5. Objectives of work measurement 1 point

Mark only one oval.

- ◯ Comparing alternative methods.
- ◯ Assessing the correct initial manning (manpower requirement planning).
- ◯ Planning and control.
- ◯ Realistic costing.
- ◯ none of the above
- ◯ all

6. Objectives of work measurement 1 point

Mark only one oval.

- ◯ Financial incentive schemes.
- ◯ Delivery date of goods
- ◯ Cost reduction and cost control.
- ◯ Identifying substandard workers.
- ◯ none of the above
- ◯ all

7. Techniques of Work Measurement includes 1 point

Mark only one oval.

- ◯ Time study(stop watch technique)
- ◯ Synthetic data (synthesis)
- ◯ Predetermined motion time study (PMTS)
- ◯ Analytical estimating and work sampling
- ◯ none of the above
- ◯ all

8. A work measurement technique for recording the times and rates of working for the elements of a specified job carried out under specified conditions and for analyzing the data so as to determine the time necessary for carrying out the job at the defined level of performance. 1 point

Mark only one oval.

- ◯ Time study(stop watch technique)
- ◯ Synthetic data (synthesis)
- ◯ Predetermined motion time study (PMTS)
- ◯ Analytical estimating and work sampling
- ◯ none of the above
- ◯ all

9. A work measurement technique for building up the time for a job or parts of the job at a defined level of performance by totaling element times obtained previously from time studies on other jobs containing the elements concerned or from synthetic data. 1 point

Mark only one oval.

- ◯ Time study(stop watch technique)
- ◯ Synthetic data (synthesis)
- ◯ Predetermined motion time study (PMTS)
- ◯ Analytical estimating and work sampling
- ◯ none of the above
- ◯ all

10. A technique in which a large number of observations are made over a period of time of one or group of machines, processes or workers. Each observation records what is happening at that instant and the percentage of observations recorded for a particular activity, or delay, is a measure of the percentage of time during which that activities delay occurs. 1 point

Mark only one oval.

- Time study(stop watch technique)
- Synthetic data (synthesis)
- Predetermined motion time study (PMTS)
- Analytical estimating
- work sampling
- all

11. A work measurement technique whereby times established for basic human motions (classified according to the nature of the motion and conditions under which it is made) are used to build up the time for a job at the defined level of performance. 1 point

Mark only one oval.

- Time study(stop watch technique)
- Synthetic data (synthesis)
- Predetermined motion time study (PMTS)
- Analytical estimating
- work sampling
- all

12. A work measurement technique, being a development of estimating, whereby the time required to carry out elements of a job at a defined level of performance is estimated partly from knowledge and practical experience of the elements concerned and partly from synthetic data. 1 point

Mark only one oval.

- ◯ Time study(stop watch technique)
- ◯ Synthetic data (synthesis)
- ◯ Predetermined motion time study (PMTS)
- ◯ Analytical estimating
- ◯ work sampling
- ◯ all

13. Work measurement techniques in which past performance is used as a guideline for setting work performance standards. The main advantage of this technique is that it is simple to understand, quicker to estimate and easier to implement. 1 point

Mark only one oval.

- ◯ Time study(stop watch technique)
- ◯ Historical data
- ◯ Predetermined motion time study (PMTS)
- ◯ Analytical estimating
- ◯ work sampling
- ◯ all

14. Work measurement techniques used for short cycle repetitive jobs 1 point

Mark only one oval.

- synthetic study
- Historical data
- Predetermined motion time study (PMTS)
- Analytical estimating
- work sampling
- all

15. Work measurement techniques used for long cycle heterogeneous operations 1 point

Mark only one oval.

- synthetic study
- Historical data
- Predetermined motion time study (PMTS)
- Analytical estimating
- work sampling
- all

16. Work measurement techniques used for manual operation confined to one work center 1 point

Mark only one oval.

- synthetic study
- Historical data
- Predetermined motion time study (PMTS)
- Analytical estimating
- work sampling
- all

17. fact finding tool, to measure activities and delays while a man is working and percentage of that he is not working and to measure manual tasks that is to establish time standards for an operation. 1 point

Mark only one oval.

- work study
- work measurment
- Method study
- Motion study
- work sampling
- all

18. A technique in which a statistically competent number of instantaneous observations are taken, over a period of time, of a group of machines, processes or workers 1 point

Mark only one oval.

- work study
- work measurment
- Method study
- Motion study
- work sampling
- all

19. The formula indicates calculation of, where, K = 1, 2 or 3 for confidences level of 68%, 95% and 99.7%, respectively.N = Total o. of random observations (sample size).S = Desired level of accuracy P = Percentage occurrence of an activity or delay, expressed in decimal e.g. 15% = 0.15. 1 point

$$S \times P = K\sqrt{\frac{P(1-P)}{N}}$$

Mark only one oval.

