) Upper Case Tools  
d) All of the mentioned  
View Answer

18. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ suits the Manifesto for Agile Software Development.  
a) Customer collaboration  
b) Individuals and interactions  
c) Working software  
d) All of the mentioned  
View Answer

19. Software patch is defined as \_\_\_\_\_\_\_\_\_\_\_\_\_\_  
a) Daily or routine Fix  
b) Required or Critical Fix  
c) Emergency Fix  
d) None of the mentioned  
View Answer

20. \_\_\_\_\_\_\_\_\_\_ software development team has no permanent leader.  
a) Controlled Centralized (CC)  
b) Controlled decentralized (CD)  
c) Democratic decentralized (DD)  
d) None of the mentioned  
View Answer

21. Regardless of application area, project size, or complexity, software development work may be divided into three generic phases: the\_\_\_\_\_\_\_\_\_\_ phase, which focuses on *what*, the\_\_\_\_\_\_\_\_\_ phase, which focuses on *how*, and the\_\_\_\_\_\_\_\_\_ phase, which focuses on *change*.  
i. support  
ii. development  
iii. definition  
a) iii, ii, i  
b) iii, i, ii  
c) i, ii, iii  
d) ii, i, iii  
View Answer

22. \_\_\_\_\_\_\_\_\_ is not a fundamental activity for software processes in software development.  
a) Evolution  
b) Design and implementation  
c) Validation  
d) Verification  
View Answer

23. What are agile manifesto principles?  
a) Customer satisfaction  
b) Face-to-face communication within a development team  
c) Changes in requirements are welcome  
d) All of the mentioned  
View Answer

24. Faster delivery is possible with CBSE.  
a) False  
b) True  
View Answer

25. Who proposed Function Points?  
a) Albrecht  
b) Jacobson  
c) Boehm  
d) Booch  
View Answer

26. \_\_\_\_\_\_\_\_\_ is a software development life cycle model that is chosen if the development team has less experience on similar projects.  
a) Iterative Enhancement Model  
b) RAD  
c) Spiral  
d) Waterfall  
View Answer

27. Agile Software Development is based on which of the following type?  
a) Iterative Development  
b) Incremental Development  
c) Both Incremental and Iterative Development  
d) Linear Development  
View Answer

28. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is a software developing team has a defined leader who coordinates specific tasks and secondary leaders that have responsibility for sub tasks.  
a) Democratic decentralized (DD)  
b) Controlled centralized (CC)  
c) Controlled decentralized (CD)  
d) None of the mentioned  
View Answer

29. 4GT Model is a set of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
a) Programs  
b) CASE Tools  
c) Software tools  
d) None of the mentioned  
View Answer

30. Engineers developing software should not  
a) be dependent on their colleagues  
b) maintain integrity and independence in their professional judgment  
c) not knowingly accept work that is outside your competence  
d) not use your technical skills to misuse other people’s computers  
View Answer

31. \_\_\_\_\_\_\_\_\_\_ is not suitable for accommodating any change?  
a) RAD Model  
b) Waterfall Model  
c) Build & Fix Model  
d) Prototyping Model  
View Answer

32. The model which has a major disadvantage in terms of the coding phase of a software life cycle model is \_\_\_\_\_\_\_\_  
a) Rad Model  
b) Spiral Model  
c) 4GT Model  
d) Waterfall Model  
View Answer

33. Adaptive Software Development(ASD) has which of the following three framework activities?  
a) speculation, collaboration, learning  
b) analysis, design, coding  
c) requirements gathering, adaptive cycle planning, iterative development  
d) all of the mentioned  
View Answer

34. Which of the following is not a project factor that should be considered when planning the structure of software developing teams?  
a) The rigidity of the delivery date  
b) The degree of sociability required for the projectd) The difficulty of the problem to be solved  
View Answer

35. What is the full form of the “COCOMO” model?  
a) Cost Constructive Estimation Model  
b) Constructive Cost Estimation Model  
c) Constructive Case Estimation Model  
d) Constructive Cost Estimating Model  
View Answer

36. Which one of the following is not a software process quality?  
a) Visibility  
b) Timeliness  
c) Productivity  
d) Portability  
View Answer

