i Friends  
  
I am Harshad Shrigondekar from Mechanical Engineering. It surprised me as no any information was available here for mech.engg. students. I hope this little one from me may help you.  
  
BEL was there for campus recruitment in our college (COEP) on 17th Jan 2009 FOR 2 streams: MECH & ETC  
  
APTITUDE TEST: objective with 5 options given  
It was totally a technical paper.  
60 min.-70 questions.1/4 -ve for each wrong answer.  
it covered following subjects- ic engine, tom, manufacturing engg., machine design, material science, strength of material, physics.  
  
some of the questions are:  
  
PHYSICS  
1. pulley forms which pair? (TOM)  
2. swinging pendulum: amplitude decreases/increases with time linearly or exponentially.  
3. choose KE theory assumption.  
4. Q on cohesive force.  
5. what is DPT?  
6. Variation of latent heat of vapourisation with pressure?  
7. highest T of refrigerant should be /=/<= critical temperature  
8. for avoiding cavity what should be NPSH?  
9. working principle of jet engine?  
10. choose dehumidification method.  
11. highest calorific value : a)anthracite b)bituminous c)lignite....  
12. for max. capacity of compressor inlet T of air should be: high, low, very high..  
  
IC ENGINE  
13. upper piston ring is COMPRESSION RING.  
14. flywheel size for diesel engine in comparison with petrol engine.  
15. compression ratio=?  
16. volumetric efficiency=?  
17. supercharging=?  
  
ME:  
18. abt. 8 questions were toally unfamiliar to me. i did not even try to read them. they were abt. sand moulding, dies & all those stuff.  
19. part of a lathe which houses speed changing gears is?  
20. splined shafts are preferred over keys, when?=when axial traveling is there.  
  
MD:  
21. what is ALLEN screw?  
22. three Q from types of keys.  
23. endurance strength?  
24. FOS?  
25. shear stress theory is used for DUCTILE materials.  
26. crane hook material?  
27. Surface hardness is improved by a) V b) Cr c) W d)all e)none  
n lot more Qs, they were not tough at all, but few of them surely created somewhat jumbling. some formulae from SOM were there.n also choose wrong/correct sentence.  
  
INTERVIEW (both technical & HR), (4 TO 1) GM was there.(45-50min)  
1. abt urself, family background. discuss hobbies. we discussed a lot on my hobby-trekking.  
2. what is lathe? broaching? types of casting? explain sand & centrifugal casting, types of welding? draw symbol of seam welding,xplain gas & electric arc welding.  
3. draw SFD for UDL on simply supported beam.  
4. what you learnt in MD? how shaft is designed? what is polar moment of inertia?  
5. diff. terminologies in gear? what is backlash error?  
6. material for blades of turbine, its properties.blades are bolted/welded? why?  
7. draw carnot cycle (PV, TS diag.). explain diff. processes.  
8. difference between otto & diesel cycle?  
9. GM interrupted us, tried to check my virtues. when I told him that I do believe in ETHICS. he asked some philosophical Questions n tried to change my mind bt I stood firm. I think, here I left an impact.  
10. heat treatment processes?annealing?normalising?  
11. loaded trust was given, draw FBD.  
12. what is equilibrium?  
13. slotting Vs shaping.  
14. honning process?  
15. again GM, why BEL? (its just like an honour for me as most of the applications are in defence, it will be more than just a job satisfaction, I replied honestly)  
16. in which department you would like to work? answer given was obviously diplomatic.  
17. scope & application of all types of bearings with justification.  
18. what you oil seals? why they you used?  
19. basic purpose of turbines? their working principle? turbine efficiency?  
20. draw joule/brayton cycle.  
21. 1st law of thermodynamics?  
22. what is relative humidity?  
23. asked abt my 1st placement in IT industry (ACCENTURE),why not going for it?  
24. finally they asked, y^(x-a)(x-b)(x-c).... (x-z)  =? I answered instantly as unity. eventually he smiled.  
we ended up with smile on each face.  
I was never so confident while being interviewed before, I literally had a ball there. really, it was a 'my day'. they selected me from 7 shortlisted mech students & other 2 from ETC.  
  
I wish you all d best, just do believe in yourself, success will be yours.