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Question Paper

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Score: 29/50 (58.00%)

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1. Where the centre of gravity of a circle lies?

- A) At its centre (Correct)** B) Any where on its radius
C) Any where on its circumference D) Any where on its diameter

2. What is the centre of gravity of a right circular cone from its base?

- A) $h/2$ B) $h/3$ (Incorrect)
C) $h/4$ D) $h/5$

3. What is the centre of gravity of a solid hemisphere from its base?

- A) $4r/5$ **B) $3r/8$ (Correct)**
C) $3r/4$ D) $r/2$

4. Which state of equilibrium's example is A cone resting on its tip?

- A) Stable B) Neutral
C) Unstable (Correct) D) Horizontal

5. Which one of the following geometrical shapes centre of gravity lies from its base is $1/3$ of its height?

- A) Square B) Rhombus
C) Triangle (Correct) D) Cone

6. Which state of equilibrium's example is, A cone resting on its base?

- A) Un-stable B) Neutral
C) Stable (Correct) D) Bothe A and B

7. What is the centre of gravity of a semi circle of diameter 12 cm?

- A) 2.24 cm **B) 2.54 cm (Correct)**
C) 3.25 cm D) 2.75 cm

8. Which is elastic material?

- A) Nylon (Correct)** B) Polystyrenes
C) Celluloid D) Polycarbonates

9. What is the maximum percentage of stretch of its original length is allowable for elastic materials?

- A) 100% B) 200%
C) 300% (Correct) D) 400%

10. What is the ratio of change in length to original length?

- A) Linear strain (Correct)** B) Lateral strain
C) Volumetric strain D) Poisson's ratio

11. Which symbol is used to express change in length?

- A) L **B) Δl (Correct)**
C) I D) e

12. Which force acts on rivets?

- A) Tensile force (Incorrect) B) Compressive force
C) Shear force D) Bending force

13. What is the ratio between ultimate stress to working stress?

- A) Bulk modulus B) Young's modulus
C) Factor of safety D) Modulus of rigidity (Incorrect)

14. What is the ratio of shear stress to shear strain?

- A) Modulus of elasticity (Incorrect) **B) Modulus of rigidity**
C) Bulk modulus D) Yield point

15. Which force acts on crank shaft?

- A) Shear stress (Incorrect) **B) Torsional stress**
C) Tensile stress D) Compressive stress

16. What force will be required to punch a hole of 10 mm dia in a 1 mm thick plate, if the allowable shear stress is 50 N/mm^2 ? ($\pi = 22/7$)

- A) 1757 N (Incorrect) B) 1575 N
C) 1571.4 N D) 1577 N

17. What is the tensile strain if a force of 3.2 kN is applied to a bar of original length 2800 mm extends the bar by 0.5 mm?

- A) 0.0001786 (Correct)** B) 0.0001687
C) 0.0001867 D) 0.0001968

18. How much strain is developed in an iron rod of 1 metre length gets elongated by 1 cm, if a force of 100 kg is applied at one end?

- A) 0.1 **B) 0.01 (Correct)**
C) 0.001 D) 0.0001

19. What is the safe stress if the ultimate stress of a material is 35 kg/mm² and factor of safety is 5?

- A) 0.143
- B) 0.7
- C) 1.43
- D) 7 (Correct)**

20. Which hand book referred by machine engineer?

- A) Parry's cheorikal
- B) CRC
- C) Mark standard**
- D) Oxford Dictionary (Incorrect)

21. What is a hand book?

- A) Model book of various works
- B) Type of reference work or other collection of instruction**
- C) Design book of latest works (Incorrect)
- D) Dictionary of materials

22. Which standard schedule of rates to be considered for estimation?

- A) Standard schedule of rates of the last year (Incorrect)
- B) Standard schedule of rates of the average of the last 10 years
- C) Standard schedule of rates of the average of last 5 years
- D) Standard schedule of rates of the current year**

23. What is an over estimate?

- A) When an estimate is exceeded to actual estimate**
- B) When an estimate is fell short of the actual estimate
- C) When an estimate perfectly matches the actual estimate
- D) No work started as per estimate (Incorrect)

24. What is a under estimate?

- A) No work started as per estimate (Incorrect)
- B) An estimate perfectly matches with actual
- C) An estimate is fell short of the actual estimate**
- D) An estimate is exceeded the actual estimate

25. What is the term used for the method of calculating various quantities and expenditure on a particular job or process?

