

**VINAYAKA MISSIONS RESEARCH FOUNDATION  
(Deemed to be University)**

**M.E- DEGREE EXAMINATIONS – APR/MAY-2019**

**MANUFACTURING ENGINEERING**

**First Semester**

**NUMERICAL METHODS AND GRAPH THEORY**

(Candidates admitted under 2016 Regulations-CBCS)

Time: Three hours

Maximum:100Marks

Answer **ALL** questions

**PART – A (10 x 2 = 20 marks)**

1. Whether Gauss-Jacobi method will work for all system of equation?  
Justify?
2. Explain the direct methods of solving simultaneous linear equation?
3. Write down the Simpson's  $\frac{3}{8}$  Rule
4. Evaluate  $\int_1^2 \frac{1}{1+x^2} dx$  using Gaussian three-point formula
5. Find the value of  $y(1.1)$  using Runge-Kutta method of fourth order, given  
that  $\frac{dy}{dx} = y^2 + xy; y(1) = 1$
6. State the assumption made when we use Adam's Bashforth Predictor-Corrector formula to solve  $y' = f(x, y)$  numerically.
7. Define the terms (i) Self loop (ii) Degree of a graph with examples.
8. Define the term tour of a graph, Eulerian graph.
9. State Kruskal's Algorithm.
10. State the conservation condition

**PART – B (5 x 16 = 80 marks)**

11. a) Solve the system of equation by Gauss-Jordan method

$$x - y + z = 1, -3x + 2y - 3z = -6, 2x - 5y + 4z = 5$$

(P.T.O)

**OR**

b) Using Gauss-Jordan method solve the following equations

$$10x + y + z = 12, 2x + 10y + z = 13, x + y + 5z = 7$$

12. a) Express 'y' as a polynomial in 'x' from the following data using Hermite's interpolating polynomial

$x$	0	1	2
$y$	1	3	21
$f'(x)$	0	3	36

**OR**

b) Fit the following four point by cubic splines

$i$	0	1	2	3
$x_i$	1	2	3	4
$y_i$	1	5	11	8

Use the end conditions  $y_0'' = y_3'' = 0$  Hence compute (i)  $y(1.5)$  and (ii)  $y'(2)$

13. a) Solve the equation  $\frac{dy}{dx} = 1 - y$ , given  $y(0) = 0$  using modified Euler's

method and tabulated the solutions at  $x = 0.1, 0.2$  and  $0.3$

**OR**

b) The differential equation  $\frac{dy}{dx} = y - x^2$  satisfied by

$$y(0) = 1, y(0.2) = 1.12186, y(0.4) = 1.46820, y(0.6) = 1.7379.$$

Compute the value of  $y(0.3) = 1.21$ . Calculate the value of  $y(0.8)$  by

Milne's predictor-corrector formula.

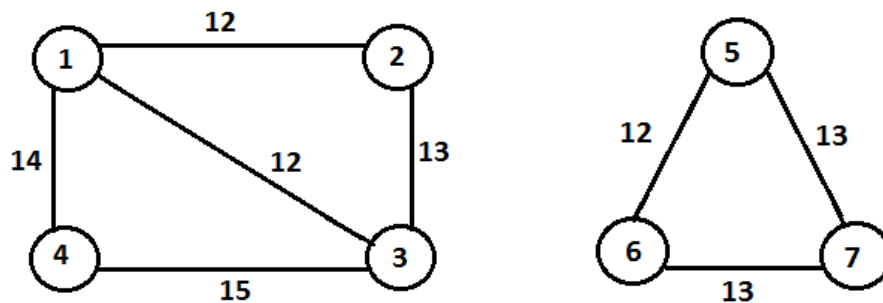
(P.T.O)

14. a) Show that a connected graph  $G$  is an Euler graph iff all the vertices of  $G$  are of even degree.

**OR**

- b) Prove that in a connected graph ' $G$ ' any minimal set of edges containing at least one branch of every spanning tree of  $G$  is a cut set.

15. a) Use prim's algorithm to show that the following network is not a connected graph



**OR**

- b) Prove that the Dijkstra's algorithm finds the SD from a fixed vertex  $v$  to any vertex  $i$  in the network, if there is a path from  $v$  to  $i$ .