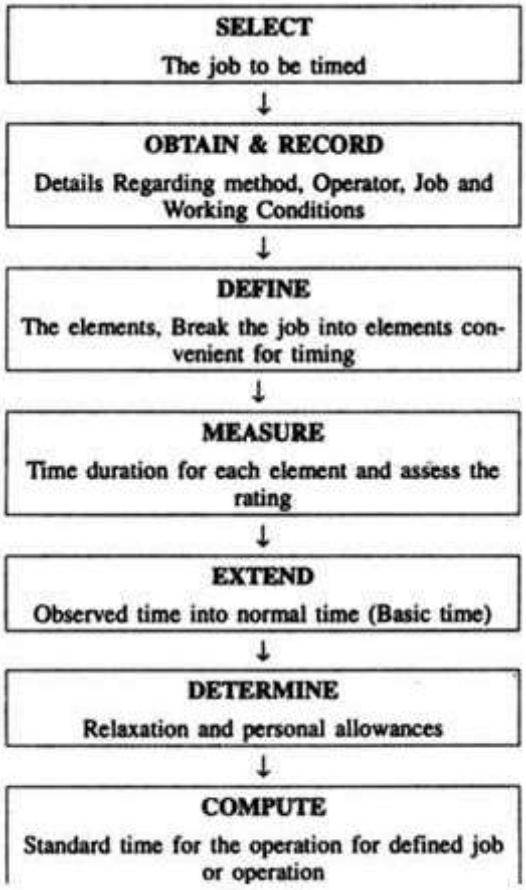
- confidence level
- standered time
- sample size
- Normal time
- none of the above
- all

20. It is a work measurement technique for recording the times and rates of working for the elements of a specified job carried out under specified conditions, and for analyzing the data so as to obtain the time necessary for carrying out the job at a defined level of performance. 1 point

Mark only one oval.

- work study
- method study
- time study
- motion study
- none of the above
- all

21. The figure indicates, 1 point



Mark only one oval.

- work study
- method study
- time study
- motion study
- none of the above
- all

22. it is the rate of output which a qualified worker will naturally achieve without over exertion as an average over the working day or shift provides they know and adhere to the specified method and provided they are motivated to apply themselves to their work. 1 point

Mark only one oval.

- Rating
- standered performance
- confidence level
- sampling
- none of the above
- all

23. It is the process of adjusting the actual pace of working of an operator by comparing it with the mental picture of pace of an operator working at normal speed. It is the percentage ratio of observed time and normal time. 1 point

Mark only one oval.

- standered performance
- performance rating
- confidence level
- sampling
- none of the above
- all

24. External Factors Affecting Rate Of Working are 1 point

Mark only one oval.

- Variation in the quality or other characteristics of the material used even though it is in prescribed tolerance limit.
- Changes in the operating efficiency of tools and equipment within their useful life.
- Unavoidable changes in methods or conditions of operations.
- Changes in working conditions like heat, light, dust etc.
- none of the above
- all

25. internal Factors Affecting Rate Of Working are 1 point

Mark only one oval.

- Acceptable variation in the quality of the product.
- Variations due to operator's ability.
- Variation due to his attitude of mind.
- Changes in the operating efficiency of tools and equipment within their useful life.
- all

26. These are methods of performance rating 1 point

Mark only one oval.

- The performance rating
- Wasting house method of rating
- Speed rating
- Objective rating:
- all

27. In this method, the operator's speed is rated against a single standard pace which is independent of job difficulty. 1 point

Mark only one oval.

- The performance rating
- Wasting house method of rating
- Speed rating
- Objective rating
- all

28. under this method is established by comparing observed time of some of the manual elements with those of known time values of the elements from predetermined motion and time studies 1 point

Mark only one oval.

- The performance rating
- Wasting house method of rating
- Speed rating
- Objective rating
- all

29. in this method Wasting house system utilizes a set of criteria to measure the performance of the operators. The factors are skill, effort, consistency, conditions. 1 point

Mark only one oval.

- The performance rating
- Wasting house method of rating
- Speed rating
- Objective rating
- all

30. In this technique the pace of the movements of the operator is the only factor considered for performance rating. it is found by the observer by comparing pace of operators working with his own concept of normal pace. 1 point

Mark only one oval.

- The performance rating
- Wasting house method of rating
- Speed rating
- Objective rating
- all

31. this allowance is a addition to the basic time intended to provide the worker with the opportunity to recover from the physiological and psychological effects of carrying out specified work under specified conditions and to allow attention to personal needs. 1 point

Mark only one oval.

- variable allowance
- relaxation allowance
- interference allowance
- contingency allowance
- policy allowance
- all

32. It is allowed to an operator who is working under poor environmental conditions that cannot be improved, added stress and strain in performing the job. 1 point

Mark only one oval.

- variable allowance
- relaxation allowance
- interference allowance
- contingency allowance
- policy allowance
- all

33. It is an allowance of time included into the work content of the job to compensate the operator for the unavoidable loss of production due to simultaneous stoppage of two or more machines being operated by him. 1 point

Mark only one oval.

