

V.S.B. ENGINEERING COLLEGE, KARUR

Department of Mechanical Engineering

Academic Year: 2018-2019 (EVEN Semester)

Assignment

Advanced IC Engines

Sl. No.	Reg. No.	Name of the Student	Assignment Topics
1	922515114101	Rajarajasozhan H	Describe the major functions of the following reciprocating engine components: piston, connecting rod, crankshaft, cams and camshaft, valves, intake and exhaust manifolds.
2	922515114102	Rajeshkumar D	Suggest reasons why multicylinder engines prove more attractive than single-cylinder engines once the total engine displaced volume exceeds a few hundred cubic centimeters.
3	922515114103	Raj Kumar G	Explain why the brake mean effective pressure of a naturally aspirated diesel engine is lower than that of a naturally aspirated spark-ignition engine. Explain why the bmep is lower at the maximum rated power for a given engine than the bmep at the maximum torque
4	922515114104	Raj Kumar S	Describe the impact on air flow, maximum torque, and maximum power of changing a spark-ignition engine cylinder head from 2 valves per cylinder to 4 valves (2 inlet and 2 exhaust) per cylinder.
5	922515114105	Ramesh E	Write short notes about Stratified charge Engine.
6	922515114106	Ranjith P	What are the latest innovations in biofuels?. Explain the process of extraction of biofuels.
7	922515114107	Ranjith S	Explain the pyrolysis technique used in extraction of biofuel.
8	922515114108	Rathina Prakash S	Explain the production, storage and application of hydrogen as fuel cells in automobiles.
9	922515114109	Sabarish R	In the reciprocating engine, during the power or expansion stroke, the gas pressure force acting on the piston is transmitted to the crankshaft via the connecting rod.

			List the forces acting on the piston during this part of the operating cycle. Show the direction of the forces acting on the piston on a sketch of the piston, cylinder, connecting rod, crank arrangement. Write out the force balance for the piston (a) along the cylinder axis and (b) transverse to the cylinder axis in the plane containing the connecting rod. (You are not asked to manipulate or solve these equations.)
10	922515114111	Sanjeevi K	Explain electronic fuel injector and its principle of operation .working, construction and application of temperature sensor.
11	922515114112	Sankar R	Describe any one engine sensor used in modern day automobiles
12	922515114113	Sasi Kumar K	Using pressure crank angle diagram (P- Θ) explains the different stages of normal combustion in a SI engine. Also explain how abnormal combustion takes place using the same P- Θ diagram.
13	922515114115	Satheesh Kumar C	Explain briefly the lean flame region with neat sketch.
14	922515114117	Sathish T	What is a thermal converter and how it helps to reduce the emission from the engines?
15	922515114118	Sathish V	Draw the combustion emission characteristics about various types of alternate fuels.
16	922515114119	Sathiskumar P	With a schematic diagram, describe in detail the chemiluminescence method of measuring oxides of nitrogen.
17	922515114120	Sedhupathy L	Explain the exergy analysis of efficiency improvement through heat reduction in IC engines.
18	922515114121	Selvakumar C	Write the simulation analysis of IC engines actuated by air system.
19	922515114122	Selvakumar S	What are the emission norms followed in India. Compare BS III and BS IV
20	922515114123	Senthil Kumar S	Explain the latest innovations in hybrid engines.
21	922515114124	Shankar B	Describe briefly what occurs when a spark-ignition engine "knocks." (b) SI engine knock is primarily a problem at wide-open throttle and lower engine speeds. Explain why this is the case.

