

**OBJECTIVE TYPE BIT BANK FOR THE SELECTION OF THE POST OF SR.LECTURER(WORK STUDY)
AT STC/SC**

1. The fraction defective chart that records the proportion defective items in a sample is chart.

- A. \bar{X} bar
- B. R
- C. c_s
- D. p

2. Which of the following statement is not true for break even analysis?

- A. Fixed cost does not vary with total production
- B. Total cost varies with the total production
- C. Variable cost is dependent on total production
- D. Breakeven point is the point where fixed cost line and variable cost line intersect with each other on a volume cost graph.

3. VED analysis of inventory management stands for

- A. Vital-Essential-Desirable
- B. Valuable-Easy-Difficult
- C. Very-Essentially-Desired
- D. Valuable-Effective-Difficult to obtain

4. The symbol of rectangle shape represents the process of in the process analysis.

- A. Transportation
- B. Operation
- C. Inspection
- D. Delay

5. Which of the following is not a type of flow process chart?

- A. Material
- B. Method
- C. Machine
- D. Man

6. Which of the following is not the definition of Quality?

- A. conformance of specification
- B. Fitness for use
- C. Spare part maintenance
- D. Customer delight

7. Which of the following method is used for recording path of movement during method study?

- A. Chronocyclographs
- B. Simo chart
- C. Two handed process chart
- D. Therblig

8. In a Layout all machines or process of the same type are grouped together.

- A. Fixed position
- B. Factory
- C. Process
- D. Product

9. Mass production is characterized by

- A. Low volume high variety
- B. High volume low variety
- C. High volume high variety
- D. Low volume low variety

10. The therblig symbol used for micro motion of 'release' is

- A. R
- B. RE
- C. RL
- D. RS

11. process chart is a graphic representation of the sequence of all the operations and inspections involved in a process or procedure.

- A. Operation
- B. Outline
- C. Travel
- D. Flow process

12. Formula for calculating standard time (S) when observed time (O), rating factor (r) and PFD allowances are known is

A. $S = (O/r) + PFD$

B. $S = (O*r)-PFD$

C. $S = (O/r) (PFD).$

D. $S = O*r (1+PFD).$

13. Formula for calculating EOQ in inventory management is

(Where D is annual demand quantity, K is fixed cost per order and H is annual holding cost)

A. $EOQ = (2*D*K/H)^{1/2}$

B. $EOQ = (D*K/2H)^{1/2}$

C. $EOQ = (2*K/D*H)^{1/2}$

D. $EOQ = (K/2*D*H)^{1/2}$

14. As per the principles of motion economy related to the sitting standard work place for males the thigh clearance should range between

A. 10" to 12"

B. 8" to 10"

C. 6" to 8"

D. 12" to 14"

15. Which one of the following forecasting techniques is not suited for making forecasts for planning production schedules in the short range?

A. Moving average

B. Exponential moving average

C. Regression a nalysis

D. Delphi

16. When using a simple moving average to forecast demand, one should

A. Give equal weight to all demand data

B. Assign more weight to the recent demand data

C. Include new demand data in the average without discarding the earlier data

D. Include new demand data in the average after discarding some of the earlier demand data

17. Work study consists of

- (A) Effective use of plant and equipment
- (B) Effective use of human effort
- (C) Evaluation of human work
- (D) All of the above

18. Work study examines

- A. method
- B. duration of work
- C. both 'a' and 'b'
- D. None of the above

19. Work study is also recognised as

- (A) Time study
- (B) Motion study
- (C) both 'a' and 'b'
- (D) None of the above

20. The correct order of procedure in method study is

- (A) Select – Record – Examine – Develop – Define – Install – Maintain
- (B) Select – Define – Examine – Develop – Record – Install – Maintain
- (C) Select – Record – Develop – Examine – Define – Install – Maintain
- (D) Select – Record – Examine – Define – Develop – Install – Maintain

21. The following factor(s) must be considered while selecting the work for method study

- (A) Economic considerations
- (B) Technical considerations
- (C) Human reactions
- (D) All of the above

22. In process charts, the symbol used for storage is

- (A) Circle
- (B) Square
- (C) Arrow
- (D) Triangle

23. In process charts, the symbol used for inspection is

- A. Circle
- B. Square
- C. Arrow
- D. Triangle

24. Delay occurs when
- A. someone stops the process
 - B. product wait for next event (operation)
 - C. both 'a' and 'b'
 - D. None of the above
25. A milk powder tin is being weighed as it is filled is an example of
- A. Operation cum transportation
 - B. Operation cum inspection
 - C. Transportation cum inspection
 - D. None of the above
26. In outline process chart, the horizontal lines represents
- A. general flow of process
 - B. materials being introduced
 - C. both 'a' and 'b'
 - D. None of the above
27. The outline (operation) process chart, the following symbols are used
- A. operation and inspection
 - B. operation and transportation
 - C. inspection and transportation
 - D. operation and storage
28. The following is (are) the type(s) of flow process chart
- i. Man type
 - ii. Material type
 - iii. Equipment type

The correct answer is

- A. only i
 - B. i & ii
 - C. ii & iii
 - D. All of the above
29. Two hand process chart is commonly used for
- A. repetitive operations
 - B. short operations
 - C. both 'a' and 'b'
 - D. none of the above
30. The following chart(s) record the movements
- A. operation process chart
 - B. flow process chart
 - C. both 'a' and 'b'
 - D. None of the above

31. Which of the following is a scale plan?
- A. String diagram
 - B. Flow process chart
 - C. Operation process chart
 - D. All of the above
32. In THERBLIGS, colour for 'search' is
- A. Black
 - B. Grey
 - C. Red
 - D. green
33. In THERBLIGS, '→' symbol is used for
- A. Search
 - B. Find
 - C. Position
 - D. Select
34. In THERBLIGS, Abbreviation used for Disassemble is
- A. D
 - B. DE
 - C. DA
 - D. DS
35. A ____ is based on film analysis
- A. SIMO chart
 - B. Flow process chart
 - C. String diagram
 - D. Operation flow chart
36. In SIMO chart, the movements are recorded against time measured in _____.
- A. Minutes
 - B. Seconds
 - C. Micro seconds
 - D. Winks
37. As per principle of motion economy
- A. Motion of arms should be symmetrical and in opposite direction
 - B. both the hand should not remain idle except during rest period
 - C. both hands should start and complete their work simultaneously
 - D. All of the above
38. The height of chair should be such that the top of work table is _____ the elbow level of the operator.
- A. at same level of
 - B. about 30 mm below
 - C. about 30 mm above
 - D. about 50 mm above

39. For ship vessel industry the following layout is best suited

- A. Process layout
- B. Product layout
- C. Fixed position layout
- D. Plant layout

40. Standing orders which are statutory are applicable to

- A. All industries
- B. All process industries and thermal power plants
- C. Only major industries
- D. All industries employing more than 100 workers

41. Refinement over the two handed process chart is

- A. SIMO chart
- B. Flow process chart
- C. String diagram
- D. Operation flow chart

42. Process layout is employed

- A. Where low volume of production is required
- B. Where similar jobs are manufactured on similar machines
- C. Where machines are arranged on functional basis
- D. All of the above.