\*\*\*\*\*

**VINAYAKA MISSIONS RESEARCH FOUNDATION**  
**(Deemed to be University)**  
**M.E -DEGREE EXAMINATIONS- APR/MAY - 2019**  
**MANUFACTURING ENGINEERING**  
**FIRST SEMESTER**  
**ADVANCED MATERIALS TECHNOLOGY**  
(Candidates admitted under 2016 Regulations-CBCS)

Time : Three Hours

Maximum Marks:100 Marks

Answer **ALL** questions**Part-A (10 x 2 =20 Marks)**

- 1 Define the term twinning.
- 2 Write about crystalline materials.
- 3 List out the different types of fractures.
- 4 What is meant by ductile fracture?
- 5 List out the technological properties of metals.
- 6 “Overall costs of using a material should be looked at and not just the cost of the material used” justify this statement.
- 7 What are alloy steels? How they are classified?
- 8 Write down the composition of maraging steels.
- 9 List out the various fiber materials used in fiber reinforced composites.
- 10 Define the term unsaturated molecule, state its significance in plastics.

**PART-B (5 x 16 = 80 )**

- 11 a. Explain in detail about viscoelasticity with graph  
**OR**  
b. Discuss briefly about the stress strain curves for polycrystalline materials.
- 12 a. Explain the mechanism of fatigue fracture in detail.  
**OR**  
b. What are the variables that affect the fatigue life?
- 13 a. What is the classification of the properties of engineering materials?  
**OR**  
b. Explain in detail the various applications of brasses with its composition.
- 14 a. Explain about nanophase materials in detail.  
**OR**  
b. Briefly discuss about HSLA steels.
- 15 a. Discuss about the polymer processing in detail.  
**OR**  
b. Explain injection moulding method for polymer forming operation

\*\*\*\*\*

**VINAYAKA MISSIONS RESEARCH FOUNDATION**  
**(Deemed to be University)**  
**M.E -DEGREE EXAMINATIONS- APR/MAY - 2019**  
**MANUFACTURING ENGINEERING**  
**FIRST SEMESTER**  
**AUTOMATED COMPUTER INTEGRATED MANUFACTURING**  
**SYSTEMS**

(Candidates admitted under 2016 Regulations-CBCS)

Time : Three Hours

Maximum Marks:100 Marks

Answer **ALL** questions  
**Part-A (10 x 2 =20 Marks)**

- 1 What is Open System?
- 2 What is product?
- 3 What are three control functions in APL?
- 4 What are the two basic types of AGVs steering control?
- 5 Write any two Manufacturing attributes?
- 6 Classify the GT manufacturing cells.
- 7 List any four advantages of process planning.
- 8 List the disadvantages of manual approach in CAPP.
- 9 Describe shortly about the bar code printers.
- 10 Write short notes on steady state optimal control.

**PART-B (5 x 16 = 80 )**

- 11 a. Explain briefly CIM as concept and technology.  
**OR**  
b. Write explanatory notes on the seven layers of OSI model.
- 12 a. Explain the different types of Load Transfer of AGVs.  
**OR**  
b. Explain the fundamentals of automated production lines.
- 13 a. Explain the MICLASS system of parts classification and coding.  
**OR**  
b. Discuss in detail about the Factory data collection system.
- 14 a. Explain the role of process planning in CAD/CAM integration.  
**OR**  
b. Explain the advantages of CAPP.
- 15 a. Write detailed notes on Contact bar code readers.  
**OR**  
b. Explain in detail about the Multilevel scanning.