37. Cleanroom software development process complies with the operational analysis principles by using a method called known as  
a) referential transparency  
b) degenerative error correction  
c) box structure specification  
d) none of the mentioned  
View Answer

38. What is system software?  
a) computer program  
b) Testing  
c) AI  
d) IOT  
View Answer

39. Quality Management is known as \_\_\_\_\_\_\_  
a) SQI  
b) SQA  
c) SQM  
d) SQA and SQM  
View Answer

40. \_\_\_\_\_\_\_\_\_\_\_\_\_ is the definition of objects in the database that leads directly to a standard approach for the creation of software documentation.  
a) Data/data integration  
b) Information sharing   
c) Document standardization  
d) Data integrity  
View Answer

41. \_\_\_\_\_\_\_\_\_\_\_\_\_\_ is an indirect measure of software development process.  
a) Cost  
b) Effort Applied  
c) Efficiency  
d) All of the mentioned  
View Answer

42. According to an IBM research, “31% of projects are abandoned before they are completed, 53% exceed their cost projections by an average of 189 percent, and 94 projects are restarted for every 100 projects.” What is the significance of these figures?  
a) Lack of software ethics and understanding  
b) Management issues in the company  
c) Lack of adequate training  
d) All of the mentioned  
View Answer

43. Which of the following document contains the user system requirements?  
a) SRD  
b) DDD  
c) SDD  
d) SRS  
View Answer

44. \_\_\_\_\_\_\_\_\_\_\_\_\_ specification is also known as SRS document.  
a) white-box  
b) grey-box  
c) black-box  
d) none of the mentioned  
View Answer

45. Which of the following is not a part of Software evolution?  
a) Re-engineering activities  
b) Maintenance activities  
c) Development activities  
d) Negotiating with client  
View Answer

46. \_\_\_\_\_\_\_\_\_\_\_ is a Strategy to achieve Software diversity.  
a) Explicit specification of different algorithms  
b) Different programming languages  
c) Different design methods and tools  
d) All of the mentioned  
View Answer

47. In which step of SDLC actual programming of software code is done?  
a) Development and Documentation  
b) Maintenance and Evaluation  
c) Design  
d) Analysis

48. Software Debugging is known as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
a) identifying the task to be computerized  
b) creating program code  
c) creating the algorithm  
d) finding and correcting errors in the program code

49. The word which describes the importance of software design is?  
a) Complexity  
b) Quality  
c) Efficiency  
d) Accuracy

50. The incorrect activity among the following for the configuration management of a software system is \_\_\_\_\_\_\_\_  
a) Version management  
b) System management  
c) Change management  
d) Internship management

**1. Object oriented analysis and design can be handled by the one who knows UML.**  
a. true

b. false

**Answer:**  
b. false  
Clarification: the unified modeling language includes a set of graphic notation techniques to create visual models of object-oriented software-intensive systems.

**2. At Conceptual level Class diagrams should include**  
a. operations only

b. attributes only

c. both (a) and (b)

d. none of the mentioned

**Answer:**  
b. attributes only  
Clarification: in software engineering, a class diagram in the unified modeling language (uml) is a type of static structure diagram that describes the structure of a system by showing the system’s classes, their attributes, operations, and the relationships among objects.

**3. Select the statement true for activity diagrams.**  
a. they can be used to discover parallel activities

b. they are used to depict workflow for a particular business activity

c. activity diagram do not tell who does what and are difficult to trace back to object models

d. all of the mentioned

**Answer:**  
d. all of the mentioned  
Clarification: activity diagrams are graphical representations of workflows of step wise activities and actions with support for choice, iteration and concurrency.

**4. Constraints can be represented in UML by**  
a. {text}

b. [text] c) constraint

c. d) none of the mentioned

**Answer:**  
a. {text}  
Clarification: constraints are represented by {text string}.

**5. What is an object?**  
a. an object is an instance of a class.

b. an object includes encapsulation of data

c. an object is not an instance of a class

**Answer:**  
a. an object is an instance of a class.  
Clarification: an object is an instance of a class.

**6. What is an abstract class?**  
a. a class that has direct instances, but whose descendants may have direct instances.

b. a class that has direct instances, but whose descendants may not have direct instances.

c. a class that has no direct instances, but whose descendants may have direct instances.

