

# G.M. Vedak Institute of Technology, Tala

## Internal Assessment-I

Mumbai University

Branch- BE Mechanical Engineering

Course - Production Planning and Control

Course Code: MEC703

Semester-VII (CBCGS)

Pattern- Revised 2016

Date- 10/11/2020

Exam Time- 10.00 AM TO 10.30 AM

### Instructions-

1. Enter your details in correct manner (Seat Number and Name)(Capital & In English only)
2. Read All questions carefully.
3. Link will get deactivated at 10:30 AM, submit your response before 10:30 AM.
4. Once the form is submitted, answers can not be changed.
5. No negative marking.
6. All questions are compulsory.
7. Use of unfair means is prohibited
8. Avoid multiple logins.

### COURSE OUTCOMES:

- 1) **CO1-** Student will be able to illustrate production planning functions and manage manufacturing functions in a better way.
- 2) **CO2-** Student will be able to forecast the demand of the product and prepare an aggregate plan.
- 3) **CO3-** Student will be able to develop the skills of Inventory Management and cost effectiveness.



Q.1 Ship Building and Aircraft manufacturing is an example of \_\_\_\_\_ type of layout .

- A. Combined
- B. Matrix
- C. Fixed
- D. Group

Q2.In Mass production system,

- A. Material handling system is flexible
- B. Material handling system is semi automatic.
- C. Material handling system is automatic
- D. Material handling system does not exist

Q3.The task of off loading some of the jobs to the outside vendors thus hiring capacity to meet the requirements of the organization is known as

- A. Subcontracting
- B. Replenishing
- C. Procuring
- D. Ordering

Q4.The planned or engineered rate of output of goods or service under normal or full scale operating condition is known as

- A. Licensed capacity
- B. Design Capacity
- C. System capacity
- D. Installed capacity

Q5.Capacity planing is to be carried out keeping in mind \_\_\_\_\_growth and expansion plans, market trend, sales forecast,etc.

- A. Current
- B. future
- C. partial
- D. complete



Q6. The basic primary requirement at the very initial stage in capacity planning is

- A. Demand forecast
- B. Inventory requirement
- C. Manpower requirement
- D. Equipment requirement

Q7. Aggregate planning is done for a period of

- A. 3 years
- B. 1.5 to 2 years
- C. maximum upto 1.5 years
- D. 10 years

Q8. A-B-C analysis is not

- A. Is a basic technique of materials management
- B. Is meant for relative inventory control
- C. Does not depend upon the unit cost of the item but on its annual consumption
- D. a method for manufacturing the goods

Q9. Which of the following statements about the basic EOQ model is false?

- A. If the setup cost were to decrease, the EOQ would fall.
- B. If annual demand were to increase, the EOQ would increase.
- C. If the ordering cost were to increase, the EOQ would rise.
- D. If annual demand were to double, the EOQ would also double.

Q10. Which of the following is not an inventory?

- A. Machines
- B. Raw material
- C. Finished products
- D. Consumable tools



Q11. A \_\_\_\_\_ is something which is offered to customers to satisfy their needs or wants.

- A. Process
- B. Price
- C. Promotion
- D. Product

Q12. Which of the following is not a part of Five M's?

- A. Material
- B. Machine
- C. Motion
- D. Method

Q13. Given last period's forecast of 150, and last period's demand of 160, what is the simple exponential smoothing forecast with an alpha of 0.5 for the next period? (1 mark)

- A. 152
- B. 155
- C. 157
- D. 160

Q14. The demand of an item is 100 and 120 units for January and February respectively. Using 110 as forecast for January, Calculate the forecast for March using 0.4 as smoothing constant. (2 marks)

- A. 112
- B. 111
- C. 106
- D. 98

Q15. Refer the following data given below and Using 3 month moving average method find the forecasting for the month of December. July sales 50, August sales 52, September sales 54, October sales 48 and November sales 72. (2 marks)

- A. 59
- B. 57
- C. 58
- D. 60



Q16 An inventory decision rule states "when the inventory level goes down to 14 gearboxes, 100 gearboxes will be ordered." Which of the following statements is true?

- A. 100 is the reorder point, and 14 is the order quantity.
- B. 14 is the reorder point, and 100 is the order quantity.
- C. The number 100 is a function of demand during lead time.
- D. 14 is the safety stock, and 100 is the reorder point.

