

## BHEL RECRUITMENT PAPER AUG 2008

A) Technical

B) Aptitude

Both parts consists 120 marks each. There is negative marking which 0.2.

Technical paper

- 1) How many links in slider crank mechanism?
- 2) Deflection of cantilever beam subjected to end point load?
- 3) Stress concentration factor  $K_f = ?$
- 4) What is the unit of BHN?
- 5) What is efficiency of riveted joint?
- 6) Composition of Munz metal?
- 7) One shaft is subjected to torque 1700 N-m having shear strength of 40Mpa. Determine the diameter?
- 8) A reversible engine is working between the 600F and 60F. Carnot efficiency is equal to =
- 9) Coefficient of restitution lies between =
- 10) Pectlet number is equal to = a)  $Re \cdot Nu$  b)  $Re \cdot Pr$  c)  $Re \cdot Gr$
- 11) Formula of effectiveness of heat transfer =
- 12) Emissivity depends on
- 13) Reynolds number formula
- 14) Production process for Al?
- 15) Thick metals welded by following processes.....

16) Logarithmic decrement is given by =  $\frac{2\pi\xi}{\sqrt{1-\xi^2}}$

17) Magnification factor at resonance is given by =  $\frac{1}{2\xi}$

18) Cutting forces decreases by = a) increasing rake angle b) decreasing rake angle c) increasing relief rake angle

19) Some problem on Mohr's circle radius...

20) Volumetric strain =

21) Pendulum problem Time is given length = ?

$$\frac{\omega}{\omega_n} = \text{a) } \sqrt{\frac{2-R}{R+1}} \quad \text{b) } \sqrt{\frac{2+R}{R+1}}$$

22) For undamped system Transmission Ratio is R then

23) Which is not related to CI engine = ans) spark plug

24) Cotter joint generally fail by

25) Which coupling is used for intersecting shafts?

26) No of teeth on gear and pinion is given, center distance is given, module = ?

27) Coefficient of friction and angle is given, what is ration of tension in belt?

28) What is lamis thoerm?

29) Condition for self locking .....

30) Discontinuous chips can be produced by .....

$$\frac{\omega}{\omega_n} =$$

31) For critical speed  $\frac{\omega}{\omega_n}$  should be a)  $>\sqrt{2}$  b)  $>\sqrt{3}$

32) Air at 20C blows over a hot plate 50 by 75 cm maintained at 250C. The convective heat transfer

coefficient is  $25\text{W/m}^2$ . Cal the heat transfer.

- 33) Metacenter always lies .....
- 34) Rotometer is used to measure....
- 35) Formula for effort of a governor.....
- 36) Stroboscope is used to measure.....
- 37) What is size of A4 paper?
- 38) Some problem on riveted joint.....
- 39) Modulus of rigidity  $G$  is given by.....
- 40) Wave properties in solids is depends on elasticity.
- 41) Radiation heat transfer is directly proportional to .....
- 42) Escape velocity is given by  $\sqrt{2gR}$
- 43) Kinetic energy formula....
- 44) Corolis component.....
- 45) Potent ional Energy theory is given by.....
- 46) Perpendicular axis thoerm.....
- 47) Pappus thoerm.....
- 48) Center of gravity of a spherical shell.....
- 49) Angle and linear dimension is given by chamfer.
- 50) For thick cylinders .....
- 51)  $N = 10$  to  $N = 10E5$  cycles then it is .... a) finite life b)infinite life
- 52) Value of steel young's modulus .....
- 53) Endurance strength of steel equal to .....
- 54) Three problems on strain gauges ....
- 55) Three problems on vectors some related to work done....
- 56) Straight line mechanism...
- 57) Some problem springs..
- 58) Design on thermal stresses can be considered for a) concrete b)steel rolls c)blast furnace
- 59) Velocity problem it is in the vector form to find displacement?
- 60) Hardness is a property