**Answer:**  
c. a class that has no direct instances, but whose descendants may have direct instances.  
Clarification: an abstract type is a type in a nominative type system which cannot be instantiated directly.

**7. Which of the following are the valid relationships in Use Case Diagrams**  
a. generalization

b. include

c. extend

d. all of the mentioned

**Answer:**  
d. all of the mentioned  
Clarification: generalization, include, extend all of these are valid relationships in use case diagrams.

**8. Which of the following statement(s) is true about interaction diagrams?**  
a. interaction diagrams are at their best when they deal with one main design flow and not multiple variants that can happen.

b. interaction diagrams are good at designing part or all of one use case’s functionality across multiple objects.

c. interaction diagrams allow the analyst to show iteration and conditional execution for messaging between objects.

d. all of these

**Answer:**  
d. all of these  
Clarification: interaction diagram is used to describe some type of interactions among the different elements in the model. so this interaction is a part of dynamic behaviour of the system.

**9. UML interfaces are used to:**  
a. specify required services for types of objects.

b. program in java, but not in c++ or smalltalk.

c. define executable logic to reuse across classes.

d. define an api for all classes.

**Answer:**  
a. specify required services for types of objects.  
Clarification: an interface is like a template design for a class that contains no data or implementation; only definitions for methods, properties etc.

**10. Referring to the attached diagram, the arrow indicates:**  
a. navigability

b. dependency

c. association

d. refers to

**Answer:**  
a. navigability  
Clarification: the arrows describe the ways you can navigate.

**11. Which of the following is a building block of UML?**  
a. things

b. relationships

c. diagrams

d. all of the mentioned

**Answer:**  
d. all of the mentioned  
Clarification: all are the building blocks of uml which are further sub-categorized.

**12. Classes and interfaces are a part of**  
a. structural things

b. behavioral things

c. grouping things

d. annotational things

**Answer:**  
a. structural things  
Clarification: structural things are mostly static parts of a model, representing elements that are either conceptual or physical.

**13. .What is a collection of operations that specify a service of a class or component?**  
a. use case

b. actor

c. interface

d. relationship

**Answer:**  
c. interface  
Clarification: the answer is self explanatory.

**14. What can be requested from any object of the class to affect behavior?**  
a. object

b. attribute

c. operation

d. instance

**Answer:**  
c. operation  
Clarification: an operation is the implementation of a service that can be requested from any object of the class to affect behavior.

**15. Which things are dynamic parts of UML models?**  
a. structural things

b. behavioral things

c. grouping things

d. annotational things

**Answer:**  
b. behavioral things  
Clarification: these are the verbs of a model, representing behavior over time and space.

**16. Which diagram in UML emphasizes the time-ordering of messages?**  
a. activity

b. sequence

c. collaboration

d. class

**Answer:**  
b. sequence  
Clarification: this diagram is a model describing how groups of objects collaborate in some behavior over time.

**17. Object diagram captures the behavior of a single use case.**  
a. true

b. false

**Answer:**  
b. false  
Clarification: sequence diagram is responsible for this.

**18. If you are working on real-time process control applications or systems that involve concurrent processing, you would use a**  
a. activity diagram

b. sequence diagram

c. statechart diagram

d. object diagram

**Answer:**  
c. statechart diagram  
Clarification: a statechart diagram shows a state machine, consisting of states, transitions, events, and activities.

**19. Which diagram shows the configuration of run-time processing elements?**  
a. deployment diagram

b. component diagram

c. node diagram

d. er-diagram

**Answer:**  
a. deployment diagram  
Clarification: a deployment diagram shows the configuration of run-time processing elements and the software components, processes, and objects.

**20. Which things in UML are the explanatory parts of UML models?**  
a. structural things

b. behavioral things

c. grouping things

d. annotational things

**Answer:**  
d. annotational things  
Clarification: it include a note which is simply a symbol for rendering constraints and comments attached to an element or a collection of elements.