Q17. 'Buffer stock' is the level of stock

- A. Half of the actual stock
- B. At which the ordering process should start
- C. Minimum stock level below which actual stock should not fall
- D. Maximum stock in inventory



# G.M. Vedak Institute of Technology, Tala

## Internal Assessment-II

Mumbai University

Branch- BE Mechanical Engineering

Course - Production Planning and Control

Course Code: MEC703

Semester-VII (CBCGS)

Pattern- Revised 2016

Date- 18/12/2020

Exam Time- 10.00 AM TO 10.30 AM

### Instructions-

1. Enter your details in correct manner (Seat Number and Name)(Capital & In English only)
2. Read All questions carefully.
3. Link will get deactivated at 10:30 AM, submit your response before 10:30 AM.
4. Once the form is submitted, answers can not be changed.
5. No negative marking.
6. All questions are compulsory.
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### COURSE OUTCOMES:

- 1) CO4- Student will be able to understand process planning and create a logical approach to linebalancing in various production systems.
- 2) CO5- Student will be able to develop competency in scheduling and sequencing of manufacturing operations.
- 3) CO6- Student will be able to understand modern techniques of production planning and control.





Q.1 A line balancing problem is solved in the context of

- A. process layout
- B. fixed position layout
- C. product layout
- D. production schedule

Q2. Which of the following statements related to characteristics of line balancing are correct ?

- A. shareout of sequential work activities into work stations
- B. High utilization of equipment
- C. Minimization of idle time
- D. All of the above

Q3. Which of the following are benefits of line balancing?

- 1. It minimizes the in-process inventory
- 2. It reduces the work content
- 3. It smoothen the production flow
- 4. It maintains the required rate of output

- A. 1,2 and 3
- B. 2,3 and 4
- C. 1,3 and 4
- D. 1,2 and 4

Q4. In an assembly line, what is balance delay?

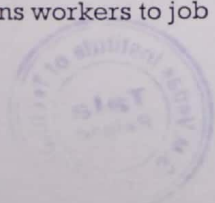
- A. Line Efficiency X 100
- B. 100-Line Efficiency(in %)
- C. Line Efficiency/100
- D. None of the above

Q5. In manufacturing management, the term 'Dispatching' is used to describe

- A. Dispatch of sales order
- B. Dispatch of factory mail
- C. Dispatch of finished product of the user
- D. Dispatch of work orders through shop floor

Q6. Sequencing perform following

- A. Assigns dates to specific jobs or operation steps
- B. Assigns jobs to work center
- C. Specifies order in which jobs should be done at each center
- D. Assigns workers to job



Q7. The \_\_\_\_\_ is the input to Materials Requirements Planning which lists the assemblies, subassemblies, parts and raw materials needed to produce one unit of finished product

- A. Assembly time chart
- B. Bill of materials
- C. Inventory records
- D. Net requirements chart

Q8. A master production schedule specifies

- A. What product is to be made, and when
- B. The financial resources required for production
- C. The labor hours required for production
- D. What component is to be made, and when

Q9. A material requirements plan contains information with regard to all of the following except

- A. Quantities and required delivery dates of final products
- B. Quantities and required delivery dates of all sub-assemblies
- C. Inventory on hand for each final product
- D. The capacity needed to provide the projected output rate

Q10. Demand for a given item is said to be dependent if

- A. The item has several children
- B. There is a clearly identifiable parent
- C. There is a deep bill of materials
- D. There is not any parent in given structure.

Q11. The extension of MRP which extends to resources such as labor hours and machine hours, as well as to order entry, purchasing, and direct interface with customers and suppliers is  
Process

- A. The master production schedule
- B. MRP II
- C. Enterprise Resource Planning
- D. Closed-loop MRP

Q12. Material requirements plan specify

- A. The costs associated with alternative plans
- B. The capacity needed to provide the projected output rate
- C. The quantities of the product families that need to be produced
- D. The quantity and timing of planned order releases





Q13. A bill of materials lists the

- A. Components, ingredients, and materials required to produce an item
- B. Times needed to perform all phases of production
- C. Operations required to produce an item
- D. Production schedules for all products

Q14. Enterprise Resource Planning (ERP) has been criticized on a number of grounds. Which of the following is not a common criticism of ERP?

- A. It can have a disruptive effect on the organization's operations
- B. Implementation is expensive
- C. It does not allow decisions and databases from all parts of the organization to be integrated
- D. The effect it has on businesses is disappointing

Q15. MRP II is accurately described as

- A. MRP augmented by other resource variables
- B. MRP software designed for services
- C. usually employed to isolate manufacturing operations from other aspects of an organization
- D. MRP with a new set of computer programs that execute on micro-computers

Q16 ERP system is built on a \_\_\_\_\_ utilising a common computing platform

- A. Individual databases
- B. Centralised database
- C. Modular databases
- D. Centralised layout

Q17 What is the key to MRP?