22	922515114125	Shankar S	In a knocking engine, the crank angle at which auto ignition occurs and the magnitude of the pressure oscillations which result vary substantially, cycle-by-cycle. Suggest reasons why this happens.
23	922515114126	Shanmuga Priyan S	Write the Trends of Syngas as a Fuel in Internal Combustion Engines
24	922515114127	Shasti Aswin R	Explain about the six strokes Engine with neat sketch.
25	922515114129	Sivaprakash G	Explain in detail about onboard diagnostics of vehicles.
26	922515114130	Sivaprasath K	Write in detail about Combustion Parameters and Emission Characteristics of CNG Fueled HCCI Engine
27	922515114131	Srinivasan R	Two spark ignition petrol engines having the same swept volume and compression ratio are running at the same speed with wide open throttles . One engine operates on the two-stroke cycle and the other on the four-stroke cycle. State with reasons: (i) Which has the greater power Output? (ii) Which has the higher efficiency?
28	922515114132	Surentharan B	Explain the latest innovations in CNG Vehicles.
29	922515114133	Suresh P	How emissions can be reduced in diesel engines. Give some suggestions for it.
30	922515114134	Suryakumar D	What are the modifications that can be made in diesel engines.
31	922515114135	Surya Prakash V	Explain about air breathing engines.
32	922515114136	Swetha R	You are designing a four-stroke cycle diesel engine to provide a brake power of 300kW naturally aspirated at its maximum rated speed. Based on typical values for brake mean effective pressure and maximum mean piston speed, estimate the required engine displacement, and the bore and stroke for sensible cylinder geometry and number of engine cylinders. What is the maximum rated engine speed (rev/min) for your design? What would

			be the brake torque (N-m) and the fuel flow rate (g/h) at this maximum speed? Assume a maximum mean piston speed of 12 m/s is typical of good engine designs.
33	922515114137	Udhayakumar K	Explain why constant-volume combustion gives a higher indicated fuel conversion efficiency than constant-pressure combustion for the same compression ratio.
34	922515114138	Vajahath Rasool S	Explain in detail about CRDI Engines.
35	922515114139	Vasantha Kumar M	How fault diagnostics is done on IC engines?.
36	922515114140	Vellingiri S	Design and Implementation of the Control System of an Internal Combustion Engine Test Unit
37	922515114141	Venkatesh S	Explain in detail about selective catalytic Reduction technique.
38	922515114142	Vignesh M	How smoke and combustion will have its effect on the engine performance?
39	922515114143	Vignesh M N	What are the latest innovations in carburetors?
40	922515114144	Vignesh S	What are the latest modifications in combustion chamber design?
41	922515114146	Vijayan P	Write in detail about any four IC engine cycles.
42	922515114147	Viknesh M	How catalytic converters have effect on emissions?
43	922515114148	Vinodhini R	For four-stroke cycle engines, the inlet and exhaust valve opening and closing crank angles are typically: IVO 15" BTC; IVC 50" ABC; EVO 55" BBC; EVC 10' ATC. Explain why these valve timings improve engine breathing relative to valve opening and closing at the beginnings and ends of the intake and exhaust strokes. Are there additional design issues that are important?
44	922515114149	Vinoth G	Explain the applications of Atkinson and Ericson cycles.
45	922515114150	Yuvaraj S	In a knocking engine, the crank angle at which auto ignition occurs and the magnitude of the pressure oscillations which result vary substantially, cycle-by-cycle. Suggest reasons why this happens.
46	922515114318	Rahul A	Write the Trends of Syngas as a Fuel in Internal

			Combustion Engines
47	922515114320	Saran Kumar P	Explain about the six strokes Engine with neat sketch.
48	922515114322	Suresh Kumar T	Explain in detail about onboard diagnostics of vehicles.
49	922515114324	Venkateshwaran V	Write in detail about Combustion Parameters and Emission Characteristics of CNG Fueled HCCI Engine
50	922515114325	Vignesh Narayan R	Two spark ignition petrol engines having the same swept volume and compression ratio are running at the same speed with wide open throttles . One engine operates on the two-stroke cycle and the other on the four-stroke cycle. State with reasons: (i) Which has the greater power Output? (ii) Which has the higher efficiency?
51	922515114326	Vivek P	Using pressure crank angle diagram (P- θ) explain the different stages of normal combustion in a SI engine. Also explain how abnormal combustion takes place using the same P- θ diagram.
52	922515114701	Gokul Krishnan	Explain briefly the lean flame region with neat sketch.