**21. Which of the following term is best defined by the statement:”a structural relationship that specifies that objects of one thing are connected to objects of another”?**  
a. association

b. aggregation

c. realization

d. generalization

**Answer:**  
a. association  
Clarification: the answer is self explanatory.

**22. What refers to the value associated with a specific attribute of an object and to any actions or side?**  
a. object

b. state

c. interface

d. none of the mentioned

**Answer:**  
b. state  
Clarification: in a state chart diagram, effects occur when the attribute’s value changes.

**23. Which of the following UML diagrams has a static view?**  
a. collaboration

b. use case

c. state chart

d. activity

**Answer:**  
b. use case  
Clarification: a use case diagrams captures only the functionality of the system whereas a dynamic model/view captures the functions as well as the action.

**24. Which diagram in UML shows a complete or partial view of the structure of a modeled system at a specific time?**  
a. sequence diagram

b. collaboration diagram

c. class diagram

d. object diagram

**Answer:**  
d. object diagram  
Clarification: an object diagram focuses on some particular set of object instances and attributes, and the links between the instances. it is a static snapshot of a dynamic view of the system.

**25. Interaction Diagram is a combined term for**  
a. sequence diagram + collaboration diagram

b. activity diagram + state chart diagram

c. deployment diagram + collaboration diagram

d. none of the mentioned

**Answer:**  
a. sequence diagram + collaboration diagram  
Clarification: interaction diagram are used to formalize the dynamic behavior of the system.

**26. Structure diagrams emphasize the things that must be present in the system being modeled.**  
a. true

b. false

**Answer:**  
a. true  
Clarification: since structure diagrams represent the structure they are used extensively in documenting the architecture of software systems

**27. Which of the following diagram is time oriented?**  
a. collaboration

b. sequence

c. activity

**Answer:**  
b. sequence  
Clarification: a sequence diagrams timeline along which tasks are completed

**28. How many diagrams are here in Unified Modelling Language?**  
a. six

b. seven

c. eight

d. nine

**Answer:**  
d. nine  
Clarification: the nine uml diagrams include use-case, sequence, collaboration, activity, state-chart, deployment, class, object and component.

**29. Which of the following is not needed to develop a system design from concept to detailed object-oriented design?**  
a. designing system architecture

b. developing design models

c. specifying interfaces

d. developing a debugging system

**Answer:**  
d. developing a debugging system  
Clarification: the debugging system is a part of testing phase.

**30. Which of the following is a dynamic model that shows how the system interacts with its environment as it is used?**  
a. system context model

b. interaction model

c. environmental model

d. both system context and interaction

**Answer:**  
b. interaction model  
Clarification: the answer is self explanatory.

**31. Which of the following is a structural model that demonstrates the other systems in the environment of the system being developed?**  
a. system context model

b. interaction model

c. environmental model

d. both system context and interaction

**Answer:**  
a. system context model  
Clarification: the context model of a system may be represented using associations. associations simply show that there are some relationships between the entities involved in the association.

**32. Which of the following come under system control?**  
a. reconfigure

b. shutdown

c. powersave

d. all of the mentioned

**Answer:**  
d. all of the mentioned  
Clarification: functionalities are governed by the system.

**33. We use \_\_\_\_\_\_\_\_\_ where various parts of system use are identified and analyzed in turn.**  
a. tangible entities

b. scenario-based analysis

c. design-based analysis

d. none of the mentioned

**Answer:**  
b. scenario-based analysis  
Clarification: use a scenario-based analysis where various scenarios of system use are identified and analyzed in turn.

**34. Which model describes the static structure of the system using object classes and their relationships?**  
a. sequence model

b. subsystem model

c. dynamic model

d. structural model

**Answer:**  
d. structural model  
Clarification: important relationships that may be documented at this stage are generalization (inheritance) relationships, uses/used-by relationships, and composition relationships.

**35. Which model shows the flow of object interactions?**  
a. sequence model

b. subsystem model

c. dynamic model

d. both sequence and dynamic model

**Answer:**  
a. sequence model  
Clarification: sequence model are represented using a uml sequence or a collaboration diagram and are dynamic models

**36. If the system state is Shutdown then it can respond to which of the following message?**  
a. restart()

b. reconfigure()

c. powersave()

d. all of the mentioned

**Answer:**  
d. all of the mentioned  
Clarification: a restart() message causes a transition to normal operation. both the powersave() and reconfigure() messages cause a transition to a state in which the system reconfigures itself.