\*\*\*\*\*

**VINAYAKA MISSIONS RESEARCH FOUNDATION**  
**(Deemed to be University)**  
**M.E -DEGREE EXAMINATIONS- APR/MAY - 2019**  
**MANUFACTURING ENGINEERING**  
**FIRST/SECOND SEMESTER**  
**ADVANCED MANUFACTURING PROCESSES**  
(Candidates admitted under 2016 Regulations-CBCS)

Time : Three Hours

Maximum Marks:100 Marks

Answer **ALL** questions**Part-A (10 x 2 =20 Marks)**

- 1 List out the limitations of water jet machining.
- 2 What are the Disadvantages of USM?
- 3 Which material is used to make the grinding wheel?
- 4 Explain electrode wear.
- 5 What are the metals that can't be machined by plasma arc machining?
- 6 Write the advantage of EBM?
- 7 Define film purification
- 8 Define the Etching process.
- 9 Define MOM Technology.
- 10 List different types of moulding.

**PART-B (5 x 16 = 80 )**

- 11 a. (i) Explain the principle of USM with neat diagram.  
(ii) List the commonly used abrasive powder for the tooling of USM and their Properties.

**OR**

- b. (i) Discuss the influence process parameters and applications of USM [10]  
(ii) Give a note on the various types of transducers.[6]

- 12 a. (a) What are the various process parameters which influence the MRR?  
(b) What materials are used for Electrodes? Mention the relative advantages.

**OR**

- b. (a) Compare Electro Chemical Machining with a single point machining and describe the differences.  
(b) What are the limitations and industrial applications of Electro Chemical Machining?

- 13 a. (i) Explain the principle of LBM with neat sketch  
(ii) List out the advantage and limitation of LBM process

**OR**

- b. (i) Explain the principles and elements of EBM, also how the work table is protected from getting damaged by electron beam.  
(ii) Discuss how the process variables influence MRR, HAZ and pattern generation.

- 14 a. Explain the Process of Film Purification?

**OR**

**(P.T.O)**

**2**

- b. Write Short notes on (1) bulk machining (2) hardening
- 15 a. Write short notes on 1.PCB board 2.MOM technology

**OR**

- b. What is meant by micro fabrication technology and its advantages and its disadvantages?

\*\*\*\*\*

Sl.No. E-602

**VINAYAKA MISSIONS RESEARCH FOUNDATION**  
**(Deemed to be University)**  
**M.E -DEGREE EXAMINATIONS- APR/MAY - 2019**  
**MANUFACTURING ENGINEERING**  
**THIRD SEMESTER**  
**ELECTIVE - FLUID POWER AUTOMATION**

(Candidates admitted under 2016 Regulations-CBCS)

Time : Three Hours

Maximum Marks:100 Marks

Answer **ALL** questions

**Part-A (10 x 2 =20 Marks)**

- 1 What is the basic law that is important in applying fluid power, and what is its significance?
- 2 Draw the hydraulic symbol for the following. (i) Unloading valve. (ii) Counter balancing valve
- 3 List the advantages of non-positive displacement pumps.
- 4 What is cylinder cushion? What is its purpose?
- 5 What is meant by a 4/3 DC valve?
- 6 What is the function of sequencing valve?
- 7 Under what condition a hydraulic motor braking circuit system desirable?
- 8 What is the use of truth table in logic devices?
- 9 How does limit switch differ from a pushbutton switch.
- 10 What is meant by the term 'contact sensing'?

**PART-B (5 x 16 = 80 )**

- 11 a. Comment on the difference between using pneumatic fluid power and hydraulic fluid power.

**OR**

- b. Describe the various pneumatic symbols.

- 12 a. Explain the working of piston pumps and discharge rates (swash plate type).

**OR**

b.

A punching press circuit with five stations operated by five parallel cylinders connected to an intensifier. The cylinders are single acting cylinders with spring return and the piston diameter of the cylinder is 140mm. The cylinders are used for punching 10mm diameter holes on sheet metal 1.5mm thickness. The ultimate shear strength of sheet material is 300MN/m<sup>2</sup>. The punching stroke requires 10mm travel. If the intensification ratio is 20 and the stroke of the intensifier is 1.3m. Determine the (a) Pressure of oil from pump. (b) The diameter of small and large cylinder of intensifier.

- 13 a. How does a pressure relief valve differ from pressure reducing valve? How does a pressure reducing valve work? Explain with sketch.

**OR**

- b. Sketch and explain the working of sequencing valve with a application circuit.

(P.T.O)



14 a. Explain with neat sketch of the step counter and its principle?