43. According to _____, standard costing is, “the preparation and use of standard costs, their comparison with actual cost and the analysis of variances to their causes and points of incidence.”

- A. James
- B. ICWA London
- C. ICWAI
- D. Batty

44. Standard costing makes the work of valuation of inventory easier, because inventory is valued at...

- A. Original cost
- B. Predetermined price
- C. Market price
- D. Average price

45. Standard costing technique is not ideal for small concerns because it is.....

- A. Too technical
- B. An expenditure technique
- C. Complicated
- D. None of these

46. The standard costing technique is unsuitable for...

- A. Trading business
- B. Manufacturing sector
- C. Job order business
- D. Wholesaler

47. Revision of standards cannot be eliminated because of...

- A. Change in government policy
- B. Change in business condition
- C. Change in management
- D. Change in business

48. Estimated costs _____ the purpose of cost control.

- A. Serve
- B. Sometimes serve
- C. Do not serve
- D. None of these

49. According to _____ standard cost is "a predetermined cost which is calculated from management's standards of efficient operation and the relevant necessary expenditure."

- A. James
- B. ICWA London
- C. ICWAI
- D. Batty

50. Standard costs are determined on...

- A. Zero base
- B. The basis of trade cycle
- C. Scientific basis
- D. None of these

51. Cost estimates are made on the basis of...

- A. Past experience
- B. Future anticipation
- C. Both
- D. Intention

52. In _____ targets are predetermined and actual performances is compared with targets.

- A. Budgetary control
- B. Both Budgetary control and standard costing
- C. Standard costing
- D. Marginal costing

53. The basis for budgets and standards is (are)...

- A. Past records
- B. Technical information
- C. Both
- D. None of these

54. The variance analysis is used in...

- A. Marginal costing
- B. Budgetary control
- C. Standard costing
- D. Ratio analysis

55. The other name for ideal standard is...

- A. Theoretical standard
- B. Expected standard
- C. Normal standard
- D. Basic standard

56. In ideal standard, there is a room for...

- A. Wastage
- B. Idle time
- C. Some inefficiency
- D. None of these

57. Which of the following standard is unaltered over a period of time?

- A. Basic standard
- B. Expected standard
- C. Normal standard
- D. None of these

58.Which standard is ideal for fixed expenses?

- A. Basic standard
- B. Ideal standard
- C. Normal standard
- D. Expected standard

59.The standards should be set for...

- A. Direct material
- B. Direct labor
- C. Overheads
- D. All of the above

60.Who will be the coordinator for standards committee?

- A. Chief engineer
- B. General manager
- C. Cost accountant
- D. Finance controller

61.The standard cost card shows the details of...

- A. Materials
- B. Labor
- C. Production process
- D. All of the above

62.Standard costing is helping the management in...

- A. Increasing the overall efficiency
- B. Cost reduction
- C. Increasing production efficiency
- D. None of these

63.Time and motion study is widely adopted in setting _____ standard.

- A. Material cost
- B. Material price
- C. Labor cost
- D. All of these

64. Standard for various overhead is based on...

- A. The past performance
- B. Budget output
- C. Forecast
- D. All of the above

65. Standard costs are...

- A. Continuous cost
- B. Normal cost
- C. Past cost
- D. Reasonably attainable cost

66. Which one is ideal for cost control purpose?

- A. Normal cost
- B. Standard cost
- C. Average cost
- D. Continuous costing

67. For which of the following distributions mean and variance are equal?

- A. Normal Distribution
- B. Poisson Distribution
- C. Binomial Distribution
- D. Negative Binomial Distribution

68. Sampling error can be reduced by

- A. Non-probability sampling
- B. Increasing the population size
- C. Decreasing the sample size
- D. Increasing the sample size

69. Neymann Pearson lemma provides always

- A. an unbiased test
- B. a most powerful test
- C. an admissible test
- D. a minimax test

70. If there is linear trend present in the population, then which of the following methods is the most efficient sampling technique?

- A. Cluster sampling
- B. Systematic sampling
- C. Stratified sampling
- D. Simple random sampling

71. When the population consists of heterogeneity, which sampling procedure is preferred?

- A. Stratified Random Sampling
- B. Simple Random Sampling
- C. Systematic Sampling
- D. Double Sampling

72. Which of the following sampling technique is preferred when population units are numbered and arranged in order?

- A. Simple Random Sampling
- B. Stratified Sampling
- C. Systematic Sampling
- D. Sequential Sampling

73. Which of the following is not a basic principle of experimental design?

- A. Randomization
- B. Confounding
- C. Local control
- D. Replication

74. The Wishart distribution is a multivariate generalization of

- A. Normal distribution
- B. t-distribution
- C. Chi-square distribution
- D. F-distribution

75. The range of a regression coefficient is

- A. $-\infty$ to $+\infty$
- B. 0 to + 1

C. -1 to $+1$

D. 0 to $+\infty$

76. The regression coefficient is independent of the change of

A. Scale only

B. Origin only

C. Both scale and origin

D. Neither scale nor origin

77. The distribution of Hotelling's T-square is :

A. Chi-square

B. Normal

C. F

D. Student's t

78. The distribution of test statistic used in sign test is

A. Normal

B. Poisson

C. Gamma

D. Binomial

79. The distribution of test statistic used in median test is

A. Binomial

B. Normal

C. t – test

D. Chi – square

80. The non-parametric equivalent of one way analysis of variance is :

A. Friedman test

B. Kruskal Wallis test

C. Cochran test

D. Chi-square test

81. Managers can use work standards in which of the following ways?

A. Capacity planning

B. Motivating workers

C. Scheduling

D. All of the above

82. Formal methods of work measurement exclude which of the following?
- A. Systems approach
 - B. Time study method
 - C. Work sampling method
 - D. Predetermined data approach
83. Which of the following are reasons why an allowance should be added to determine the standard time?
- A. Rest period
 - B. Fatigue
 - C. Unavoidable delay
 - D. All of the above
84. The work measurement method that is most often used for setting time standards for a job is
- A. The predetermined data approach
 - B. The work sampling method
 - C. The time study method
 - D. The elemental standard data approach
85. The work measurement method that eliminates the need for time studies is:
- A. The elemental standard data approach
 - B. The work sampling method
 - C. The time study method
 - D. The predetermined data approach
86. Disadvantages of the predetermined data approach include:
- A. The reduction of the need for performance ratings
 - B. The need to break work into micro motions
 - C. The ability to set standards for new jobs before production begins
 - D. The reduction of the sources of error inherent in time studies
87. The work measurement method that is not usually used for setting standards for repetitive, well-defined jobs is:
- A. The work sampling method
 - B. The predetermined data approach
 - C. The elemental standard data approach
 - D. The time study method
88. In acceptance sampling, when there is a finite probability that the lot may be accepted even if the quality is not really good, is called
- A. Consumer's risk
 - B. Producer's risk
 - C. Operator's risk
 - D. Owner's risk
89. In acceptance sampling, when there is a finite probability that the lot may be rejected even if the quality is actually good, is called
- A. Consumer's risk
 - B. Producer's risk
 - C. Operator's risk
 - D. Owner's risk