V.S.B. ENGINEERING COLLEGE, KARUR**Department of Mechanical Engineering****Academic Year: 2018-2019 (EVEN Semester)****Assignment
Engineering Economics**

S.No	Register No.	Name of the Student	Topic Details
1.	922515114006	Arunadevi M	Illustrate the effect of price on demand and supply; illustrate with the help of a diagram.
2.	922515114052	Kavin C	Discuss the flow of goods, services, resources and money payments in a simple economy with the help of a suitable diagram.
3.	922515114053	Kishore Thangam M	Discuss the factors which influence demand and supply.
4.	922515114054	Kodiyarasu K	Clearly explain the method of deriving the selling price of a product.
5.	922515114055	Kokula Sandhiya P	Define economic life of an asset with examples
6.	922515114056	Krishnan R	What are the types of Replacement policies? Explain in detail
7.	922515114057	Lezlin S K	What are the types of replacement problem? Explain in detail
8.	922515114058	Linkesh Kumar L	Discuss the defender challenger concept in replacement.
9.	922515114059	Logeshwaran R	What is the optimum replacement plan? Explain in detail
10.	922515114060	Mac Milen T J	Distinguish between breakdown maintenance and preventive maintenance.
11.	922515114061	Makeshwaran T	Describe the Present Worth Analysis
12.	922515114063	Manikandan R	Illustrate the Annual Worth Analysis
13.	922515114064	Manimaran N	Elaborate the Rate of Return Analysis

14.	922515114065	Manoj T	Enumerate the time delay concept
15.	922515114066	Manoj Kumar.G	Explain the Benefit/Cost Analysis
16.	922515114067	Manojkumar N	Describe the Effects of Inflation
17.	922515114068	Manojkumar R	Explain in detail about Depreciation Methods
18.	922515114069	Manokannan K	Differentiate the Contracts, interest relationships
19.	922515114070	Mithun M	Explain the following topics Economic equivalence, retirement plans
20.	922515114071	Mohamed Zakir Hussain	Describe the concepts of Inflation
21.	922515114072	Mohammed Bagrudeen	Explain the Financing of new enterprises
22.	922515114073	Mohan Kumar R	Write short notes on Stock ownership, stock market, annual reports
23.	922515114074	Mohanraj L	Explain the following Contracts, interest relationships
24.	922515114075	Mowleedharan K	Describe the Effects of depreciation
25.	922515114076	Mukeshkumar M	Explain the Effects of taxes
26.	922515114078	Muthusamy R	Describe the Effects of inflation
27.	922515114079	Nanthakumar V	Calculate the Evaluation of economic models for engineering
28.	922515114080	Naresh S	Explain in details about the comparison of economic models for engineering
29.	922515114081	Naveen D	Describe the Annual cash flow analysis
30.	922515114082	Naveen M	What are the various methods available in decision making in selection of Alternative in economic analysis of investment?
31.	922515114083	Naveen R	Define Annual equivalent method(Revenue dominated cash flow diagram). Explain in detail.
32.	922515114084	Naveen S	Define Annual equivalent method(cost

			dominated cash flow diagram). Explain in detail.
33.	922515114085	Naveen S	Define Declining balance method of depreciation. Explain in detail.
34.	922515114086	Naveena R	Define Sum of the year-digits method of depreciation. Explain in detail.
35.	922515114087	Naveenkumar S	Illustrate sinking fund method of depreciation. Explain in detail.
36.	922515114088	Naveenprasanth S	Define Service output method of depreciation. Explain in detail.
37.	922515114089	Niranjan M	Write down the techniques for comparing the worthiness of the project.
38.	922515114090	Nithesh M	Define present worth method(Revenue dominated cash flow diagram)
39.	922515114091	Norul Hasan M	Illustrate future worth method(Revenue dominated cash flow diagram)
40.	922515114092	Parivarthini S	Define time value of money. Explain in detail.
41.	922515114093	Pavithran S	Illustrate the single –payment compound amount method.
42.	922515114094	Periyasamy R	Define single payment present worth factor.
43.	922515114095	Prabhu Ram P	Illustrate equal payment series sinking fund factor method?
44.	922515114096	Prakash C	Explain in detail about flow in an economy.
45.	922515114098	Praveenkumar M	Explain the concept of law of supply and demand with suitable example.
46.	922515114099	Praveenkumar R	Briefly explain about element of cost and its classification.
47.	922515114100	Praveenkumar S	Explain the concept of break even analysis with clear diagram.
48.	922515114309	Inbaraj K	Briefly explain about process planning and its various types.
49.	922515114310	Jayachandran C	Write any four goals of economy.