**OR**

b. What is a functional diagram? How does it differ from a circuit diagram? What are the advantages of such a diagram while trouble-shooting?

15 a. Explain with neat sketch the electrical control of a regenerative cycle?

**OR**

b. Explain with neat block diagram air filter control circuit for double acting cylinder.

\*\*\*\*\*

**VINAYAKA MISSIONS RESEARCH FOUNDATION**  
**(Deemed to be University)**  
**M.E -DEGREE EXAMINATIONS- APR/MAY - 2019**  
**MANUFACTURING ENGINEERING**  
**SECOND SEMESTER**  
**ELECTIVE: ADVANCES IN CASTING AND WELDING PROCESSES**

(Candidates admitted under 2016 Regulations-CBCS)

Time : Three Hours

Maximum Marks:100 Marks

Answer **ALL** questions  
**Part-A (10 x 2 =20 Marks)**

- 1 What are the points that a designer should consider in going for a casting process?
- 2 Define choke area in castings.
- 3 Mention some important alloys of copper and their applications.
- 4 Why the shift will occur?
- 5 List the factors to be considered in the choice of metal melting furnace?
- 6 Writ down the advantages and disadvantages of pressure die casting?
- 7 Define weld metal solidification.
- 8 Define welding joint.
- 9 Why is some plasma system called transfer arc welding?
- 10 What is an inert gas?

**PART-B (5 x 16 = 80 )**

- 11 a. Explain the procedure for calculation of dimensions of a gating system. Illustrate with an example.  

**OR**

 b. Explain the parameters which cause the pouring time of a given casting to vary.
- 12 a. How does mold design affect the quality of castings (with particular reference to shrinkage effects)? Explain with illustrations.  

**OR**

 b. What are the factors that affect the quality demands of S.G iron? Explain.
- 13 a. Explain briefly the process of continuous casting. In what way is it superior to rolling process?  

**OR**

 b. Pollution control is an essential part of foundry layout design. Explain how is it achieved?
- 14 a. Explain methods to reduce welding stresses.  

**OR**

 b. Briefly explain welding characteristics of magnesium.
- 15 a. Briefly explain ultrasonic welding process.  

**OR**

 b. With a suitable sketch explain the TIG welding process.

\*\*\*\*\*

**VINAYAKA MISSIONS RESEARCH FOUNDATION**  
**(Deemed to be University)**  
**M.E -DEGREE EXAMINATIONS- APR/MAY - 2019**  
**MANUFACTURING ENGINEERING**  
**FIFTH SEMESTER**  
**ELECTIVE - MANUFACTURING MANAGEMENT**  
(Candidates admitted under 2016 Regulations-CBCS)

Time : Three Hours

Maximum Marks:100 Marks

Answer **ALL** questions  
**Part-A (10 x 2 =20 Marks)**

- 1 What is meant by product layout ?
- 2 What are the disadvantages of selecting plant in urban area ?
- 3 State the advantages of work study.
- 4 Define method study.
- 5 Write the purpose of sales forecasting.
- 6 Define correlation analysis.
- 7 Write any two techniques used in network analysis.
- 8 Define event.
- 9 What are the types of motivation ?
- 10 Mention the various factors involved using motivational techniques.

**PART-B (5 x 16 = 80 )**

- 11 a. Explain the types of plant layout.  

**OR**

b. Explain the objectives of material handling process.
- 12 a. Explain the basic steps in time study.  

**OR**

b. Explain the various steps involved in ergonomics.
- 13 a. Explain the forecasting process.  

**OR**

b. Explain the basic elements sales forecasting technique.
- 14 a. Explain the scheduling procedure and techniques.  

**OR**

b. Explain about the process of PERT.
- 15 a. Explain the aims of personnel management.  

**OR**

b. Explain the functions of sales promotion.