90. In double sampling plan, if the numbers of defects is in between the two cut off numbers C1 and C2 then
- A. Accept the lot
 - B. Reject the lot
 - C. Take another sample
 - D. None of these
91. In sequential sampling plan
- A. Maximum 02 samples are taken
 - B. Maximum 03 samples are taken
 - C. Maximum 04 samples are taken
 - D. Samples are accumulated at each stage till the decision of accepting or rejecting a lot is taken
92. Which of the following includes in cost of quality?
- A. Cost of appraisal
 - B. Cost of prevention
 - C. Cost of failure
 - D. All of the above
93. Costs of appraisal includes
- A. Monitoring and control
 - B. Quality planning
 - C. Rejection and rework
 - D. All of the above
94. Costs of failure includes
- A. Monitoring and control
 - B. Quality planning
 - C. Rejection and rework
 - D. All of the above
95. Which of the following is not a sampling plan?
- A. Single sampling plan
 - B. Double sampling plan
 - C. Triple sampling plan
 - D. Sequential sampling plan
96. Formal methods of work measurement exclude the following method.
- A. Time study method
 - B. Management estimates
 - C. Predetermined data approach
 - D. Work sampling method
97. When implementing the time study method, all observed times for the processing of a work element are averaged to create the select time except:
- A. the smallest value.
 - B. the largest value.
 - C. an irregular occurrence.
 - D. the first value.
98. The work measurement method that is most often used for setting time standards for a job is:
- A. the elemental standard data approach.
 - B. the work sampling method.
 - C. the time study method.
 - D. the predetermined data approach.

99. All of the following statements are true of time study EXCEPT:
- A. Time study offers the ability to set standards for new jobs before production begins.
 - B. Time study is not appropriate for no routine jobs.
 - C. Time study is appropriate only when the person conducting the time study is experienced in selecting work elements.
 - D. Time study can provide a satisfactory tool for setting equitable time standards.
100. The work measurement method that is NOT usually used for setting standards for repetitive, well-defined jobs is:
- A. the elemental standard data approach.
 - B. the work sampling method.
 - C. the time study method.
 - D. the predetermined data approach.
101. Under which circumstance would the predetermined data approach be at a disadvantage to other methods of work measurement?
- A. Actual production has yet to begin.
 - B. New work methods must be directly compared before production has begun.
 - C. The greatest degree of consistency is necessary for the time standards.
 - D. The time standards are needed for work with a low repeatability.
102. Job enrichment
- A. Includes a modest increase in pay.
 - B. Includes some of the planning and control necessary for job accomplishment.
 - C. Is a concept promoted by Adam Smith and Charles Babbage in books they wrote.
 - D. Includes job enlargement.
103. The difference between job enrichment and job enlargement is that
- A. Enriched jobs contain a larger number of similar tasks, while enlarged jobs include some of the planning and control necessary for job accomplishment.
 - B. These terms mean the same thing.
 - C. Enlarged jobs contain a larger number of similar tasks, while enriched jobs include some of the planning and control necessary for job accomplishment.
 - D. Enriched jobs enable an employee to do a number of boring jobs instead of just one.
104. Ergonomics is the study of
- A. The use of automation in a manufacturing organization.
 - B. Work.
 - C. The management of technology.
 - D. Ergos.
105. Methods analysis focuses on
- A. The design of the machines used to perform a task.
 - B. Reducing the number of steps required to perform a task.
 - C. The raw materials that are consumed in performing a task.
 - D. How a task is accomplished.

106. A pay system that rewards employees for developing knowledge or skill is a(n)
- A. Measured daywork system.
 - B. Profit sharing system.
 - C. Knowledge-based system.
 - D. Piece-rate system.
107. Labor standards are necessary to determine which of the following?
- A. The machines required by the process.
 - B. The amount of raw materials to be consumed in the process.
 - C. The steps necessary to perform a task.
 - D. Cost and time estimates prior to production.
108. Which of the following DOES NOT relate to work scheduling?
- A. part-time status
 - B. flextime
 - C. ergonomics
 - D. flexible workweek
109. Which of the following is NOT a limitation of job expansion?
- A. smaller labor pool
 - B. individual differences
 - C. higher capital costs
 - D. lower wage rates
110. A flow diagram is
- A. a way of improving utilization of an operator and a machine.
 - B. a chart depicting right- and left-hand motions.
 - C. used to examine the ergonomics of a job.
 - D. used to analyze the movement of people or materials.
111. The phenomenon of both management and employees striving to meet common objectives is called
- A. mutual commitment.
 - B. mutual trust.
 - C. labor planning.
 - D. unconstrained strategy.
112. One drawback for an employment policy that follows demand exactly is
- A. increased training costs.
 - B. a direct linkage between labor cost and production level.
 - C. inability to meet customer demand.
 - D. it does not fully utilize labor.
113. The housekeeping tools called shadow boards and footprinting
- A. are signals that indicate a problem.
 - B. allow for proper identification of parts and tools.
 - C. are painted symbols that indicate the place for tools and the position of machinery and equipment.
 - D. show performance versus standards.