**37. Which message is received so that the system moves to the Testing state, then the Transmitting state, before returning to the Running state?**  
a. signalstatus()

b. remotecontrol()

c. reconfigure()

d. reportstatus()

**Answer:**  
d. reportstatus()  
Clarification: the answer is self explanatory.

**38. Open source development involves making the source code of a system publicly available.**  
a. true

b. false

**Answer:**  
a. true  
Clarification: this means that many people can propose changes and improvements to the software.

**39. Which of the following is not the primary objectives in the analysis model?**  
a. describing the customer complaints

b. establishing a basis for the creation of a software design

c. defining a set of requirements that can be validated once the software is built

d. none of the mentioned

**Answer:**  
d. none of the mentioned  
Clarification: all the options are covered in analysis model.

**40. A description of each function presented in the DFD is contained in a \_\_\_\_\_\_\_\_.**  
a. data flow

b. process specification

c. control specification

d. data store

**Answer:**  
b. process specification  
Clarification: the answer is self explanatory.

**41. Which diagram indicates the behaviour of the system as a consequence of external events?**  
a. data flow diagram

b. state transition diagram

c. control specification diagram

d. workflow diagram

**Answer:**  
b. state transition diagram  
Clarification: the state transition diagram represents the various modes of behavior (called states) of the system and the manner in which transitions are made from state to state.

**42. A data model contains**  
a. data object

b. attributes

c. relationships

d. all of the mentioned

**Answer:**  
d. all of the mentioned  
Clarification: the data object,

**43. The \_\_\_\_\_\_\_\_\_\_ of a relationship is 0 if there is no explicit need for the relationship to occur or the relationship is optional.**  
a. modality

b. cardinality

c. entity

d. structured analysis

**Answer:**  
a. modality  
Clarification: the modality is 1 if an occurrence of the relationship is mandatory, else 0 for optional relationship.

**44. A \_\_\_\_\_\_\_\_\_ is a graphical representation that depicts information flow and the transforms that are applied as data moves from input to output.**  
a. data flow diagram

b. state transition diagram

c. control specification

d. workflow diagram

**Answer:**  
b. state transition diagram  
Clarification: the basic form of a data flow diagram, also known as a data flow graph or a bubble chart.

**45. A data condition occurs whenever a data is passed to an input element followed by a processing element and the result in control output.**  
a. true

b. false

**Answer:**  
a. true  
Clarification: standard flow of condition check.

**46. The \_\_\_\_\_\_\_\_\_\_ enables the software engineer to develop models of the information domain and functional domain at the same time**  
a. data flow diagram

b. state transition diagram

c. control specification

d. activity diagram

**Answer:**  
a. data flow diagram  
Clarification: as the dfd is refined into greater levels of detail, the analyst performs an implicit functional decomposition of the system,

**47. The \_\_\_\_\_\_\_\_\_\_ contains a state transition diagram that is a sequential specification of behavior.**  
a. data flow diagram

b. state transition diagram

c. control specification

d. workflow diagram

**Answer:**  
c. control specification  
Clarification: the control specification(cspec) describes the behavior of the system, but it gives us no information about

**48. Which of the following is not a construct?**  
a. sequence

b. condition

c. repetition

d. selection

**Answer:**  
d. selection  
Clarification: sequence implements processing steps that are essential in the specification of any algorithm.

**49. Which of the following steps is applied to develop a decision table?**  
a. list all actions that can be associated with a specific procedure

b. list all conditions during execution of the procedure.

c. define rules by indicating what action(s) occurs for a set of conditions.

d. all of the mentioned

**Answer:**  
d. all of the mentioned  
Clarification: a decision table includes action stub and a condition stub with a set of rules.

**50. Which of the following term is best defined by the statement:”The ability to represent local and global data is an essential element of component-level design.”?**  
a. data representation

b. logic verification

c. “code-to” ability

d. automatic processing

**Answer:**  
a. data representation  
Clarification: the answer is self explanatory.

**51. A software component**  
a. implements some functionality

b. has explicit dependencies through provides and required interfaces

c. communicates through its interfaces only

d. all of the mentioned

**Answer:**  
d. all of the mentioned  
Clarification: all the options identify with features of a software component.

**52. Which diagram evolved from a desire to develop a procedural design representation that would not allow violation of the structured constructs?**  
a. state transition diagram

