Program: BE Mechanical Engineering

Curriculum Scheme: Revised 2012

Examination: Final Year Semester VII

Course Code: MEC701 and Course Name: Machine Design - II

Time: 1 hour Max. Marks: 50

==============================================================================

Note to the students:- All the Questions are compulsory and carry equal marks .

|  |  |
| --- | --- |
| Q1. | If worm helix angle is 30⁰, then worm should have at least \_\_\_ threads. |
| Option A: | 5 |
| Option B: | 6 |
| Option C: | 7 |
| Option D: | 8 |
|  |  |
| Q2. | A pair of worm gear is written as 2/40/12/6. Calculate the centre distance. |
| Option A: | 40mm |
| Option B: | 156mm |
| Option C: | 200mm |
| Option D: | 80mm |
|  |  |
| Q3. | A pair of worm gear is written as 2/40/12/6. Calculate the speed reduction. |
| Option A: | 2 |
| Option B: | 15 |
| Option C: | 20 |
| Option D: | 6 |
|  |  |
| Q4. | A pair of worm gear is written as 2/40/12/6. Calculate the pitch circle diameter of worm wheel. |
| Option A: | 72mm |
| Option B: | 240mm |
| Option C: | 260mm |
| Option D: | 320mm |
|  |  |
| Q5. | A pair of worm gear is written as 2/40/12/6. Calculate the throat diameter of the worm wheel. |
| Option A: | 220.5mm |
| Option B: | 246.4mm |
| Option C: | 190.44mm |
| Option D: | 251.7mm |
|  |  |
| Q6. | A pair of worm gear is written as 2/40/12/6. Calculate the root diameter of the worm wheel. |
| Option A: | 186.22mm |
| Option B: | 250.4mm |
| Option C: | 225.6mm |
| Option D: | 250.44mm |
|  |  |
| Q7. | If tangential force on worm is 1500N, then axial force on worm wheel will be ? |
| Option A: | 1500N |
| Option B: | 3000N |
| Option C: | 1500√2 N |
| Option D: | 750N |
|  |  |
| Q8. | Which of the following is not true about worm gears ? |
| Option A: | Compact |
| Option B: | Smooth and silent operation |
| Option C: | Low speed reduction |
| Option D: | High speed reduction |
|  |  |
| Q9. | Which of the following is not a property of lubricants . |
| Option A: | High specific heat |
| Option B: | High flash point |
| Option C: | Low pour point |
| Option D: | Low oxidation stability |
|  |  |
| Q10. | A journal of 120 mm diameter rotates in a bearing at a speed of 1000 rpm. What is the power lost during friction if 8 kN radial load acts on the journal and coefficient of friction is 0.002525 ? |
| Option A: | 0.126 kW |
| Option B: | 0.253 KW |
| Option C: | 2.365 kW |
| Option D: | 7.615 kW |
|  |  |
| Q11. | "When the length of the journal is equal to the diameter of the journal, then the bearing is said to be a " |
| Option A: | "short bearing " |
| Option B: | "long bearing " |
| Option C: | "medium bearing " |
| Option D: | "square bearing " |
|  |  |
| Q12. | "If we exclude the cost factor, which bearing is preferred? " |
| Option A: | "Both are equally preferred " |
| Option B: | "Hydrodynamic " |
| Option C: | "Hydrostatic " |
| Option D: | Rolling contact |
|  |  |
| Q13. | "The listed life of a rolling bearing, in a catalogue, is the " |
| Option A: | "minimum expected life " |
| Option B: | "maximum expected life " |
| Option C: | "average life " |
| Option D: | "rated life " |
|  |  |
| Q14. | "In most of internal combustion engines, crankshaft bearings is " |
| Option A: | "hydrodynamic journal baringe " |
| Option B: | "ball bearings " |
| Option C: | "hydrostatic journal bearing " |
| Option D: | "roller bearings " |
|  |  |
| Q15. | "It is a point on the pitch curve having the maximum pressure angle " |
| Option A: | "zero point " |
| Option B: | "prime point " |
| Option C: | "pitch point " |
| Option D: | Trace point |
|  |  |
| Q16. | "It is the smallest circle that can be drawn to the cam profile " |
| Option A: | base circle |
| Option B: | pitch circle |
| Option C: | prime circle |
| Option D: | Secondary circle |
|  |  |
| Q17. | A circle drawn with centre as the cam centre and radius equal to the distance between the cam centre and the point on the pitch curve at which the pressure angle is maximum, is called |
| Option A: | base circle |
| Option B: | pitch circle |
| Option C: | prime circle |
| Option D: | Secondary circle |
|  |  |
| Q18. | "Offet is provided to a cam follower mechanism to " |
| Option A: | "minimise the side thrust " |
| Option B: | "accelerate " |
| Option C: | "avoid jerk " |
| Option D: | avoid shock |
|  |  |
| Q19. | "Which is positive drive? " |
| Option A: | "flat belt drive " |
| Option B: | "V belt drive " |
| Option C: | "crossed belt drive " |
| Option D: | timing belt |
|  |  |
| Q20. | The relation between the pitch of the chain ( p) and pitch circle diameter of the sprocket (d) is given by |
| Option A: | p = d sin (60 /T) |
| Option B: | p = d sin (90 /T) |
| Option C: | p = d sin (120 /T) |
| Option D: | p = d sin (180 /T) |
|  |  |
| Q21. | When the belt is stationary, it is subjected to some tension, known as initial tension. The value of this tension is equal to the |
| Option A: | tension in the tight side of the belt |
| Option B: | tension in the slack side of the belt |
| Option C: | sum of the tensions in the tight side and slack side of the belt |
| Option D: | average tension of both side |
|  |  |
| Q22. | The centrifugal tension in belts |
| Option A: | increases power transmitted |
| Option B: | decreases power transmitted |
| Option C: | have no effect on the power transmitted |
| Option D: | constant power transmitted |
|  |  |
| Q23. | The velocity of the belt for maximum power is |
| Option A: | √T/3m |
| Option B: | √T/4m |
| Option C: | √T/5m |
| Option D: | √T/6m |
|  |  |
| Q24. | Multi disk clutches are dry clutches. |
| Option A: | Plasma clutches |
| Option B: | Wet clutches |
| Option C: | Yes |
| Option D: | Depends on the lubrication used |
|  |  |
| Q25. | The coefficient of friction is high in multi disk plate clutch. |
| Option A: | Yes |
| Option B: | Coefficient of friction is less |
| Option C: | Coefficient of friction is high |
| Option D: | Coefficient of friction is very high |