\*\*\*\*\*

**VINAYAKA MISSIONS RESEARCH FOUNDATION**  
**(Deemed to be University)**  
**M.E -DEGREE EXAMINATIONS- APR/MAY - 2019**  
**MANUFACTURING ENGINEERING**  
**SECOND SEMESTER**  
**ROBOT DESIGN & PROGRAMMING**  
(Candidates admitted under 2016 Regulations-CBCS)

Time : Three Hours

Maximum Marks:100 Marks

Answer **ALL** questions

**Part-A (10 x 2 =20 Marks)**

- 1 What are the specifications of robots.
- 2 Write the classifications of robots.
- 3 Differentiate kinematics and dynamics.
- 4 What are link velocities?
- 5 Define polynomial trajectory planning.
- 6 What are the industrial uses of robots.
- 7 Name the types of programming.
- 8 What is PID control scheme?
- 9 What is smoothing?
- 10 Write few applications of robots.

**PART-B (5 x 16 = 80 )**

- 11 a. Briefly explain the components of a robot.  

**OR**
- b. Write few functions of industrial robots.
- 12 a. Write the applications of robots in industries.  

**OR**
- b. Explain in detail about the functions of robot arm
- 13 a. With example explain the uses of robots in and industry.  

**OR**
- b. Draw and explain the components of robot arm.
- 14 a. Write brief notes on robot programming.  

**OR**
- b. With example explain a sample robot program.
- 15 a. Write notes on robot sensors in manufacturing.  

**OR**
- b. Write a case study on robot sensors used in industries.

\*\*\*\*\*

**VINAYAKA MISSIONS RESEARCH FOUNDATION**  
**(Deemed to be University)**  
**M.E -DEGREE EXAMINATIONS- APR/MAY - 2019**  
**MANUFACTURING ENGINEERING**  
**SECOND SEMESTER**  
**MANUFACTURING METROLOGY AND QUALITY CONTROL**  
(Candidates admitted under 2016 Regulations-CBCS)

Time : Three Hours

Maximum Marks:100 Marks

Answer **ALL** questions  
**Part-A (10 x 2 =20 Marks)**

- 1 What is interferometry?
- 2 Write the uses of laser doppler anemometry.
- 3 Define laser gauging.
- 4 Write laser dimensional measurement system.
- 5 Define probe sensors.
- 6 What is probe sensor?
- 7 Applications of vision analysis.
- 8 Define spatial feature.
- 9 What is called as poya yoke?
- 10 What is computer controlled system?

**PART-B (5 x 16 = 80 )**

- 11 a. Explain briefly types of interferometry and its applications.  
**OR**  
b. Explain laser interferometry in manufacturing
- 12 a. Explain briefly high inertia laser techniques with suitable example.  
**OR**  
b. Describe the classification of optical scanning system
- 13 a. Define co-ordinate metrology and its applications.  
**OR**  
b. Explain about the displacement devices
- 14 a. Explain briefly about image analysis techniques.  
**OR**  
b. Explain the digital image processing.
- 15 a. Explain briefly poya yoke and its applications.  
**OR**  
b. Explain briefly six sigma concepts And its applications.

\*\*\*\*\*

**VINAYAKA MISSIONS RESEARCH FOUNDATION**  
**(Deemed to be University)**  
**M.E -DEGREE EXAMINATIONS- APR/MAY - 2019**  
**MANUFACTURING ENGINEERING**  
**SECOND SEMESTER**  
**METAL FORMING PROCESSES**

(Candidates admitted under 2016 Regulations-CBCS)

Time : Three Hours

Maximum Marks:100 Marks

Answer **ALL** questions

**Part-A (10 x 2 =20 Marks)**

- 1 Define cylindrical and spherical co-ordinate systems.
- 2 Define metal forming process.
- 3 What is wire drawing?
- 4 Define applications and defects in plasticity.
- 5 How special forming process is defined?
- 6 Define stretch forming.
- 7 Define Rolling
- 8 Define extrusion ratio.
- 9 State influence of temperature.
- 10 Define extrusion.

**PART-B (5 x 16 = 80 )**

- 11 a. State mohr's circle representation.  
**OR**  
b. Describe and write the tresca and von-mises.
- 12 a. Explain the working of some drawing equipments.  
**OR**  
b. Design consideration in forming process.
- 13 a. Write short notes on formability tests.  
**OR**  
b. Describe the water hammer forming is carried out on sheet metal.
- 14 a. What is meant by powder perform forging?State the advantages and applications?  
**OR**  
b. Describe the rubber pad forming process with a neat sketch?HOW it differs from rubber hydroforming process?
- 15 a. Explain the friction heat generation and its uses.  
**OR**  
b. Define thermo mechanical regimes of Ti and Al alloys.