114. Methods analysis focuses on
- A. quality of output.
 - B. noise, illumination, and temperature of the workplace.
 - C. quantity of output.
 - D. how a task is accomplished.
115. An employee that works in a knowledge-based pay system that knows basic operating instructions for a wide variety of tasks would be rewarded based on
- A. depth of skill.
 - B. vertical skill.
 - C. horizontal skill.
 - D. gain skill.
116. The core job characteristic that allows the worker to perceive the job as a whole and recognize a start and a finish is
- A. job identity.
 - B. skill variety.
 - C. job significance.
 - D. autonomy.
117. Labor standards help a firm determine all but
- A. crew size and work balance.
 - B. product design.
 - C. expected production.
 - D. staffing needs.
118. Personal time allowances are typically in the range of _____ of total time.
- A. 4% - 7%
 - B. 1% - 3%
 - C. 20% - 25%
 - D. 10% - 15%
119. Which of the following is NOT a method of determining time standards?
- A. predetermined time standards
 - B. time study
 - C. flow diagrams
 - D. historical experience
120. Normal time is
- A. the observed time adjusted for pace.
 - B. the arithmetic mean of the times for each element measured, adjusted for unusual influence for each element.
 - C. the time after adjusting for allowances for personal needs, unavoidable delays, and fatigue.
 - D. the time that workers never exceed when performing the task.
121. Special purpose material handling equipments are used in
- A. Process layout
 - B. Line layout
 - C. both 'a' and 'b'
 - D. None of the above

122. The following is supported from the ceilings
- A. Roller conveyer
 - B. Belt conveyer
 - C. Chain conveyer
 - D. All of the above
123. The following is used to transport materials having flat bottoms
- A. Belt conveyer
 - B. Roller conveyer
 - C. Chain conveyer
 - D. None of the above
124. Over bridge crane has
- A. transverse movement
 - B. longitudinal movement
 - C. both 'a' and 'b'
 - D. None of the above
125. Wheel barrows is used for
- A. lifting and lowering
 - B. vertical transportation
 - C. both 'a' and 'b'
 - D. none of the above
126. Fork lift truck is used for
- A. lifting and lowering
 - B. vertical transportation
 - C. both 'a' and 'b'
 - D. none of the above
127. Principle of 'Unit load' states that
- A. materials should be moved in lots
 - B. one unit should be moved at a time
 - C. both 'a' and 'b'
 - D. none of the above
128. Economy in material handling can be achieved by
- A. employing gravity feed movements
 - B. minimizing distance of travel
 - C. by carrying material to destination without using manual labour
 - D. all of the above
129. Which of the following explain the need for facility location selection?
- A. When the existing business unit has outgrown its original facilities and expansion is not possible.
 - B. When a business is newly started.
 - C. When the lease expires and the landlord does not renew the lease.
 - D. All of these.
130. Which of the following is the first step in making a correct location choice?
- A. Develop location alternatives
 - B. Decide the criteria for evaluating location alternatives
 - C. Evaluate the alternatives
 - D. Make a decision and select the location

131. Which of the following technique emphasizes transportation cost in the determination of facility location?

- A. Location rating factor technique
- B. Transportation technique
- C. Centre-of-gravity technique
- D. Both (B. and (C..

132. Transportation cost mainly depends on which of the following factors?

- A. Distance
- B. Weight of merchandise
- C. Time required for transportation
- D. All of the above

133. In which of the following site selection techniques, a weightage between '0' to '1' is provided to factors that influence its location decision?

- A. Location rating factor technique
- B. Transportation technique
- C. Centre-of-gravity technique
- D. None of these

134. Which of the following does not cause to production delay?

- A. Shortage of space
- B. Long distance movement of materials
- C. Spoiled work
- D. Minimum material handling

135. Process layout is also known as _____.

- A. Functional layout
- B. Batch production layout
- C. Straight line layout
- D. Both (A) and (B).

136. Which of the following facility layout is best suited for the intermittent type of production, which is a method of manufacturing several different products using the same production line?

- A. Product layout
- B. Process layout
- C. Fixed position layout
- D. Cellular manufacturing layout

137. In which of the following layout type, materials are fed into the first machine and finished products come out of the last machine?

- A. Product layout
- B. Process layout
- C. Fixed position layout
- D. Cellular manufacturing layout

138. Which of the following is not an advantage of using product layout?

- A. Minimum material handling cost
- B. Minimum inspection requirement
- C. Specialised supervision requirement
- D. None of these

139. _____ is the scientific technique for planning the ordering and usage of materials at various levels of production and for monitoring the stocks during these transaction.

- A. MPS
- B. MRP
- C. BOM
- D. CRM

140. The first activity of purchasing cycle is

- A. Communicating requirement to the purchase
- B. Source Selection and Development
- C. Recognizing the need for procurement
- D. Inspection of Goods

141. Procuring an item in staggering deliveries according to the delivery schedule finished to the supplier by the buyer is

- A. Seasonal Buying
- B. Hand to Mouth Buying
- C. Scheduled Buying
- D. Tender Buying

142. Positive slack on a PERT indicates that project is

- A. ahead of schedule
- B. beyond schedule
- C. as per schedule
- D. on critical path

143. Pessimistic time is

- A. the maximum time which an activity might require
- B. the average time required for a job
- C. the most probable time considering all conditions
- D. the minimum time in which an activity can possibly be accomplished

144. . In PERT analysis, critical path is obtained by joining events having

- A. +ve slack
- B. -ve slack
- C. zero slack
- D. critical activities

145. Routing assists engineers in deciding in advance

- A. the flow of material in the plant
- B. the methods of proper utilization of manpower
- C. the methods of proper utilization of machines
- D. normal route of workers through the plant.

146. Bar charts are suitable for

- A. minor works
- B. major works
- C. large projects
- D. all of the above
- E. none of the above.

147. The first method invented for planning projects was

- A. bar chart method
- B. milestone chart
- C. critical path method (CPM)
- D. programme evaluation and review technique (PERT)

148. In perpetual inventory control, the material is checked as it reaches its

- A. minimum value
- B. maximum value
- C. average value
- D. alarming value.

149. Monte Carlo solutions in queuing theory are extremely useful in queuing problems

- A. that can't be analysed mathematically
- B. involving multistage queuing
- C. to verify mathematical results
- D. all of the above

150. A big advantage of PERT over Gantt charts is that in the former case

- A. activities and events are clearly shown
- B. early start and late finish of an activity are clearly marked
- C. activity times are clear
- D. inter-relationship among activities is clearly shown.

151. The EHS Model based on PDCA Cycle starts from:

- A. Planning
- B. Policy
- C. Procurement
- D. Processing

152 Elements of TQM includes

- A. Continuous improvement
- B. Customer satisfaction
- C. Leadership
- D. All the above

153. In Total Productive Maintenance, Unplanned downtime Losses include;

- A. Equipment Breakdown
- B. Shift Changes
- C. Unplanned maintenance
- D. Both (A) and (C).

