

BHEL Whole Testpaper

BHEL PAPER ON 11th FEBRUARY AT TRICHY

Hello friends,

Yesterday i attended the BHEL Engineer Trainee written test in Mechanical stream. They conducted for four branches in engineering. Comp sci, ECE, EEE and Mech. In Mechanical stream there were a total of 240 questions.

120- [Technical questions](#) in Mechanical Engineering

120- **General Aptitude questions. (Quantitative Aptitude, Reasoning Ability, Logical thinking, English usage)**

The questions were mainly asked in

[Thermodynamics](#)

Engineering Mechanics

Theory of machines

Production tech

If you have strong fundas, u can really do well in this session...

Following are the questions asked: (I will try to give you as many questions as i remember)

[One Mark for correct answer, 1/5th for wrong answer. Five choices were given]

- 1)Unit of Entropy (J/kg K or kJ/kg K)
- 2)A mass of 100kg is falling from a height of 1 m and penetrates the sand into for 1 m. What is the resistance force given by sand.
- 3)Ratio of specific heats of air. (1.41)
- 4)A body weighs 3 kg in air. If it is submerged in a liquid, it weighs 2.5 kg. What is the specific gravity of the liquid.
- 5)Two cars travell in same direction at 40 km/hr at a regular distance. A car comes in a opposite direction in 60km/hr. It meets each car in a gap of 8 seconds. What is the distance between them?
- 6)A simple problem involving in hoops stress. For sphere: $M = [3/2] * p * V * [\text{density of pressure vessel material} / \text{Maximum working stress it can tolerate}]$ For Thin walled pressure walls: Hoops stress or stress in the radial direction $= p * r / 2t$
- 7)A problem in force calculation in a body moving in a inclined surface.
- 8)Composition of bronze. (Copper+zinc)
- 9)Compostion of stainless steel.(iron+chromium+nickel+carbon)
- 10)CI is manufactured in which process. (cupola process)
- 11)What percentage of carbon is preset in pig iron. (4.5 to 6%)
- 12)Water is available at 10m height. What is the pressure available? (pressure=density*g*height; $p = 1000 * 9.81 * 10$; $p = 98100N/m^2$)
- 13)What will happen if the speed of the centrifugal pump doubles.
- 14)The unit eV is widely used in ? (Nuclear and atomic physics)
- 15)What will happen to the resistance, when the diameter of the conductor is doubled?
- 16)The power comsumed by a electrical device is 1000W at 250V, What is the resistance in the

device?

(Power= Voltage*current; Current=Power/Voltage, Current, $I=1000/250=4$ amps. $V=IR$, Therefore $R=250/4=62.5$ ohms)

17)Why DC current is not used in transformer.

18)On what principle the sonar/ radar(I dont remember) works?

19)Bending moment diagram for the UDL is in what shape?

20)Function of the distributor in petrol vehicles? (Spark timing)

21)Which is not present in CI engines? (carburettor)

22)What will happen if one cylinder receives more amount of fuel spray from injectors than other injectors?

23)Purpose of draft tube in hydraulic turbines? (The purpose of a draft tube is to convert some of the kinetic energy of the flow from the runner (the rotating part of the turbine) into pressure energy and thereby increase the efficiency of the hydro power turbine.)

24)What is the effect of reheat in the gas turbine? (The advantage of reheat is significantly increased thrust; the disadvantage is it has very high fuel consumption and inefficiency)

25)Problems in involving with friction coefficient.

26)Factor of safety = Yield stress/Working stress.

27)Which is the example of non parallel power transmission (Universal coupling)

28)For perpendicular shafts worm gear is used.

29)A planet gear with 25 teeth is meshed with a sun gear of 100 teeth. Both are connected using an arm. How many rotations are needed for planet gear to complete one rotation around the sun gear?

30)What is equivalent spring constant for spring in parallel?

31) Some questions were asked related to boundary layer and vortex flow.

32) 5 questions were asked in PERT, Process planning, Product planning, Break even analysis.

33)How are tungsten and sintered composite materials machined? (Electro Discharge Machining, EDM)

General Aptitude:

All the sections were very easy. Basic knowledge is sufficient to attend all the questions. But Keep time factor in mind and increase your speed. There are 120 questions like this!!

English:

--- Detect the words with wrong spellings (5 questions)

---Fill in the blanks with appropriate words(5 questions)

--- Two reading comprehensions were given(10 questions)

---Find the error in the sentence (8 questions)

Reasoning:

--- Seating arrangement problems

--- Find the relation between them

Quantitative ability:

All the questions were very easy.

---50% of the questions are from basic geometry.

---Remaining were very general and easy. But as there is a total 120 questions you have to be really quick.