\*\*\*\*\*

**VINAYAKA MISSIONS RESEARCH FOUNDATION**  
**(Deemed to be University)**  
**M.E -DEGREE EXAMINATIONS- APR/MAY - 2019**  
**MANUFACTURING ENGINEERING**  
**SECOND SEMESTER**  
**MEMS & NANOTECHNOLOGY**  
(Candidates admitted under 2016 Regulations-CBCS)

Time : Three Hours

Maximum Marks:100 Marks

Answer **ALL** questions**Part-A (10 x 2 =20 Marks)**

- 1 Write the Applications of MEMS.
- 2 What is working principle of sensing microsystem?
- 3 Define Wafer bonding.
- 4 Define Anodic bonding.
- 5 What is MEMS actuators?
- 6 Define micro switch.
- 7 What are the nanostructures classified?
- 8 Define electron beam lithography.
- 9 List out the various Nano-processing systems.
- 10 Define scanning probe microscopy.

**PART-B (5 x 16 = 80 )**

- 11 a. Describe the working principle and application of microsystems?  
**OR**  
b. Compare microelectronics and silicon based Microsystems.
- 12 a. Discuss in detail about bulk and surface machining.  
**OR**  
b. What are the various silicon compounds often used in micro- systems? Explain them and the role they play in Microsystems?
- 13 a. Describe various pressure sensors and flow sensors.  
**OR**  
b. A elaborate description on working principle and instrumentation of displacement, pressure and flow sensors?
- 14 a. Briefly narrate the history of Nano-materials  
**OR**  
b. Describe the fabrication process of nanostructures using top down Process.
- 15 a. Describe the Nano processing and Nano measuring systems.  
**OR**  
b. Explain in details of transmission electron microscopy with neat sketch.

\*\*\*\*\*

**VINAYAKA MISSIONS RESEARCH FOUNDATION**  
**(Deemed to be University)**  
**M.E -DEGREE EXAMINATIONS- APR/MAY - 2019**  
**MANUFACTURING ENGINEERING**  
**SECOND/FIFTH SEMESTER**  
**ELECTIVE - POLYMERS AND COMPOSITE MATERIALS**  
(Candidates admitted under 2016 Regulations-CBCS)

Time : Three Hours

Maximum Marks:100 Marks

Answer **ALL** questions**Part-A (10 x 2 =20 Marks)**

- 1 How can we measure molecular weight of polymers ?
- 2 What is the configuration of an isotactic polymer?
- 3 List the ejection systems in injection moulding.
- 4 What is spin trimming?
- 5 What property of Boron fiber makes it applicable in aerospace composites?
- 6 List few significant applications of ceramic fibres.
- 7 Specify the two important stages in a moulding process of a composite.
- 8 List few significant advantages of resin injection process over contact contact moulding.
- 9 State few reasons why fabrication of metal matrix composites are complex.
- 10 What is compocasting?

**PART-B (5 x 16 = 80 )**

- 11 a. Compare and contrast the features and properties of thermoplastics and thermosetting plastics.

**OR**

- b. Explain the significant properties of plastics over metals.

- 12 a. Write short notes on a) casting method of plastics and b). thermoforming of plastics.

**OR**

- b. Describe vibration welding of thermoplastics with necessary sketches. List the advantages and disadvantages of vibration welding.

- 13 a. Describe the different physical properties of glass fibers and detail its important applications.

**OR**

- b. What are the essentially functions of matrix materials of a composite? Enumerate the factors considered in selecting a matrix material for a composite.

- 14 a. Explain in detail about design of resin system for resin transfer moulding.

**OR**

- b. Composite can be used as a protective laminate on the outside of steel pressure pipes where external corrosion can take place. Explain.

- 15 a. Compare the different metal matrix composites fabrication technique.