50.	922515114311	Lalithkumar S	Explain law of supply and demand.
51.	922515114312	Mahendren R	Write about factors in fluency demand.
52.	922515114313	Manikandan C	Write about factors in fluency supply.
53.	922515114314	Manoj Kumar R	Explain in details about criteria for make or buy decision and its approaches?
54.	922515114315	Nelson Philip S	Explain in details about the finding economic life of an asset.
55.	922515114316	Prabhakaran C	Illustrate the Capital recovery with return
56.	922515114317	Purusothaman C	Explain the Simple probabilistic model for assets which fail completely.

V.S.B. ENGINEERING COLLEGE, KARUR

Department of Mechanical Engineering

Academic Year: 2018-2019 (EVEN Semester)

Assignment

Production Planning and Control

Sl. No.	Reg. No.	Name of the Student	Assignment Topics
1	922515114101	Rajarajasozhan H	What do you understand by production planning and control? Discuss its main elements.
2	922515114102	Rajeshkumar D	Explain different types of production systems. Differentiate between them.
3	922515114103	Raj Kumar G	Explain in detail the production aspects of product design.
4	922515114104	Raj Kumar S	Write detailed notes on: i) Standardisation ii) Simplification iii) Specialisation
5	922515114105	Ramesh E	Give detailed account of the various factors considered while designing a product.
6	922515114106	Ranjith P	Discuss in detail: i) Breakeven Analysis ii) Samuel Eilon model
7	922515114107	Ranjith S	Explain the characteristic features of (i) batch production and (ii) mass production system.
8	922515114108	Rathina Prakash S	a. Discuss the benefits of PPC. b. Differentiate between product design and product development. c. A manufacturer sells an item for Rs. 13 per unit. He incurs a fixed cost of Rs. 60,000 and a variable cost of Rs. 8 unit. Find the break even production quantity and also the no. of units to be produced to get a profit of Rs. 12000.
9	922515114109	Sabarish R	Explain the different aspects of product design and development.
10	922515114111	Sanjeevi K	a. What are the objectives of product analysis? b. List the various factors that influence the product design.
11	922515114112	Sankar R	Explain briefly the various steps involved in conducting the work study.
12	922515114113	Sasi Kumar K	State and explain in brief the steps involved in conducting the method study procedure.
13	922515114115	Satheesh Kumar C	Briefly explain the various techniques of work measurement.
14	922515114117	Sathish T	Define time study. List down the various steps in

			conducting a stopwatch time study.
15	922515114118	Sathish V	Write short notes on: a) Micro motion study b) Memo motion study
16	922515114119	Sathiskumar P	Briefly explain the different tools and techniques used in the recording phase of method study.
17	922515114120	Sedhupathy L	Explain the procedural steps involved in the work sampling study and illustrate how work sampling is used for the computation of standard time for an operation which involves both manual and machine elements.
18	922515114121	Selvakumar C	Discuss two types of each of the charts and diagrams used in the recoding phase of the method study.
19	922515114122	Selvakumar S	List the principles of motion economy as applied to the use of human body, arrangement of workplace and design of tools and equipment.
20	922515114123	Senthil Kumar S	a. Write short notes on (i) Symbols of process chart (ii) Therbligs b. Distinguish between cumulative timing and fly back timing.
21	922515114124	Shankar B	What is value analysis? Describe the basic steps involved in the value analysis.
22	922515114125	Shankar S	Explain the importance of process planning with reference to production control. Discuss the activities in process planning.
23	922515114126	Shanmuga Priyan S	a. Compare and contrast the manual process planning with CAPP. b. Explain the steps involved in product planning.
24	922515114127	Shasti Aswin R	What is meant by machine loading? Also enumerate the various methods to the cycle time to a minimum.
25	922515114129	Sivaprakash G	What do you mean by machine balancing? Also explain the effect of balancing on number of machines required with an illustration.
26	922515114130	Sivaprasath K	Write short notes on analysis of process capacities in a multiproduct system.
27	922515114131	Srinivasan R	Write short notes on: a) Quantity determination in batch production b) Analysis of process capability in a multi-product system
28	922515114132	Surentaran B	A gear manufacturer has gear shaper and gear hobbers. The gear can be processed on gear shaper as well as gear hobber. The following is given. Which of the two machines will you choose to do the job if the order quantity is (i) 1000 numbers and order is unlikely to

