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Code: 6886

1. Which affects the centre of gravity of the object?

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

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

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

3. 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)  $h/5$

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

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

5. What is the centre of gravity of a sphere?

- A) **At the centre (Correct)**  
 B) On the circumference  
 C) At the diameter  
 D) At the radius

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

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

7. Which is elastic material?

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

8. Which is thermo plastic material?

- A) Butyl rubber (Incorrect)  
 B) Nylon  
 C) Neoprene  
 D) **Vinyl polymers**

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

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

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

- A) **Linear strain**  
 B) Lateral strain (Incorrect)

- C) Volumetric strain  
 D) Poisson's ratio

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

- A) L (Incorrect)  
 B)  **$\Delta l$**   
 C)  $l$   
 D)  $e$

12. Which one is the ratio of stress?

- A) **Load and area**  
 B) Load and direction  
 C) Load and diameter (Incorrect)  
 D) Load and time

13. Which force acts on rivets?

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

14. What is the formula for bulk modulus?

- A) Tensile stress/Tensile strain  
 B) Compressive stress/Compressive strain  
 C) **Volumetric stress/Volumetric strain (Correct)**  
 D) Shear stress/Shear strain

15. What is the term used for maximum stress attained by a material before rupture?

- A) Tensile stress  
 B) Compressive stress  
 C) Working stress  
 D) **Ultimate stress (Correct)**

16. Which force acts on crank shaft?

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

17. Which is thermosetting plastic?

- A) Vinyl polymers (Incorrect)  
 B) Polystyrenes  
 C) Celluloid  
 D) **Melamine resins**

18. 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  $50\text{N/mm}^2$ ? ( $\pi = 22/7$ )

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

19. What is the tensile stress if a square rod of 10 mm side is tested for a tensile load of 1000 kg?

- A)  $1 \text{ kg/mm}^2$  (Incorrect)      B) **10 kg/mm<sup>2</sup>**  
C) 100 kg/mm<sup>2</sup>      D) 1000 kg/mm<sup>2</sup>

20. 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 (Incorrect)      B) **0.01**  
C) 0.001      D) 0.0001

21. What is the young's modulus if a wire of 2m long, 0.8 mm<sup>2</sup> in cross section increases its length by 1.6 mm on suspension of 8 kg weight from it?

- A)  $1.25 \text{ kg/mm}^2$  (Incorrect)      B) 12.5 kg/mm<sup>2</sup>  
C) 125 kg/mm<sup>2</sup>      D) **12500 kg/mm<sup>2</sup>**

22. What is the safe stress if the ultimate stress of a material is 35 kg/mm<sup>2</sup> and factor of safety is 5?

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

23. Which hand book referred by machine engineer?

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

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

- A) Standard schedule of rates of the last year      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 (Incorrect)      D) **Standard schedule of rates of the current year**

25. 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 (Incorrect)  
C) When an estimate perfectly matches the actual estimate      D) No work started as per estimate

26. What is a under estimate?

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

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

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

28. What is the main factor to be considered while preparing a detailed estimate?

- A) Shape of material      B) Brand of the materials  
C) **Quantity, availability and transportation of materials (Correct)**      D) Location of material

29. What is the use of engineering drawing?

- A) **For estimation of material and execution of work**      B) For colourful appearance  
C) For reducing the cost (Incorrect)      D) For increasing the cost

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

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

31. Which one is related to estimation of work?

- A) **Bill of material**      B) Packing (Incorrect)  
C) Information table      D) Hand book

32. Which one is included in machining estimation sheet?

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

33. Which IE rules are to be verified on completion of wiring on any new installation?

- A) **IE Rules, 1956 (Correct)**      B) IE Rules, 1960  
C) IE Rules, 1961      D) IE Rules, 1967

34. 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)**

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

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

36. What is the weight of a rectangular block of a cost iron of 250cm X 20cm X 8cm (density of cast iron is 7.8 gm/cm<sup>3</sup>)?

**A) 312 kg (Correct)**

B) 372 kg

C) 410 kg

D) 525 kg

37. What is the total wattage in a room if 2 tube lights of 50W rating, 2 fans of 80W rating, 2 numbers of light points of 60W rating, one fan point of 60W rating and one 3 pin socket of 100W rating?

A) 340 W

B) 440 W (Incorrect)

**C) 540 W**

D) 640 W

38. What is the total labour charges for a particular wiring work completed in 2 days by one electrician and one helper.(Electrician @ ₹800/day and helper @ Rs 400/day)

A) Rs. 2000

**B) Rs. 2400**

C) Rs. 3000 (Incorrect)

D) Rs. 1400

39. What is the total cost of painting of a class room including ceiling, if the size of length is 6m, breadth is 5m and height is 4m. (Painting + labour cost Rs.150/- per sq.m)

A) Rs.15000/- (Incorrect)

B) Rs.16700/-

**C) Rs.17700/-**

D) Rs.18700/-

40. 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 (Incorrect)

C) Rs. 12 lakhs

**D) Rs. 15 lakhs**

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

A)  $4r/5$

**B)  $3r/8$  (Correct)**

C)  $3r/4$

D)  $r/2$

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

A) Stable

B) Neutral (Incorrect)

**C) Unstable**

D) Horizontal

43. Which one of the following geometrical shape's centre of gravity lies from its base is  $1/3$  of its height?

A) Square

B) Rhombus

**C) Triangle**

D) Cone (Incorrect)

44. What are the various types of heat treatment processes?

**A) Annealing, Normalising, Hardening and Tempering (Correct)**

B) Normalising, Heating, Cooling and Painting

C) Hardening, Soaking, Painting and Packing

D) Tempering, Cooling, Packing and Solling

45. What are the various stages of heat treatment?

A) Heating, Cooling and Quenching

B) Quenching, Cooling and Heating

**C) Heating, Soaking and Quenching (Correct)**

D) Soaking, Quenching and Cooling

46. Which heat treatment process is done to refine the grain structure of the steel?

A) Annealing (Incorrect)

**B) Normalising**

C) Hardening

D) Tempering

47. Which process produce equilibrium conditions?

A) Annealing and Hardening

B) Normalising and Tempering (Incorrect)

**C) Annealing and Normalising**

D) Normalising and Tempering

48. Which process steel is heated in a carbonaceous atmosphere for the penetration of carbon?

A) Case hardening (Incorrect)

B) Nitriding

**C) Carburising**

D) Induction hardening

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

**A) 5 minutes**

B) 10 minutes

C) 15 minutes

D) 20 minutes (Incorrect)

50. What is the purpose of tempering a steel?

**A) To reduce the brittleness**

B) To remove the ductility (Incorrect)

C) To increase the hardness

D) To increase the brittleness