b. box diagram

c. er diagram

d. none of the mentioned

**Answer:**  
b. box diagram  
Clarification: none.

**53. A \_\_\_\_\_\_\_\_\_\_ executes the loop task first, then tests a condition and repeats the task until the condition fails.**  
a. repeat until

b. condition

c. do while tests

d. if then-else

**Answer:**  
a. repeat until  
Clarification: the answer is self explanatory.

**54. Which of the following is not a characteristics of box diagram?**  
a. functional domain

b. arbitrary transfer of control is impossible

c. recursion is easy to represent

d. providing a notation that translates actions and conditions

**Answer:**  
d. providing a notation that translates actions and conditions  
Clarification: this functionality is covered by uml diagrams.

**55. The\_\_\_\_\_\_\_\_ is represented as two processing boxes connected by an line (arrow) of control.**  
a. repetition

b. sequence

c. condition

d. none of the above

**Answer:**  
b. sequence  
Clarification: the answer is self explanatory.

**56. Which of the following term is best defined by the statement “Notation that can be input directly into a computer-based development system offers significant benefits.”?**  
a. machine readability

b. maintainability

c. structure enforcement

d. overall simplicity

**Answer:**  
a. machine readability  
Clarification: readability is processing input.

**57. Which of the following is golden rule for interface design?**  
a. place the user in control

b. reduce the user’s memory load

c. make the interface consistent

d. all of the mentioned

**Answer:**  
d. all of the mentioned  
Clarification: these golden rules actually form the basis for a set of user interface design principles that guide this important software design activity.

**58. Which of the following is not a design principle that allow the user to maintain control?**  
a. provide for flexible interaction

b. allow user interaction to be interrupt-able and undo-able

c. show technical internals from the casual user

d. design for direct interaction with objects that appear on the screen

**Answer:**  
c. show technical internals from the casual user  
Clarification: the user interface should move the user into the virtual world of the application.

**59. Which of the following is not a user interface design process?**  
a. user, task, and environment analysis and modeling

b. interface design

c. knowledgeable, frequent users

d. interface validation

**Answer:**  
c. knowledgeable, frequent users  
Clarification: these are the end user for whom the product is being built.

**60. When users are involved in complex tasks, the demand on \_\_\_\_\_\_\_\_\_\_ can be significant.**  
a. short-term memory

b. shortcuts

c. objects that appear on the screen

d. all of the mentioned

**Answer:**  
a. short-term memory  
Clarification: the interface should be designed to reduce the requirement to remember past actions and results.

**61. Which of the following option is not considered by the Interface design?**  
a. the design of interfaces between software components

b. the design of interfaces between the software and human producers and consumers of information

c. the design of the interface between two computers

d. all of the mentioned

**Answer:**  
c. the design of the interface between two computers  
Clarification: the answer is self explanatory

**62. A software might allow a user to interact via**  
a. keyboard commands

b. mouse movement

c. voice recognition commands

d. all of the mentioned

**Answer:**  
d. all of the mentioned  
Clarification: all the mentioned input mediums are available today.

63. A software engineer designs the user interface by applying an iterative process that draws on predefined design principles.  
a. true

b. false

**Answer:**  
a. true  
Clarification: the statement is true.

64. What incorporates data, architectural, interface, and procedural representations of the software?  
a. design model

b. user’s model

c. mental image

d. system image

**Answer:**  
a. design model  
Clarification: the requirements specification may establish certain constraints that help to define the user of the system,

65. What establishes the profile of end-users of the system?  
a. design model

b. user’s model

c. mental image

d. system image

**Answer:**  
b. user’s model  
Clarification: to build an effective user interface, all design should begin with an understanding of the intended users,

66. What combines the outward manifestation of the computer-based system , coupled with all supporting information that describe system syntax and semantics?  
a. mental image

b. interface design

c. system image

d. interface validation

**Answer:**  
c. system image  
Clarification: when the system image and the system perception are coincident, users generally feel comfortable with the software and use it effectively.

67. What do you understand by V&V in software testing?  
a. verified version

b. version validation

c. verification and validation

d. version verification

**Answer:**  
c. verification and validation  
Clarification: v&v generally refers to any activity that attempts to ensure that the software will function as required.

