



TARGET-GATE 2016

About GATE Exam
GATE 2016 Eligibility & Pattern
GATE 2016 Syllabus & Analysis
GATE Reference Books
GATE Previous Papers
GATE 2016 Schedule
GATE Detail Solution
GATE Cutoff Details

PSU'S

About PSU's
PSU's Eligibility
PSU's Pattern
PSU's Syllabus
PSU's Exam Schedule
PSU's Previous Papers
PSU's Reference Books
GATE 2013 Cutoff for PSU's

IMPORTANT LINKS

GATE
IES
PSU's
Others Links

[Google](#)

BHEL Previous Paper

Comp sci, ECE, EEE and Mech. In Mechanical

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

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.

[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: $M = \frac{3}{2} \rho V [\text{density of pressure vessel material/Maximum working stress it can tolerate}]$ For Thin walled pressure walls: Hoops stress or stress in the radial direction $= \rho r / 2t$

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;
 $p = 1000 \cdot 9.81 \cdot 10$; $p = 98100 \text{N/m}^2$)

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 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 reheater in the gas turbine? (The advantage of reheater is significantly increased thrust; the disadvantage is it has very high fuel consumption and inefficiency)
- 25) Problems 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 a 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 are machined? (Electro Discharge Machining, EDM)

BHEL PLACEMENT PAPER - 11 FEB 2007 - NEW DELHI

1. The ratio of two specific heats of air is equal to. = 1.41
2. A perfect gas at 270C is heated at constant pressure till its volume is double. The final temperature is = 3270C
3. An engine operates between temperature of 9000K and T₂ and another engine between T₂ and 8000K. For both to do equal work, value of T₂ will be. = 6500K
4. Internal energy of a substance depends on = Temperature
5. Work done in compressing 1kg of gas adiabatically from p₁, V₁, T₁ to p₂, V₂, T₂ is equal to = C_v(T₂-T₁)
6. The unit of entropy is = J/kg 0K
7. Indicated power of a 4-stroke engine is equal to = pLAN/2
8. Which of the following is not an internal combustion engine :
a) 2 stroke petrol engine b) 4 stroke petrol engine c) Diesel engine d) steam engine e) Gas turbine. = (d)
9. If one cylinder of a diesel engine receives more fuel than the others, then for that cylinder the:
a) exhaust will be smoky b) piston rings would stick into piston grooves c) exhaust temperature will be high d) engine starts overheating e) all of the above. = (e)
10. The spark plug gap is normally maintained at: = 0.45 to 0.6mm
11. A distributor in spark ignition engines performs the function of : = Providing the correct firing order in engine
12. Which of the following does not relate to C.I. engine:: a) fuel pump b) fuel injector c) governor d) carburetor e) flywheel = (d)
13. Air fuel ratio in a jet engine is = 60:1
14. What is the value of Prandtl No.?
15. In domestic refrigerator, the tubes at the back of the refrigerator are: a) evaporator b) condenser c) capillary tubes d).....
16. Which refrigerant has the highest critical point temperature. = Freon-11
17. Wet bulb temperature is. = indication of amount of moisture in air
18. On psychometric chart, dry bulb temperature lines are. = Vertical