**OR**

- b. Explain processing of ceramic matrix composites by Chemical Vapour Infiltration .

\*\*\*\*\*



**VINAYAKA MISSIONS RESEARCH FOUNDATION**  
**(Deemed to be University)**  
**M.E -DEGREE EXAMINATIONS- APR/MAY - 2019**  
**MANUFACTURING ENGINEERING**  
**FIRST SEMESTER**  
**ELECTIVE - MATERIALS MANAGEMENT & LOGISTICS**  
(Candidates admitted under 2016 Regulations-CBCS)

Time : Three Hours

Maximum Marks:100 Marks

Answer **ALL** questions  
**Part-A (10 x 2 =20 Marks)**

- 1 Define inventory.
- 2 State the advantages of value analysis.
- 3 Define the purchasing procedures.
- 4 Write the policies of purchasing.
- 5 What is storage management?
- 6 Write the types of transportation.
- 7 Write the types of inventory model.
- 8 What are the elements of sales forecasting.
- 9 Define just in time.
- 10 Define total quality control.

**PART-B (5 x 16 = 80 )**

- 11 a. Explain the process of operating cycle.  

**OR**
- b. Explain the various steps in value analysis
- 12 a. Explain the steps of purchasing policies.  

**OR**
- b. Explain the various vendor evaluation technique.
- 13 a. Explain the layout of stores,  

**OR**
- b. Explain the methods of stock taking.
- 14 a. Explain the sales forecasting technique.  

**OR**
- b. Explain the bill of material file.
- 15 a. Explain the aggregate planning.  

**OR**
- b. Explain the various process involved in just in time.

\*\*\*\*\*

**VINAYAKA MISSIONS RESEARCH FOUNDATION**  
**(Deemed to be University)**  
**M.E -DEGREE EXAMINATIONS- APR/MAY - 2019**  
**MANUFACTURING ENGINEERING**  
**THIRD SEMESTER**  
**ELECTIVE - METAL CUTTING THEORY AND PRACTICE**  
(Candidates admitted under 2016 Regulations-CBCS)

Time : Three Hours

Maximum Marks:100 Marks

Answer **ALL** questions**Part-A (10 x 2 =20 Marks)**

- 1 What is shear plane ?
- 2 What is cutting force?
- 3 What is the effect of back rake angle ?
- 4 Name the various parts of sensitive drilling machines.
- 5 Define thermal expansions.
- 6 How the temperature in machines effect the tool life.?
- 7 Define the different mechanics of tool wear.
- 8 What are the advantages of index able inserts.
- 9 What is economics of machining.
- 10 Explain chatter and machining.

**PART-B (5 x 16 = 80 )**

- 11 a. Explain the types of chip formation.  
**OR**  
b. Explain the lee and shaffers theory.
- 12 a. Explain the effect of rake angle.  
**OR**  
b. Explain the climb milling process.
- 13 a. State the function and essential properties of cutting fluids.  
**OR**  
b. Name the diffetrent types of cutting fluids used in metal cutting, how does the method of applications affect the effectiveness of the cutting fluids.
- 14 a. Discuss factors which effect machinability.  
**OR**  
b. Derive the expression for tool life for maximum production rate.
- 15 a. Discuss the factors affecting chatter in machining.  
**OR**  
b. Explain the types of chatter mechanism.

\*\*\*\*\*

**VINAYAKA MISSIONS RESEARCH FOUNDATION**  
**(Deemed to be University)**  
**M.E -DEGREE EXAMINATIONS- APR/MAY - 2019**  
**MANUFACTURING ENGINEERING**  
**SECOND SEMESTER**  
**ELECTIVE - LEAN MANUFACTURING SYSTEM AND**  
**IMPLEMENTATION**

(Candidates admitted under 2016 Regulations-CBCS)

Time : Three Hours

Maximum Marks:100 Marks

Answer **ALL** questions  
**Part-A (10 x 2 =20 Marks)**

- 1 What are the principles of lean manufacturing
- 2 Abbreviate JIT, TPM, TQM and VSM.
- 3 Write down the principles of TPM
- 4 Abbreviate TPM, JIT, VSM and TQM
- 5 Define setup time reduction.
- 6 Write the different methods of time reduction.
- 7 What do you mean by statistical considerations.
- 8 Explain the concept of 6 sigma.
- 9 Define lean manufacturing.
- 10 Define time setup reduction.