68. In static test techniques, behavioral and performance properties of the program are observed.  
a. true

b. false

**Answer:**  
b. false  
Clarification: static analysis techniques are based solely on the (manual or automated) examination of project documentation of software models and code.

69. Which granularity level of testing checks the behavior of module cooperation?  
a. unit testing

b. integration testing

c. acceptance testing

d. regression testing

**Answer:**  
b. integration testing  
Clarification: integration testing is the phase in software testing in which individual software modules are combined and tested as a group.

**70. Which test refers to the retesting of a unit, integration and system after modification, in order to ascertain that the change has not introduced new faults?**  
a. regression test

b. smoke test

c. alpha test

d. beta test

**Answer:**  
a. regression test  
Clarification: regression test seeks to uncover new software bugs in existing functional and non-functional areas of a system after changes have been made to them.

**71. Which of the following is a black box testing strategy?**  
a. all statements coverage

b. control structure coverage

c. cause-effect graphs

d. all paths coverage

**Answer:**  
c. cause-effect graphs  
Clarification: rest are test strategies of white box testing.

**72. A set of inputs, execution preconditions and expected outcomes is known as a**  
a. test plan

b. test case

c. test document

d. test suite

**Answer:**  
b. test case  
Clarification: the answer is self explanatory.

**73. In which test design each input is tested at both ends of its valid range and just outside its valid range?**  
a. boundary value testing

b. equivalence class partitioning

c. boundary value testing and equivalence class partitioning

d. decision tables

**Answer:**  
a. boundary value testing  
Clarification: boundary value analysis is a software testing technique in which tests are designed to include representatives of boundary values.

**74. A white box test scales up well at different granularity levels of testing.**  
a. true

b. false

**Answer:**  
b. false  
Clarification: a white box test is mostly applicable at unit and integration testing level.

**75. When does the testing process stops?**  
a. when resources (time and budget) are over

b. when some coverage is reached

c. when quality criterion is reached

d. testing never ends.

**Answer:**  
c. when quality criterion is reached  
Clarification: as software testing is an exhaustive process, when the quality assurance is established and the product is ready to be delivered, testing is stopped.

**76. Which of the following is not a part of a test design document?**  
a. test plan

b. test design specification

c. test case specification

d. test log

**Answer:**  
d. test log  
Clarification: test log is a part of testing result document.

**77. Specifying a set of test cases or test paths for each item to be tested at that level is known as**  
a. test case generation

b. test case design

c. all of the mentioned

d. none of the mentioned

**Answer:**  
c. all of the mentioned  
Clarification: the answer is self explanatory.

**78. Acceptance & system test planning are a part of architectural design.**  
a. true

b. false

**Answer:**  
b. false  
Clarification: they are a part of requirements engineering, while integration & unit test planning come under architectural design.

**79. PRD stands for**  
a. product requirement document

b. project requirement document

c. product restrictions document

d. none of the mentioned

**Answer:**  
a. product requirement document  
Clarification: a product requirements document (prd) is a document written by a company that defines a product they are making,

**80. Reuse-based software engineering is a software engineering strategy where the development process is geared to reusing existing software.**  
a. true

b. false

**Answer:**  
a. true  
Clarification: the answer is self explanatory.

**81. The open source movement has meant that there is a huge reusable code base available at**  
a. free of cost

b. low cost

c. high cost

d. short period of time

**Answer:**  
b. low cost  
Clarification: the open source movement has meant that there is a huge reusable code base available at low cost.

**82. reused in a database management system”.**  
a. application system reuse

b. component reuse

c. object and function reuse

d. none of the mentioned

**Answer:**  
b. component reuse  
Clarification: components of an application, ranging in size from subsystems to single objects, may be reused.

**83. COTS stands for**  
a. commercial off-the-shelf systems

b. commercial off-the-shelf states

c. commercial off-the-system state

d. none of the mentioned

**Answer:**  
a. commercial off-the-shelf systems  
Clarification: the answer is self explanatory.

**84. COTS product reuse means**  
a. class and function libraries that implement commonly used abstractions are available for reuse.

b. shared components are woven into an application at different places when the program is compiled.

c. large-scale systems that encapsulate generic business functionality and rules are configured for an organization.

d. systems are developed by configuring and integrating existing application systems.