			<p>repeat and (ii) 1000 numbers and the order is likely to repeat for 3 years?</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;"></th> <th style="width: 20%; text-align: center;">Gear shaper</th> <th style="width: 20%; text-align: center;">Gear hobber</th> </tr> </thead> <tbody> <tr> <td>Machine time per piece (min)</td> <td style="text-align: center;">12</td> <td style="text-align: center;">04</td> </tr> <tr> <td>Machine cost per hour</td> <td style="text-align: center;">45</td> <td style="text-align: center;">120</td> </tr> <tr> <td>Set up time(min)</td> <td style="text-align: center;">60</td> <td style="text-align: center;">90</td> </tr> <tr> <td>Tooling up cost (Rs)</td> <td style="text-align: center;">400</td> <td style="text-align: center;">200</td> </tr> </tbody> </table>		Gear shaper	Gear hobber	Machine time per piece (min)	12	04	Machine cost per hour	45	120	Set up time(min)	60	90	Tooling up cost (Rs)	400	200
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29	922515114133	Suresh P	What is meant by product planning? Explain, in detail, the various steps involved in the product planning process.															
30	922515114134	Suryakumar D	<p>a. Explain the various phases of value engineering.</p> <p>b. What are commandants of value analysis?</p>															
31	922515114135	Surya Prakash V	Explain the procedure by which scheduling jobs in machines can be done with suitable example.															
32	922515114136	Swetha R	<p>Write short notes on:</p> <p>a) Aggregate run-out method of batch scheduling.</p> <p>b) Line of balance method</p>															
33	922515114137	Udhayakumar K	Discuss the concepts, inputs, characteristics, working, outputs, and benefits of MRP.															
34	922515114138	Vajahath Rasool S	What are the functions of dispatching? Explain the various documents raised by dispatching department.															
35	922515114139	Vasantha Kumar M	What is progressing? Explain its function and recording.															
36	922515114140	Vellingiri S	<p>a. Describe the information flow for master scheduling.</p> <p>b. With an example explain Gantt chart.</p>															
37	922515114141	Venkatesh S	Discuss in detail about the various factors that affect scheduling. Explain any one technique used in loading and scheduling process.															
38	922515114142	Vignesh M	<p>a. Explain the common methods adopted in industries for progress reporting.</p> <p>b. Explain the priority rules used for job sequencing.</p>															
39	922515114143	Vignesh M N	Discuss the scheduling approaches followed in job and flow shops along with their merits and demerits.															
40	922515114144	Vignesh S	<p>a. What are the common causes for delay? How can they be avoided? Explain.</p> <p>b. Explain the various techniques adopted for aligning completion time and due dates.</p>															
41	922515114146	Vijayan P	What do you understand by inventory control? Explain the purpose of maintaining inventory in any production unit.															

42	922515114147	Viknesh M	What is EOQ? Derive the expression for EOQ when the demand of the item is uniform, the production rate is infinite and no stock-outs are allowed.
43	922515114148	Vinodhini R	a) Explain the terms: lead time, stock out, buffer stock, inventory carrying cost. b) Distinguish between in-process inventory, safety stock inventory and seasonal inventory.
44	922515114149	Vinoth G	Describe the fixed period quantity inventory model? Also compare and contrast P-system with Q- System.
45	922515114150	Yuvaraj S	What is selective control of inventory and explain various selective control techniques?.
46	922515114318	Rahul A	What is ABC analysis? Explain its significance in the inventory control with suitable example.
47	922515114320	Saran Kumar P	Discuss in detail: a) JIT b) ERP
48	922515114322	Suresh Kumar T	Discuss in detail about the P and Q systems of inventory replenishment along with their merits and demerits.
49	922515114324	Venkateshwaran V	Write short notes on (i) ABC analysis (ii) Computer integrated production planning systems (iii) Manufacturing resource planning (iv) Enterprise resource planning.
50	922515114325	Vignesh Narayan R	a.Explain the various costs associated with the inventory control with suitable examples. b.A manufacturer has to supply his customers 3600 units of his product per year. Shortages are not permitted. Inventory carrying cost amounts Rs. 12 per unit per annum. The set up cost per run is Rs. 80. Find (i) Economic order quantity (ii) Optimum number of orders per annum (iii) Average annual inventory cost (iv) Optimum period of supply per optimum order.
51	922515114326	Vivek P	a. What are the objectives of product analysis? b. List the various factors that influence the product design.
52	922515114701	Gokul Krishnan.T	Briefly explain the different tools and techniques used in the recording phase of method study.