154. Equipment failure is

- A. Availability loss
- B. Performance loss
- C. Quality loss
- D. OEE

155. If there is a 50 percent chance of making Rs 120,000 and a 70 percent chance of losing Rs 150,000, then the expected monetary outcome in Rupees is:

- A. 50,000
- B. -45,000
- C. 90,000
- D. -90,000

156. If an activity on the critical path takes longer than anticipated, then:

- A. Activities not on the critical path have less slack
- B. Additional critical path activities will appear
- C. Activities not on the critical path have additional slack
- D. None of the above

157. Productivity increases when

- A. inputs increase while outputs remain the same
- B. inputs decrease while outputs remain the same
- C. outputs decrease while inputs remain the same
- D. inputs and outputs increase proportionately

158. Which item best describes a CAM technology?

- A. Numerical control
- B. Documentation
- C. Drafting
- D. Geometric modelling

159. CAE and CAM are linked through:

- A. A common database and communication system
- B. NC tape programming and automated design
- C. Assembly automation and tool production
- D. Parts production and testing

160. The person responsible for assigning the resources to a project is most often:

- A. The project management
- B. The Human Resources Department
- C. The line manager
- D. The executive sponsor

161. Three Dimensional representation of an object is termed as:

- A. Automated drafting
- B. Engineering analysis
- C. Geometric Modelling
- D. All of the above

162. Project monitoring is required:

- A. Before commencement of the project
- B. After completion of the project
- C. During implementation of the project
- D. At any stage of the project deemed necessary

163. Which of these is correct with respect to a product developed or a service performed?

- A. Neither bad grade nor quality is acceptable
- B. Grade and quality is the same thing.
- C. Bad quality is acceptable, but bad grade is not.
- D. Bad grade is acceptable, but bad quality is not.

164. Project feasibility report is aimed at;

- A. Informing the people
- B. Attracting the customer
- C. Justifying the investment
- D. Giving details of resources

165. Quality control is aimed at:

- A. Maintaining the desired quality
- B. Exceeding the desired quality
- C. Continuously improving the quality
- D. Following the quality

166. Present worth is:

- A. The opportunity cost at the present value
- B. The current market value of the investment
- C. The compounding present cash flows to the future
- D. The discounted future cash flows to the present

167. Which of the following is not a therblig?

- A. Use
- B. Hold
- C. Dispatch
- D. Inspection

168. Value for Value Engineering analysis purposes is defined as

- A. Purchase value
- B. Saleable value
- C. Depreciated value
- D. Function/Cost

169. Micromotion study is

- A. enlarged view of motion study
- B. analysis of only one stage of motion study
- C. time study of small components up to microseconds
- D. subdivision of an operation into therbligs and their analysis

170. Greater flexibility in plant layout is achieved in case of

- A. Process layout
- B. Product layout
- C. Combination layout
- D. Fixed position layout

171. Routing and Scheduling are integral part of

- A. Work study
- B. Job analysis
- C. Quality control
- D. Product planning

172. Break even point is least affected by

- A. Selling price
- B. Fixed cost
- C. Volume of production
- D. Product mix

173. Material Requirements Planning DOES NOT include

- A. Material price
- B. Bill of material
- C. Inventory level
- D. Production schedule

174. PERT stands for

- A. Program Estimation and Reporting Technique
- B. Process Estimation and Review Technique
- C. Program Evaluation and Review Technique
- D. Planning Estimation and Resulting Technique

175. CPM is

- A. Synthesizing in concepts
- B. Is built of activities oriented programmes
- C. Is used for repetitive works
- D. All of the above

176. Father of time study was

- A. F.W. Taylor
- B. H.L. Gantt
- C. F.B. Gilbert
- D. R.M. Barnes

177. Work study comprises following main techniques

- A. Method study and work measurement
- B. Method study and time study
- C. Time study and work measurement
- D. Method study and job evaluation

178. The performance of a specific task in CPM is known as

- A. Dummy
- B. Event
- C. Activity
- D. Contract

179. Product layout is best suited where

- A. One type of product is produced
- B. Product is standardized
- C. Product is manufactured in large quantities
- D. All of the above

180. Positive slack on a PERT indicates that project is

- A. Ahead of schedule
- B. Beyond schedule
- C. As per schedule
- D. On critical path

181. Which of the following statement is wrong?

- A. An activity consumes time and resources whereas an event does not consume time or resources
- B. The performance of a specific task is called an activity
- C. An event is an instantaneous point in time at which an activity begins or ends
- D. The turning of a job on lathe is an event whereas job turned is an activity

182. P.M.T.S. (Predetermined Motion Time Systems) include

- A. M.T.M. (Method Time Measurement)
- B. W.F.S. (Work Factor Systems)
- C. B.M.T.S. (Basic Motion Time Study)
- D. All of these

183. Travel charts provide

- A. An idea of the flow of materials at various stages
- B. A compact estimate of the handling which must be done between various work sections
- C. The information for changes required in rearranging material handling equipment
- D. An approximate estimate of the handling which must be done at a particular station

184. Which of the following organisation is preferred in automobile industry?

- A. Functional organisation
- B. Line organisation
- C. Staff organisation
- D. Line and staff organizations

185. Tick the odd man out

- A. Taylor
- B. Drucker
- C. McGregor
- D. Galileo

186. A company spends considerable amount on publicity to promote sales. This expenditure in break even chart is shown below the

- A. Fixed cost line
- B. Variable cost line
- C. Total cost line
- D. Sales revenue line

187. The mathematical technique for finding the best use of limited resources in an optimum manner is known as

- A. Operation research
- B. Linear programming
- C. Network analysis
- D. Break-even analysis

188. Product layout is used for

- A. Job production
- B. Batch production
- C. Mass production
- D. Any one of these

189. CPM is the

- A. Time oriented technique
- B. Event oriented technique
- C. Activity oriented technique
- D. Target oriented technique

190. PERT

- A. Provides an approach for keeping planning up-to-date
- B. Provides a way for management to require that planning be done on a uniform and logical basis
- C. Permits management to foresee quickly the impact of variations from the plan
- D. All of the above

191. The probability distribution of activity times in PERT follows following distribution

- A. Normal
- B. Binomial
- C. Beta
- D. Exponential

192. Pick up the correct statement. Dummy activity on a PERT/CPM chart means, it

- A. Consumes time, but no resources
- B. Consumes resources but no time
- C. Consumes neither time nor resources
- D. Is a dangling event

193. In the cost structure of a product, the selling price is determined by the factors such as

- A. Sales turn over
- B. Lowest competitive price
- C. Various elements of the cost
- D. All of the above

194. Work study is concerned with

- A. Improving present method and finding standard time
- B. Motivation of workers
- C. Improving production capability
- D. Improving production planning and control

195. Which of the following are the guidelines for the construction of a network diagram?

- A. Each activity is represented by one and only one arrow in the network
- B. Dangling must be avoided in a network diagram
- C. Dummy activity consumes no time or resource
- D. All of the above

196. ABC analysis deals with

- A. Analysis of process chart
- B. Flow of material
- C. Ordering schedule of job
- D. Controlling inventory costs money