- A. Capacity of requirements for components are based upon the structure of the Bill of Material.
- B. Quantity of requirements for components are based upon the structure of the Bill of Material.
- C. Production of requirements for components are based upon the structure of the Bill of Material.
- D. Time-phasing of requirements for components are based upon the structure of the Bill of Material.



Q18. MRP-II systems provide...

- A. Information that is useful to all functional areas and encourage cross-functional interaction.
- B. Accurate inventory information.
- C. Information with cost data.
- D. Information that can be used for other company functions.

Q19. In an MRP system, component demand is

- A. Foreasted
- B. Established by the master production schedule
- C. Calculated by MRP system from the master production schedule
- D. Ignored

Q20. Material requirements planning does not include

- A. Material price
- B. Bill of material
- C. Inventory level
- D. Production schedule



# Internal Assessment-II MMC

Mumbai University

Branch- TE Mechanical Engineering

Subject- Mechanical Measurement & Control

Course Code: MEC 502

Semester-V (CBCGS)

Pattern- Revised 2016

Date- 17/12/2020

Exam Time- 3.00 PM TO 3.30 PM

## Instructions-

1. Enter your details in correct manner (Seat Number and Name)(Capital & In English only)
2. Read All questions carefully.
3. Link will get deactivated at 3:30 PM, submit your response before 3:30 PM.
4. Once the form is submitted, answers can not be changed.
5. No negative marking.
6. All questions are compulsory.
7. Each question carries 1 (One) Marks
8. Use of unfair means is prohibited
9. Avoid multiple logins.

## Course Outcome (CO)

- CO2:** Students should be able to study and select proper measuring instrument for linear and angular displacement.
- CO3:** Students should be able to Study and select proper measuring instrument for pressure and temperature measurement.
- CO4:** Students should be able to study the Design mathematical model of system/process for standard input responses.

\* Required

1. Email address \*

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2. Name of Student (In Capital & English only) \*  
(SURNAME) (NAME) (FATHER'S NAME) (MOTHER'S NAME)

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3. Exam Seat Number \*

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4. WhatsApp Number \*

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### Question Paper

#### Instructions-

1. Read All questions carefully.
2. Link will get deactivated at 3:30 PM submit your response before 3:30 PM
3. Once the form is submitted, answers can not be changed.
4. No negative marking.
5. All questions are compulsory.
6. Each questions carries 1(one) Mark

5. The stroboscopic method of speed measurement has advantage that \*

1 point

Mark only one oval.

☒ There is no need of any physical contact between the instrument and shaft

☐ the multiples of angular speed can be measured

☐ a stationary image can be observed

☐ Method is simple

6. which of the following is not a type of electrical thermometer \*

1 point

Mark only one oval.

☒ Bimetallic type

☐ RTDs

☐ Thermistors

☐ Thermocouples



7. In Generalized Measurement System 'signal amplification and or filtration' is done by which element ? \* 1 point

Mark only one oval.

- ☒ Variable manipulation element
- ☐ Data Processing element
- ☐ Variable conversion element
- ☐ Sensing element

8. What is the correct definition of resolution? \* 1 point

Mark only one oval.

- ☒ Difference between accuracy and precision
- ☐ Smallest graduation on the scale or dial
- ☐ Visual separation between graduations
- ☐ Difference between the instrument reading and actual dimension

9. Which arrangement has the capacity to measure the temperature of an object which may be either stationary or moving? \* 1 point

Mark only one oval.

- ☒ Total Radiation Pyrometer
- ☐ Thermocouples
- ☐ Thermistors
- ☐ Liquid filled thermometers





10. Which is not a dynamic characteristic of an instrument. \*

1 point

Mark only one oval.

- ☒ Hysteresis and dead zone
- ☐ Overshoot
- ☐ Frequency response
- ☐ Seed of response and measuring lag

11. In an open loop control system \*

1 point

Mark only one oval.

- ☒ Output is independent of control input
- ☐ Output is dependent on control input
- ☐ Only system parameters have effect on the control output
- ☐ Feedback element is present

12. Which of the following is not an open loop control system ? \*

1 point

Mark only one oval.

- ☒ Automatic bottle filling machine
- ☐ Washing machine
- ☐ Fan
- ☐ Electric hand dryer



13. Which is not a mode of measurement \*

1 point

Mark only one oval.

- ☒ Basic
- ☐ Primary
- ☐ Secondary
- ☐ Tertiary

14. Electrical tachometer is the example of \*

1 point

Mark only one oval.