**Answer:**  
d. systems are developed by configuring and integrating existing application systems.  
Clarification: the answer is self explanatory.

**85. .NET are specific to which platform?**  
a. java

b. mac-os

c. microsoft

d. linux

**Answer:**  
c. microsoft  
Clarification: net framework (pronounced dot net) is a software framework developed by microsoft that runs primarily on microsoft windows.

**86. Which of the following is a generic structure that is extended to create a more specific subsystem or application?**  
a. software reuse

b. object-oriented programming language

c. framework

d. none of the mentioned

**Answer:**  
c. framework  
Clarification: frameworks are implemented as a collection of concrete and abstract object classes in an object-oriented programming language.

**87. “An ordering system may be adapted to cope with a centralized ordering process in one company and a distributed process in another.” Which category the example belong to?**  
a. process specialization

b. platform specialization

c. environment specialization

d. functional specialization

**Answer:**  
a. process specialization  
Clarification: in process specialization, the system is adapted to cope with specific business processes.

**88. What are generic application systems that may be designed to support a particular business type, activity, or sometimes a complete enterprise?**  
a. cots-solution systems

b. cots-integrated systems

c. erp systems

d. both cots-solution and cots-integrated systems

**Answer:**  
a. cots-solution systems  
Clarification: the answer is self explanatory

**89. Which of the following is not an advantages of software reuse?**  
a. lower costs

b. faster software development

c. high effectiveness

d. lower risks

**Answer:**  
c. high effectiveness  
Clarification: effectiveness depends on how one reuses the existing product.

**90. ERP stands for**  
a. effective reuse planning

b. enterprise resource planning

c. effective research planning

d. none of the mentioned

**Answer:**  
b. enterprise resource planning  
Clarification: enterprise resource planning systems are examples of large-scale cots reuse.

**91. Which framework class include standards and classes that support component communication and information exchange?**  
a. system infrastructure frameworks

b. middleware integration frameworks

c. enterprise application frameworks

d. mvc

**Answer:**  
b. middleware integration frameworks  
Clarification: the answer is self explanatory.

**92. Which of the following option is not provided by formal methods?**  
a. providing frameworks

b. verifying systems

c. provide investors

d. both providing frameworks and verifying systems

**Answer:**  
d. both providing frameworks and verifying systems  
Clarification: a method is formal if it has a sound mathematical basis, typically given by a formal specification language.

**93. \_\_\_\_\_\_\_\_\_\_\_ are statements that can be interpreted in a number of ways.**  
a. contradictions

b. ambiguities

c. vagueness

d. comments

**Answer:**  
a. contradictions  
Clarification: as the name indicates, these statements may be interpreted differently as per user.

**94. What defines the circumstances in which a particular operation is valid?**  
a. contradictions

b. post-condition

c. vagueness

d. none of the mentioned

**Answer:**  
d. none of the mentioned  
Clarification: a precondition defines the circumstances in which a particular operation is valid.

**95. Which of the following is a way of making a statement about the elements of a set that is true for every member of the set?**  
a. set

b. sequence

c. universal quantification

d. both set and sequence

**Answer:**  
c. universal quantification  
Clarification: the answer is self explanatory.

**96. Which of the following occurs often due to the bulkiness of a system specification document?**  
a. contradictions

b. ambiguities

c. vagueness

d. incompleteness

**Answer:**  
c. vagueness  
Clarification: achieving a high level of precision consistently is an almost impossible task.

**97. The \_\_\_\_\_\_\_\_\_ of a formal specification language is often based on a syntax that is derived from standard set theory notation and predicate calculus.**  
a. semantic domain

b. syntactic domain

c. sequence

d. set

**Answer:**  
b. syntactic domain  
Clarification: the answer is self explanatory

**98. Which of the following provides a concise, unambiguous, and consistent method for documenting system requirements?**  
a. cmm

b. iso-9001

c. case tools

d. formal methods

**Answer:**  
d. formal methods  
Clarification: formal methods provide a concise, unambiguous, and consistent method for documenting system requirements.

**99. The \_\_\_\_\_\_\_\_\_\_\_\_ of a specification language indicates how the language represents system requirements.**  
a. semantic domain

b. syntactic domain

c. sequence

d. set

**Answer:**  
a. semantic domain