197. Breakeven analysis is a

- A. Short term analysis
- B. Long term analysis
- C. Average of short and long term analysis
- D. Any one of these

198. The appellate authority for an industrial dispute is

- A. Management
- B. Labour court
- C. High court/supreme court
- D. Board of directors

199. Which of the following layouts is suited to job production?

- A. Process layout
- B. Product layout
- C. Fixed position layout
- D. Plant layout

200. 'Value' for value engineering and analysis purposes is defined as

- A. Purchase value
- B. Saleable value
- C. Depreciated value
- D. Function/cost

201. Replacement studies are made on the following basis

- A. Annual cost method
- B. Rate of return method
- C. Total life average method
- D. Any one of the above

202. The product layout

- A. Lowers overall manufacturing time
- B. Requires less space for placing machines
- C. Utilizes machine and labour better
- D. All of these

203. The time of completing a project in network analysis is given by following time of the critical activity meeting at the final triode

- A. Early finish
- B. Early start
- C. Late start
- D. Late finish

204. Critical path method

- A. Helps in ascertaining time schedules
- B. Makes better and detailed planning possible
- C. Provides a standard method for communicating project plans schedules and to time and cost performance
- D. All of the above

205. Critical Path Net Work helps an engineer

- A. To concentrate his attention on critical activities
- B. To divert the resources from noncritical advanced activities to critical activities
- C. To be cautious for avoiding any delay in the critical activities to avoid delay of the whole project
- D. All of the above

206. Both Rowan plan and 50-50 Halsey plan will provide the same earning when the actual time is _____ the standard time.

- A. One-fourth
- B. One-half
- C. Equal to
- D. Twice

207. In break-even analysis, total cost consists of

- A. Fixed cost
- B. Variable cost
- C. Fixed cost + variable cost
- D. Fixed cost + variable cost + overheads

208. Which one of the following techniques is used for determining allowances in time study?

- A. Acceptance sampling
- B. Linear regression
- C. Performance rating
- D. Work sampling

209. Expediting function consists in keeping a watch on

- A. Operator's activity
- B. Flow of material and in case of trouble locate source of trouble
- C. Minimizing the delays
- D. Making efficient dispatching

210. The most popular type of organisation used for Civil Engineering Constructions is

- A. Line organization
- B. Line and staff organization
- C. Functional organization
- D. Effective organization

211. Which one of the following chart gives simultaneously information about the progress of work and machine loading?

- A. Process chart
- B. Machine load chart
- C. Man-machine chart
- D. Gantt chart

212. Merit Rating is the method of determining worth of

- A. A job
- B. An individual employee
- C. A particular division in workshop
- D. Machine

213. Routing is essential in the following type of industry

- A. Assembly industry
- B. Process industry
- C. Job order industry
- D. Mass production industry

214. The time required to complete a task is established and a bonus is paid to the worker for every hour he saves from the established time required. This type of incentive plan is known as

- A. Rowan Plan
- B. Taylor Differential Piece rate system
- C. Halsey Premium plan
- D. Day work plan

215. Which of the following wage incentive plan guarantees minimum wage to a worker and bonus is paid for the fixed percentage of time saved?

- A. Halsey plan
- B. Gantt plan
- C. Rowan plan
- D. Emerson's efficiency plan

216. Bin card is used in

- A. Administrative wing
- B. Workshop
- C. Foundry shop
- D. Stores

217. The production scheduling is simpler and high volume of output and high labour efficiency are achieved in the case of

- A. Product layout
- B. Process layout
- C. Fixed position layout
- D. A combination of line and process layout

218. The disadvantage of product layout is

- A. High initial investment for the specialized facilities
- B. Skilled labour to operate machines
- C. Production time is longer, requiring more goods in inventory
- D. High cost of inspection

219. If 'F' is the fixed cost, 'V' is the variable cost per unit (or total variable costs) and 'P' is the selling price of each unit (or total sales value), then break-even point is equal to

- A. $(F \times V)/P$
- B. $(F \times P)/V$
- C. $F/[1 + (V/P)]$
- D. $F/[1 - (V/P)]$

220. The critical path of a network represents
- A. The minimum time required for completion of project
 - B. The maximum time required for completion of project
 - C. Maximum cost required for completion of project
 - D. Minimum cost required for completion of project
221. The break-even point represents
- A. The most economical level of operation of any industry
 - B. The time when unit can run without i loss and profit
 - C. Time when industry will undergo loss
 - D. The time when company can make maximum profits
222. One of the basic essentials of an incentive plan is that
- A. A differential piece rate system should exist
 - B. Minimum wages should be guaranteed
 - C. Provide incentive to group efficiency performance
 - D. All standards should be based on time studies
223. Inventory control in production, planning and control aims at
- A. Achieving optimization
 - B. Ensuring against market fluctuations
 - C. Acceptable customer service at low capital investment in inventory
 - D. Discounts allowed in bulk purchase
224. The allowed time for a job equals standard time plus
- A. Policy allowance
 - B. Interference allowance
 - C. Process allowance
 - D. Learning allowance
225. Value engineering aims at finding out the
- A. Depreciation value of a product
 - B. Resale value of a product
 - C. Major function of the item and accomplishing the same at least cost without change in quality
 - D. Break-even point when machine requires change
226. A-B-C analysis
- A. Is a basic technique of materials management
 - B. Is meant for relative inventory control
 - C. Does not depend upon the unit cost of the item but on its annual consumption
 - D. All of the above
227. Break-even analysis can be used for
- A. Short run analysis
 - B. Long run analysis
 - C. Average of above two run analysis
 - D. There is no such criterion

228. A big advantage of PERT over Gantt charts is that in the former case

- A. Activities and events are clearly shown
- B. Early start and late finish of an activity are clearly marked
- C. Activity times are clear
- D. Interrelationship among activities is clearly shown

229. In manufacturing management, the term 'Dispatching' is used to describe

- A. Dispatch of sales order
- B. Dispatch of factory mail
- C. Dispatch of finished product of the user
- D. Dispatch of work orders through shop floor

230. PERT analysis is based on

- A. Optimistic time
- B. Pessimistic time
- C. Most likely time
- D. All of the above

231. Actual performance of a task is called

- A. An event
- B. An activity
- C. A duration
- D. None of these

232. Gantt charts are used for

- A. Forecasting sales
- B. Production schedule
- C. Scheduling and routing
- D. Linear programming

233. Work sampling is applied for

- A. Estimation of the percentage utilization of machine tools
- B. Estimating the percentage of the time consumed by various job activities
- C. Finding out time standards, specially where the job is not repetitive and where time study by stop watch method is not possible
- D. All of the above