- A) Estimation (Correct)**
- B) Drawing
- C) Specification
- D) Plan

26. What is the name of a booklet, the rates of various terms are indicated?

- A) Price bank
- B) Price bunch (Incorrect)
- C) Price tag
- D) Price catalogue**

27. What is the other term of pocket reference in engineering works?

- A) Hand tool
- B) Hand book (Correct)**
- C) Good book
- D) New book

28. Which one is included in machining estimation sheet?

- A) Transport cost (Incorrect)
- B) Advertisement cost
- C) Raw material cost**
- D) Tax

29. What is the minimum permissible size of aluminium wire used in estimation?

- A) 1.5 sq.mm (Correct)**
- B) 2.5 sq.mm
- C) 5 sq.mm
- D) 3.5 sq.mm

30. Which one is the most reliable estimate?

- A) Preliminary estimate (Incorrect)
- B) Plinth area estimate
- C) Cube rate estimate
- D) Detailed estimate**

31. What describes the detailed specification for the item of work?

- A) Quality, Quantity, Workmanship, Method of execution (Correct)**
- B) Colour
- C) Tax, Transport, Overhead expenses
- D) Maintenance, Stock, Cost

32. Which of the impurity in cast iron makes it hard and brittle?

- A) Silicon
- B) Sulphur (Correct)**
- C) Manganese
- D) Phosphorus

33. What cables are used for 132KV lines?

- A) High tension
- B) Super tension
- C) Extra high tension
- D) Extra super voltage (Correct)**

34. Which specification is other than general specification?

- A) Brief specification (Incorrect)
- B) Bulk specification
- C) Detailed specification**
- D) Main specification

35. What percentage of water absorbed by a good building stone?

- A) Less than 10%
- B) Less than 20%
- C) Less than 8%
- D) Less than 5% (Correct)**

36. What is the weight of the iron ball has volume of 250 cc and density 7.5 gm/cc?

- A) 1750 gram
- B) 1875 gram**
- C) 1975 gram
- D) 1785 gram (Incorrect)

37. What is the total estimation cost for making the

component of 8 drilled hole dia 10 mm and 4 Numbers of M6 taps in the plate, if Rs.8/- per drilled holes and Rs.12 per drill and tap?

- A) Rs.102
B) Rs.100
C) Rs.112 (Correct)
D) Rs.110

38. What is the estimation of milling cost of a rectangular block size 100 X 80 X60 mm, if cost of the milling is Rs.2/sq.cm?

- A) Rs.652/-
B) **Rs.752/- (Correct)**
C) Rs.572/-
D) Rs.960/-

39. What is the total cost of Air-conditioners installed in a college, 40 class room-each 1 Air-conditioner, Computer lab 5 Air- conditioners and conference hall 5 Air-conditioners (Cost of one air conditioner Rs.30000/- including installation)?

- A) Rs.10 lakhs
B) Rs. 20 lakhs
C) Rs. 12 lakhs (Incorrect)
D) Rs. 15 lakhs

40. Which affects the centre of gravity of the object

- A) Weight
B) **Mass (Correct)**
C) Density
D) Shape

41. What is the name of the point at which all the weight of the body concentrated?

- A) Initial point
B) **Centre of gravity (Correct)**
C) Centroid
D) Central point

42. What is the centre of gravity of a right circular cone from its base?

- A) h/2
B) h/3
C) h/4 (Correct)
D) h/5

43. What is the centre of gravity of a rectangular body?

- A) Longer side of rectangle
B) Shorter side of rectangle
C) At the point of intersection of its diagonals
D) At the corners (Incorrect)

44. Which state of equilibrium's example is A cone resting on its tip?

- A) Stable
B) Neutral
C) Unstable (Correct)
D) Horizontal

45. What is the process of heat treatment?

- A) The process of heating and cooling to change the structure and properties (Correct)**
B) The process of heating to change the dimensions
C) The process of cooling to measure the dimensions
D) The process of heating and bending as per our requirement

46. What is the name of the structure formed, if a steel is heated for about 723 Degree C?

- A) Cementite
B) **Austenite (Correct)**
C) Martensite
D) Ferrite

47. What is the name of heat treatment process done to relieve strain and stress?

- A) Normalising
B) **Annealing**
C) Hardening
D) Tempering (Incorrect)

48. How much time is allowed normally in soaking zone for a 10mm thick metal piece while hardening?

- A) 5 minutes**
B) 10 minutes (Incorrect)
C) 15 minutes
D) 20 minutes

49. What is colour of a metal piece when heated to 250 Degree C while doing the tempering process?

- A) Blue
B) **Brown (Correct)**
C) Purple
D) Pale

50. What is the purpose of tempering a steel?

- A) To reduce the brittleness**
B) To remove the ductility
C) To increase the hardness (Incorrect)
D) To increase the brittleness