**PART-B (5 x 16 = 80 )**

- 11 a. What are the elements of lean manufacturing  

**OR**

 b. Explain the implementation of lean manufacturing in firms.
- 12 a. Define TPM process in detail.  

**OR**

 b. Explain the types of cell layout principles and its implementation.
- 13 a. Define VSM.  

**OR**

 b. Write about the evolution of 5S.
- 14 a. Write about the evolution of 6 sigma.  

**OR**

 b. Briefly explain statistical reduction.
- 15 a. Explain briefly about the principle, elements and tools in lean manufacturing.  

**OR**

 b. With an example make a case study of lean manufacturing.

\*\*\*\*\*

**VINAYAKA MISSIONS RESEARCH FOUNDATION**  
**(Deemed to be University)**  
**M.E -DEGREE EXAMINATIONS- APR/MAY - 2019**  
**MANUFACTURING ENGINEERING**  
**THIRD SEMESTER**  
**ELECTIVE - QUALITY RELIABILITY ENGINEERING**  
(Candidates admitted under 2016 Regulations-CBCS)

Time : Three Hours

Maximum Marks:100 Marks

Answer **ALL** questions  
**Part-A (10 x 2 =20 Marks)**

- 1 Define the term quality assurance.
- 2 Distinguish between a 'defect' and a 'defective'.
- 3 What are the limitations of acceptance sampling?
- 4 What is an OC Curve and what information does it convey?
- 5 Define static system goal and dynamic system goal.
- 6 Draw graph for quality loss function.
- 7 What are the nature of failures?
- 8 What are the four factors associated with reliability?
- 9 Define maintainability?
- 10 What is preventive maintenance?

**PART-B (5 x 16 = 80 )**

- 11 a. What are the areas of applications of quality control?  
**OR**  
b. Broadly classify and explain control charts for variables.
- 12 a. Explain in detail OC Curve in single sampling fraction defective plan.  
**OR**  
b. Explain in detail on consumer's risk and producer's risk in sampling plans.
- 13 a. Explain Taguchi's quality loss function  
**OR**  
b. What is the importance of Taguchi's method in quality improvement?
- 14 a. Explain the measures of reliability.  
**OR**  
b. Explain k- out of n- system in reliability with examples?
- 15 a. Write short notes on reliability life testing?  
**OR**  
b. Define maintainability. Explain how to minimize repair time and cost.

\*\*\*\*\*

**VINAYAKA MISSIONS RESEARCH FOUNDATION**  
**(Deemed to be University)**  
**M.E -DEGREE EXAMINATIONS- APR/MAY - 2019**  
**MANUFACTURING ENGINEERING**  
**FIFTH SEMESTER**  
**ELECTIVE - MANUFACTURING MANAGEMENT**  
(Candidates admitted under 2016 Regulations-CBCS)

Time : Three Hours

Maximum Marks:100 Marks

Answer **ALL** questions  
**Part-A (10 x 2 =20 Marks)**

- 1 What is meant by plant location?
- 2 Define the combination layout.
- 3 What is motion analysis ?
- 4 What is work study?
- 5 Write the aims of process of planning.
- 6 Write the functions of break even chart.
- 7 Stat the advantages of scheduling.
- 8 Define activity.
- 9 What is market management ?
- 10 What are the methods of training ?

**PART-B (5 x 16 = 80 )**

- 11 a. Explain the types of plant layout.  

**OR**

b. Explain the functions of material handling process.
- 12 a. Explain the basic steps in time study.  

**OR**

b. Explain about the ergonomics.
- 13 a. Explain the forecasting process.  

**OR**

b. Explain the sales forecasting technique.
- 14 a. Explain the scheduling procedure and techniques.  

**OR**

b. Explain the network analysis.
- 15 a. Explain the aims of personnel management.  

**OR**

b. Explain about the advertising.

\*\*\*\*\*