234. Basic tool in work study is

- A. Graph paper
- B. Process chart
- C. Planning chart
- D. Stop watch

235. The unit cost in case of batch production is _____ as compared to jobbing production.

- A. Same
- B. Low
- C. High
- D. None of these

236. For a product layout the material handling equipment must

- A. Have full flexibility
- B. Employ conveyor belts, trucks, tractors etc.
- C. Be a general purpose type
- D. Be designed as special purpose for a particular application

237. Which of the following is independent of sales forecast?

- A. Productivity
- B. Inventory control
- C. Production planning
- D. Production control

238. Which of the following layouts is suited for mass production?

- A. Process layout
- B. Product layout
- C. Fixed position layout
- D. Plant layout

239. At the break-even point,

- A. Total cost is more than the sales revenue
- B. Total cost is less than the sales revenue
- C. Total cost is equal to sales revenue
- D. Fixed cost is equal to variable cost

240. The reasons which are basically responsible for the formation of a queue should be that

- A. The average service rate less than the average arrival rate
- B. Output rate is linearly proportional to input
- C. Output rate is constant and the input varies in a random manner
- D. All of the above

241. The production cost per unit can be reduced by

- A. Producing more with increased inputs
- B. Producing more with the same inputs
- C. Eliminating idle time
- D. Minimizing resource waste

242. The artificial activity, which indicates that an activity following it cannot be started unless, the preceding activity is complete, is known as

- A. Event
- B. Free float
- C. Artificial
- D. Dummy

243. Pick up the incorrect statement from the following. A critical ratio scheduling

- A. Establishes the relative priorities among various activities on a common basis
- B. Determines the status of each activity
- C. Adjusts automatically changes in activity progress
- D. None of the above

244. An event is indicated on the network by

- A. A straight line
- B. A number enclosed in a circle or a square
- C. A straight line with circles at the ends
- D. A dotted line

245. Standing orders which are statutory are applicable to
- A. All industries
 - B. All process industries and thermal power plants
 - C. Only major industries
 - D. All industries employing more than 100 workers
246. For ship vessel industry the following layout is best suited
- A. Process layout
 - B. Product layout
 - C. Fixed position layout
 - D. Plant layout
247. For handling materials during manufacture of cement, a _____ is widely used.
- A. Belt conveyor
 - B. Bucket conveyor
 - C. Fork lift truck
 - D. Overhead crane
248. Process layout is employed
- A. Where low volume of production is required
 - B. Where similar jobs are manufactured on similar machines
 - C. Where machines are arranged on functional basis
 - D. All of the above
249. Which of the following incentive plans ensures a part of the swing to the worker and rest to the employer?
- A. Emerson efficiency plan
 - B. Taylor plan
 - C. Halsey premium plan
 - D. Gilbert plan
250. The basic difference between PERT and CPM is that
- A. PERT deals with events and CPM with activities
 - B. Critical path is determined in PERT only
 - C. Costs are considered on CPM only and not in PERT
 - D. GuesSED times are used in PERT and evaluated times in CPM
251. The type of organisation preferred for a steel industry, is
- A. Line organisation
 - B. Functional organisation
 - C. Line and staff organisation
 - D. Line, staff and functional organisation
252. In which of the following layouts, the lines need to be balanced
- A. Process layout
 - B. Product layout
 - C. Fixed position layout
 - D. Plant layout
253. The aim of value engineering is to
- A. Find the depreciation value of a machine
 - B. Determine the selling price of a product
 - C. Minimize the cost without change in quality of the product
 - D. All of the above

254. Which of the following layouts is suited to job production

- A. process layout
- B. product layout
- C. fixed position layout
- D. plant layout

255. Father of time study was

- A. F.W. Taylor
- B. H.L. Gantt
- C. F.B. Gilberfh
- D. R.M. Barnes
- E. H.B. Maynord.

256. Work cycle is a sequence of _____ which are required to perform a job.

- A.Parts
- B. elements
- C.Pieces
- D. Segments

257. The total time from start to finish of a time study is known as

- A. Total time
- B.Time taken
- C. Elapsed time
- D.Completed time

258. _____ is that part of attendance time when the worker has work available but for various reasons does not do it

- A. Effective time
- B. Performed time
- C. Idle time
- D. Waiting time

259. Slack is the difference between ____ and ____

- A. T_e , T_L .
- B. T_s , T_I
- C.Both (A) and (B).
- D.none of the above

260. If an employee works more than maximum number of hours fixed, he would be entitled for over time at _____the ordinary rates of wages.

- A. 1.5 Times.
- B. 2 Times
- C.2.5 Times

D. 3 Times

261. Normal time is applicable to _____ worker.

- A. Incentive worker
- B. Non incentive worker
- C. Both (A) and (B).
- D. Normal

262. When the employment is terminated, wages shall be paid before the expiry of the after termination.

- A. 1 st Day
- B. 3 rd Day
- C. 2 nd Day
- D. 4 th Day

263. PERT is _____ oriented .

- A. Event
- B. Activity
- C. Time
- D. none of the above

264. Supervisory staff comes under Category.

- A. Continuous
- B. Intensive
- C. Essentially intermittent
- D. Excluded

265. Rating is _____ judgment of the observer.

- A. Normal
- B. observed
- C. Personal
- D. Random

266. 6.4 MPH is _____ performance under the rating.

- A. Normal
- B. Below normal
- C. above normal
- D. Standard

267. Children below the age of Should not be employed in a factory or workshop.

- a) 15
- B. 14
- C. 16
- D. 18

268. Fundamental objective of work study is to optimize the use of _____

- A. Man power
- B. Material

C. Machines

D. Resources

269. Wages shall be paid on a

a) Holiday

B. Before Holiday

C. Working day

D. After holiday

270. Method study is a technique of _____

A. Cost optimization

B. Cost reduction

C. Cost control

D. Cost Effective

271. _____ was the originator of method study.