19. Surface tension has the units. = newtons/m
20. The line of action of the buoyant force acts through the. = Centroid of the displaced volume of fluid
21. A pressure of 25m of head of water is equal to. =245kN/m²
22. For a submerged body to be in stable equilibrium, the center of gravity should be. =Below the center of buoyancy.
23. The actual velocity at vena contracta for flow through an orifice from a reservoir of height H=? . =C_vv₂gH
24. A body weighing 2kg in air weights 2.5kg when submerged in water. Its specific gravity is. = 6
25. In a free vortex motion: = each particle moves in a circular path with a speed varying inversely as the distance from the center.
26. A centrifugal pump has speed-1000rpm, Flow-1200l.p.m, Head-20m, Power-5H.P. If its speed is increased to 1500rpm, new flow will be.: = 1800l.p.m
27. Runaway speed of a hydraulic turbine is: = the speed if the turbine runner is allowed to revolve freely without load and with the wicket gates wide open.
28. 10m of water column is equal to = 100kN/m²
29. M.I. of a circular area about an axis perpendicular to the area is: = $\frac{\pi r^4}{2}$
30. A projectile is fired at an angle ? to the vertical. Its horizontal range will be maximum when ? is . =45°
31. An elevator weighing 1000kg attains an upward velocity of 4m/sec in two seconds with uniform acceleration. The tension in the supporting cables will be = 1200kg.
32. A 13m ladder is placed against a smooth vertical wall with its lower end 5m from the wall. What should be the coefficient of friction between ladder and floor so that it remains in equilibrium. = 0.21
33. A car is moving with a velocity of 60km/hr and possesses energy of 5x10⁵ joules. The mass of the car will be. =3000kg.
34. If l is the span of a light suspension bridge whose each cable carries total weight (w) and the central dip is y, the horizontal pull at each support is: = $\frac{wl}{y}$ OR
35. A beam of length l, having uniform load w kg/unit length is supported freely at the ends. The moments at mid span will be: = $\frac{wl^2}{8}$.
36. A boiler shell 200cm dia and plate thickness 1.5cm is subjected to internal pressure of 1.5MN/m², then the hoop stress will be. = 100N/m²
37. 100KW is to be transmitted by each of two separate shafts. A is turning at 250rpm and B at 300rpm. Which shaft must have greater diameter.: = B
38. Two identical leaf springs of spring constant k are arranged like cantilevers in parallel and attached at free end by a spring of spring constant k. The equivalent spring constant of combination is; = 1.5k.
39. Automobile steering gear is an example of: = lower pair.
40. The type of coupling used to join two shafts whose axes are neither in same straight line nor parallel, but intersect is. = Universal coupling.
41. To transmit power from one rotation shaft to another whose axes are neither parallel nor intersecting, use: = Spiral gear.
42. A gear having 100 teeth is fixed and another gear having 25 teeth revolves around it, the centre lines of both gears being joined by an arm. How many revolutions will be made by gear of 25 teeth for one revolution of arm. = 5 rev.
43. The secondary critical speed of a shaft occurs at: = twice the speed of primary critical speed.
44. Brittle coating technique is used for: = experimental stress analysis.
45. Factor of safety is the ratio of: = yield stress/working stress.
46. Type of gear used for non-intersection perpendicular shafts: = Hypoid gears.
47. Corrosion resistance of steel is increased by adding: = Chromium & Nickel
48. The product of Cupola is called: = cast iron

49. Brinell tester uses a hardness steel ball of size: = 10mm
50. Sintered and tungsten carbides can be machined by: = EDM
51. What kind of abrasive cut off wheel should be used to cut concrete, stone and masonry? =Diamond grit.
52. In break-even analysis, total cost consists of: = Fixed cost + Variable cost.
53. The amount deducted from the salary of workers towards employees provident fund is : =deposited in the account of worker with Provident Fund Commissioner.
54. PERT is: = event oriented technique
55. Bar charts are suitable for: = minor works.
56. on a PERT/CPM chart represents: = a significant event representing some mile-stone
57. Electron volt is the unit of : = Energy.
58. Seamless tubes are made by?
59. Reheating in gas turbine results in: = increase of work ratio and decrease of thermal efficiency.
60. Why DC current is not used in transformer?
61. What is the purpose of draft tube in hydraulic turbines: = to convert the kinetic energy into pressure energy.
62. A mass of 100kg is falling from a height of 1m and penetrates the sand to 1m. what is the resistance force of the sand?
63. Two cars travel in the same direction at 40km/hr at a regular distance. A car comes in the opposite direction at 60km/hr. It meets each car in a gap of 8 seconds. What is the distance between the two cars?