- variable allowance
- relaxation allowance
- interference allowance
- contingency allowance
- policy allowance
- all

34. it is a small allowance of time which may be included in a standard time to meet legitimate and expected items of work or delays, the precise measurement of which is uneconomical because of their in frequent or irregular occurrence. 1 point

Mark only one oval.

- variable allowance
- relaxation allowance
- interference allowance
- contingency allowance
- policy allowance
- all

35. it is an increment, other than bonus increment, applied to a standard time (or to some constituent part of it, e.g., work content) to provide a satisfactory level of earnings for a specified level of performance under exceptional circumstances. 1 point

Mark only one oval.

- variable allowance
- relaxation allowance
- interference allowance
- contingency allowance
- policy allowance
- all

36. choose correct formula for standered time 1 point

Mark only one oval.

- work content + unavoidable delay
- basic time + relaxation allowance + contingency allowance
- observed time + rating factor + relaxation allowance + contingency allowance
- none of the above
- all

37. It consists of a set of time data and a systematic procedure which analyses and subdivides any manual operation of human task into motions, body motions, or other elements of human performance, and assigns to each the appropriate time value. 1 point

Mark only one oval.

- PMT Analysis
- work study
- motion study
- none of the above
- all

38. A procedure which analysis any manual operation or method into the basic motion required to perform it and assigns to each motion to predetermined time standards which is determined by the nature of the motions and the conditions under which it was made 1 point

Mark only one oval.

- PMT Analysis
- MTM analysis
- motion study
- none of the above
- all

39. A work sampling study showed that 20% of a work week of 48 hours was consumed by avoidable delays. If each time a work sampling observation was made the operator was rated and the average of such rating was 110%. If 100 units were produced by the operator in that period, calculate standard time. 2 points

Mark only one oval.

- 2.5344
- 25.344
- 32.344
- none of the above
- all

40. The elemental times in 4 cycles of an operations using a stop watch are as below, Calculate standard time for the operation if,a) Elements 2 and 4 are machine elements.b) For other elements, the operator is rated at 110%c) Total allowances are 15% of the normal time. 2 points

Elements	Cycles time in minutes			
	1	2	3	4
1	1.5	1.5	1.3	1.4
2	2.6	2.7	2.4	2.6
3	3.3	3.2	3.4	3.4
4	1.2	1.2	1.1	1.2
5	0.51	0.51	0.52	0.49

Mark only one oval.

- 12.5344
- 10.484
- 1.0484
- none of the above
- all

41. A work sampling study was conducted to establish the standard time for an operation. The observations of the study conducted as below,Total no of observation = 160, manual (hand) controlled work = 14, machine controlled work = 106, machine idle time = 40, average performance rating = 80%, no of parts produced = 36, allowance for personal needs and fatigue = 10%, study conducted for 3 days, available working hours per day = 8 hrs. Calculate the standard time per piece. 2 points

Mark only one oval.

- 32.23
- 23.32
- 22.33
- 33.22
- all

42. The following data refers to a sampling study of production of one component,Duration of data collection 5 days @8hours per day, number of operations = 10, allowances given for the process = 15%, production quantity in 5 days = 6000 components, sampling data collected, Calculate standard time of production of the component if average performance rating of the operator is 120% and the entire operation is manual. 2 points

Days	1	2	3	4	5
No. of observations	230	240	200	180	225
Occurrence of activity	200	190	170	150	210

Mark only one oval.

- 32.23
- 47.24
- 22.33
- 33.22
- all

43. A work sampling study was conducted for 100 hours in the machine shop in order to estimate the standard time. The total number of observations recorded was 2500; no working activity could be noticed for 400 observations. The ratio between manual and machine element was 2:1. Average rating factor was estimated as 1.15 and the total number of articles produced during the study period was 6000. Rest and personal allowances may be taken as 12% of the normal time. 2 points

Mark only one oval.

- 1.038 minutes.
- 10.38 minutes.
- 0.1038 minutes.
- none of the above
- all

44. There are two industries manufacturing two types of plugs. The standard time per piece is 1.5 minutes. The output of the two industries is 300 and 200 respectively per shift of 8 hours. a) What is the productivity of each per shift of 8 hours?b) What is the production of each per week (6 days) on the basis of double shift? 2 points

Mark only one oval.

- a) 3600 b)2400 respectively
- a) 2400 b)3600 respectively
- a) 240 b)360 respectively
- none of the above
- all

45. A work study was conducted in machine shop. The data has been recorded. Total number of observations = 2000, No activities = 500, the ratio between manual to machine = 3:1 portion of the activities, average performance rating = 85%, total number of pieces produced = 120 during study, duration of the study = 60hrs, calculate the standard time / piece assuming 15% relaxation allowance. 3 points

Mark only one oval.

- 24.5
- 2.45
- 25.4
- 45.2
- all