1.1 Determine the workforce and production schedule based on a chase policy that meet the forecasted demand at minimum total cost

Chase Production	Jan	Feb	March	April	May	June	July	August	sep	oct	nov	dec
Demand(000)	1,000	1,100	1,300	1,500	1,800	2,200	2,500	2,400	2,000	1,600	1,200	800
Production												
Regular	1000	1000	1050	1250	1450	1450	1450	1450	1450	1350	1000	800
Overtime		100	250	250	250	250	250	250	250	250	200	
Vendor					100	500	800	700	300	0		
Undertime												
Total Production	1000	1100	1300	1500	1800	2200	2500	2400	2000	1600	1200	800
closing inventory	0	0	0	0	0	0	0	0	0	0	0	0
Capacity												
Regular	160	160	160	160	160	160	160	160	160	160	160	160
Overtime												
Employees	20	20	20	21	25	29	29	29	29	29	27	20
Hire			1	4	4	0						
Layoff										2	7	
Total Employees	20	20	21	25	29	29	29	29	29	27	20	20
costs($000)												
Regular	150000	165000	195000	225000	270000	330000	3750000	360000	300000	240000	180000	120000
Overtime	0	20000	50000	50000	50000	50000	50000	50000	50000	50000	40000	0
Subcontract	0	0	0	0	40000	200000	320000	280000	120000	0	0	0
inventory/Holdong	0	0	0	0	0	0	0	0	0	0	0	0
Shipping	50000	55000	65000	75000	90000	110000	125000	120000	100000	80000	60000	40000
Hiring/Layoff	0	0	1000	4000	4000	0	0	0	0	1000	3500	0
Total Costs	200000	240000	311000	354000	454000	690000	870000	810000	570000	371000	283500	160000

The above fig shows the workforce and production Schedule based on a chase policy.

Also, I considered the given data which was used to predict the workforce and production schedule based on the chase policy.

1.2 Determine the workforce and production schedule based on a level policy that meet the forecasted demand at minimum total cost

Level Production	Jan	Feb	March	April	May	June	July	August	sep	oct	nov	dec
Demand(000)	1,000	1,100	1,300	1,500	1,800	2,200	2,500	2,400	2,000	1,600	1,200	800
Production												
Regular	1000	1250	1300	1300	1300	1300	1300	1300	1300	1150	1,000	1,000
Overtime	250.00%	250	250	250	250	250	250	250	250	250	250	250
Vendor							900	900	500	100		
Undertime												
Total Production (000)	1,250	1,500	1,550	1,550	1,550	1,550	2,450	2,450	2,050	1,500	1,250	1,250
closing inventory	250	650	900	950	700	50	0	50	100	0	50	500
Capacity												
Regular	160	160	160	160	160	160	160	160	160	160	160	160
Overtime												
Employees	20	20	25	26	26	26	26	26	26	23	20	20
Hire		5	1									
Layoff									3	3		
Total Employees	20	25	26	26	26	26	26	26	26	26	20	20
costs($000)												
Regular	187500	225000	232500	232500	232500	232500	367500	367500	307500	225000	187500	187500
Overtime	50000	50000	50000	50000	50000	50000	50000	50000	50000	50000	50000	50000
Subcontract	0	0	0	0	0	0	360000	360000	200000	40000	0	0
inventory	937500	2437500	3375000	3562500	2625000	187500	0	187500	375000	0	187500	187500
Shipping	50000	55000	65000	75000	90000	110000	125000	120000	100000	80000	60000	40000
Hiring/Layoff	0	5000	1000	0	0	0	0	0	1500	1500	0	0
Total Costs	1225000	2772500	3723500	3920000	2997500	580000	902500	1085000	1034000	396500	485000	2152500

The above data represents the workforce and production schedule based on level policy.

1.3 Determine the workforce and production schedule based on a mixed policy that meet the forecasted demand at minimum total cost

Mixed Production	Jan	Feb	March	April	May	June	July	August	sep	oct	nov	dec
Demand	1,000	1,100	1,300	1,500	1,800	2,200	2,500	2,400	2,000	1,600	1,200	800
Production												
Regular	1000	1100	1300	1450	1800	2000	2000	1700	1700	1600	1200	800
Overtime				50		250	250	250	150			
Vendor							200	600				
Undertime												
Total Production	1000	1100	1300	1500	1800	2250	2450	2550	1850	1600	1200	800
closing inventory	0	0	0	0	0	0	0	0	0	0	0	0
Capacity												
Regular	160	160	160	160	160	160	160	160	160	160	160	160
Overtime												
Employees	20	20	22	26	29	36	40	40	34	34	32	24
Hire		2	4	3	7	4						
Layoff								6		2	8	
Total Employees	20	22	26	29	36	40	40	46	34	32	24	24
costs($000)												
Regular	150000	165000	195000	225000	270000	337500	367500	382500	277500	240000	180000	120000
Overtime	0	0	0	10000	0	50000	50000	50000	30000	0	0	0
Subcontract	0	0	0	0	0	0	80000	240000	0	0	0	0
inventory/Holdong	0	0	0	0	0	187500	0	562500	0	0	0	0
Shipping	50000	55000	65000	75000	90000	110000	125000	120000	100000	80000	60000	40000
Hiring/Layoff	0	2000	4000	3000	7000	4000	0	3000	0	1000	4000	0
Total Costs	200000	222000	264000	313000	367000	689000	622500	1358000	407500	321000	244000	160000

The above data represents the workforce and production schedule based on the mixed policy which meets the forecasted demand at minimum cost.

Present a comparison between the three plans and recommend the most attractive option based on minimizing total costs.

	Chase Production	Level Production	Mixed Production
Total Production	19400	19900	19400
Total Employees	298	293	373
Total Costs	5313500	21274000	5168000

I would recommend the best option would be level production based on the cost and no of employees has the maximum production.