A. Gilbreth

B. W.S Tailor

C. Chris

D. Robert

272. Next step to selection in method study is ____

A. Develop

B. Critical Examination

C. Record

D. Maintain

273. Statutory hours for intensive category are hours per week.

A.54

B. 48

C.42

D.45

274. ASME stands for

A. American society for mechanical engineers.

B. Australian Society for mechanical engineers

C. American society for merchant engineers

D. American Society for marine engineers

275. Statutory hours for essential intermittent category are hours per week.

A.72

B. 75

C.66

D.60

276. In Man type flow process chart _____ symbol not used.

- A. Operation
- B. storage
- C. Inspection
- D. Delay

277. Rest hours of an employee under intensive category are hours per week.

- A. 26
- B.24
- C.30
- D.28

278. The maximum number of hours an adult workers should work in a week is

- A.42
- B. 48
- C.44
- D.36

279. TTE, Guards comes under category

- A.Excluded
- B. Intensive
- C.Essentially Intermittent
- D.Continuous

280.Installation of work study Takes place in _____ stages

- A. 2
- B. 3
- C. 4
- D. 5

281.Rehearsal is normally carried out During _____ Working hours

- A. Beyond Normal
- B. normal
- C. Special
- D. Dedicated

282.Work study report is made in _____parts

- A. Five
- B. Six
- C. Seven
- D. Three

283. By what time wages are to be paid in case of 1000 or more are employed?

- A. 10th day
- B. 7th day
- C. 5th day
- D. 11th day

284. Two handed process chart is made up of _____

- A. One column
- B. Four column
- C. Two columns
- D. Six column

285. Critical path is the _____ path

- A. Shortest
- B. Smallest
- C. Very smallest
- D. Longest

286. A timing device used in micro motion study _____

- A. Stop watch
- B. Wink Counter
- C. Motion watch
- D. Micro motion watch

287. The first factor to be considered for selection of a job, _____

- A. Technical
- B. Economical factor
- C. Human Reaction
- D. None of the above

288. Operation process chart records activities such as _____

- A. Operations & Inspections
- B. Operations & Movements
- C. Operations & Storage
- D. Operations & Delays

289. What is the official language of the India?

- A. Telugu
- B. Hindi
- C. Hindi in Devanagari Script
- D. Marathi

290. In which article of the constitution of India Hindi has been declared as Official Language?

- A. Article 120
- B. Article 210
- C. Article 343
- D. 3Article 351

291. As per the provisions of the Constitution of India Official Language Hindi shall be written in which script?

- A. Brahmi Script

- B. Sanskrit Script
- C. Roman Script
- D. Devnagari Script

292. Which forms of the numerals should be used in official purposes of the Union of India?

- A. International form of Indian Numerals
- B. Devnagari numerals
- C. Roman numerals
- D. None of the above

293 Hindi Day is celebrated in India on every year.

- A. 10th January
- B. 26th January
- C. 15th August
- D. 14th September

294 Why Hindi Day is celebrated in India on 14th September?

- A. Constituent Assembly of India had adopted Hindi as Official Language of India on that day.
- B. Ministry of Home Affairs, Department of Official Language had ordered to do so.
- C. Railway Board had ordered to do so
- D. None of the above

295 In which article of the Constitution of India envisages setting up of Official Language Commissions?

- A. Article 343
- B. Article 344
- C. Article 345
- D. Article 346

296 Which article of the Constitution of India empowers the Indian states to choose their own Official Language?

- A. Article 343
- B. Article 351
- C. Article 210
- D. Article 345

297 If a state does not choose Official Language for itself from the languages spoken in the state what language will be its Official Language?

- A. All the languages spoken in the state
- B. Hindi Language
- C. English Language
- D. None of the above

298 The authoritative texts of all Bills to be introduced or amendments thereto to be moved in either House of Parliament or in the House or either House of the Legislature of a State shall be in which language?

- A. In Hindi
- B. In English
- C. In any of the Languages mentioned in 8th Schedule of the Constitution of India
- D. None of the above

299. As per the prevailing provisions of the Constitution of India all proceedings in the Supreme Court and in every High Court shall be in..... language.

- A. In Hindi
- B. In English
- C. In any of the Languages mentioned in 8th Schedule of the Constitution of India
- D. None of the above

300. In which article of the constitution of India the duty to promote the spread of the Hindi language assigned to the Union of India?

- A. Article 120
- B. Article 210
- C. Article 343
- D. Article 351

KEY TO THE OBJECTIVE QUESTION BANK FOR THE POST OF SR.LECTURER (WORK STUDY)

S.No	KEY	S.No	KEY	S.No	KEY	S.No	KEY	S.No	KEY	S.No	KEY
1	D	51	C	101	D	151	A	201	D	251	D
2	D	52	C	102	B	152	D	202	D	252	B
3	A	53	C	103	C	153	D	203	A	253	C
4	C	54	C	104	B	154	A	204	D	254	A
5	B	55	A	105	D	155	B	205	D	255	A
6	C	56	D	106	C	156	C	206	B	256	B
7	A	57	B	107	D	157	B	207	C	257	C
8	C	58	A	108	C	158	A	208	D	258	C
9	B	59	D	109	D	159	B	209	B	259	A
10	C	60	C	110	D	160	C	210	A	260	D
11	A	61	D	111	A	161	C	211	C	261	D
12	D	62	B	112	A	162	C	212	B	262	C
13	A	63	C	113	C	163	D	213	A	263	A
14	B	64	D	114	D	164	C	214	C	264	D
15	D	65	B	115	C	165	A	215	A	265	C
16	D	66	B	116	A	166	D	216	D	266	D
17	D	67	B	117	B	167	A	217	A	267	A
18	C	68	D	118	A	168	D	218	A	268	D
19	C	69	B	119	C	169	D	219	D	269	C
20	A	70	B	120	A	170	A	220	A	270	B
21	D	71	A	121	B	171	D	221	C	271	A
22	D	72	C	122	C	172	D	222	D	272	C
23	B	73	B	123	B	173	A	223	C	273	D
24	C	74	C	124	C	174	C	224	A	274	A
25	B	75	C	125	A	175	D	225	C	275	B
26	B	76	B	126	C	176	A	226	D	276	B
27	A	77	C	127	A	177	A	227	A	277	C
28	D	78	D	128	D	178	C	228	D	278	B
29	C	79	D	129	D	179	D	229	D	279	D
30	B	80	B	130	B	180	A	230	D	280	A
31	A	81	D	131	C	181	D	231	B	281	B
32	A	82	A	132	D	182	D	232	B	282	D
33	D	83	D	133	A	183	B	233	D	283	A
34	C	84	C	134	D	184	D	234	D	284	C
35	A	85	D	135	D	185	D	235	B	285	D
36	D	86	B	136	B	186	B	236	D	286	B
37	D	87	A	137	A	187	B	237	A	287	B
38	D	88	A	138	C	188	C	238	B	288	A
39	C	89	B	139	B	189	C	239	C	289	C
40	D	90	C	140	C	190	D	240	D	290	B
41	A	91	D	141	C	191	C	241	B	291	D
42	D	92	D	142	A	192	C	242	D	292	A
43	A	93	A	143	A	193	D	243	D	293	C
44	B	94	C	144	C	194	A	244	B	294	B
45	B	95	B	145	C	195	D	245	B	295	D
46	C	96	B	146	A	196	D	246	C	296	A
47	B	97	C	147	A	197	A	247	B	297	C
48	C	98	C	148	A	198	C	248	D	298	B
49	B	99	A	149	A	199	A	249	C	299	A
50	A	100	B	150	D	200	D	250	D	300	D