- ☒ Tertiary measurement
- ☐ First order instrument
- ☐ Zero order instrument
- ☐ Secondary measurement

15. A good control system has all the following features except \*

1 point

Mark only one oval.

- ☒ slow response
- ☐ good stability
- ☐ good accuracy
- ☐ sufficient power handling capacity



16. A closed loop system is distinguished from open loop system by which of the following ? \*

1 point

Mark only one oval.

- ☒ Feedback
- ☐ Servomechanism
- ☐ Output pattern
- ☐ Input pattern

17. In block diagram reduction, when two blocks are in series connection , then \*

1 point

Mark only one oval.

- ☒ They get multiplied with each other
- ☐ They get added algebraically considering the sign
- ☐ Reciprocal of that block gets added
- ☐ Remains same

18. Optical position encoders are used for the measurement of \*

1 point

Mark only one oval.

- ☒ Angular displacement
- ☐ Linear displacement
- ☐ Torque
- ☐ Linear Velocity



19. In block diagram reduction, when two blocks are in parallel connection , then \* 1 point

\*

Mark only one oval.

- ☒ They get added algebraically considering the sign
- ☐ They get multiplied with each other
- ☐ Remains same
- ☐ Reciprocal of that block gets added

20. In block diagram reduction, associative law is applicable when \* 1 point

Mark only one oval.

- ☒ two or more summing points are directly connected with each other
- ☐ two or more take-off points are directly connected with each other
- ☐ There is a block in between two summing points
- ☐ There is a take-off point in between two summing points

21. Transfer function is given as Laplace of \* 1 point

Mark only one oval.

- ☒ Output/Input
- ☐ Input/Output
- ☐ Output - Input
- ☐ Input- Output



22. McLeod gauge works on \*

1 point

Mark only one oval.

- ☒ Boyle's law
- ☐ Newton's law
- ☐ Pascal's law
- ☐ Hook's law

23. Which of the following is a non contact type temperature measurement method \*

1 point

Mark only one oval.

- ☒ Radiation pyrometers
- ☐ Thermocouples
- ☐ Resistance thermometer
- ☐ Bimetallic thermometer

24. "The measurable property that varies with temperature in a thermocouple is" \*

1 point

Mark only one oval.

- ☒ voltage
- ☐ thermal expansion
- ☐ thermal radiation
- ☐ electrical resistance

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## Internal Assessment -II Data Structures(DSE)

Mumbai University

Branch- SE Computer Engineering  
 Subject- Data Structures Course Code: CSC303  
 Semester-III (CBCGS)  
 Pattern- Revised 2019  
 Date- 30 March 2021(DSE)  
 Exam Time- 03.00 PM TO 03.45 PM

### Instructions-

1. Enter your details in correct manner (Seat Number and Name)(Capital & In English only)
2. Read All questions carefully
3. Link will get deactivated at 03.45 PM, submit your response before 03.45 PM.
4. Once the form is submitted, answers can not be changed.
5. No negative marking
6. All questions are compulsory
7. Use of unfair means is prohibited
9. Avoid multiple logins.

### Course Outcome(CO)

- CO 4: Students will be able to choose appropriate data structure and apply it to solve problems in various domains.
- CO 5: Students will be able to analyze and implement appropriate searching techniques for a given problem.
- CO 6: Students will be able to demonstrate the ability to analyze, design, apply and use data structures to solve engineering problems and evaluate their solutions.

\*Required

1. Email \*

2. Name of Student (In Capital &amp; English only) \*

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1/5

11/08/2021

Internal Assessment -II Data Structures(DSE)

7. The no of external nodes in a full binary tree with n internal nodes is? \*

1 point

Mark only one oval.

- ☐ n
- ☐ n+1
- ☐ 2n
- ☐ 2n+1

8. If several elements are competing for the same bucket in the hash table, what is it called? \*

1 point

Mark only one oval.

- ☐ Diffusion
- ☐ Replication
- ☐ Collision
- ☐ Duplication

9. A binary search tree is generated by inserting in order the following integers:50, 15, 62, 5, 20, 58, 91, 3, 8, 37, 60, 24The number of the node in the left sub-tree and right sub-tree of the root, respectively, is \*

1 point

Mark only one oval.

- ☐ (4, 7)
- ☐ (7, 4)
- ☐ (8, 3)
- ☐ (3, 8)


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3/5

3. Roll Number

4. WhatsApp Number \*

Each question carries 1 (One) Marks

5. If each node in a tree has value greater than every value in its left subtree and has value less than every value in its right subtree, the tree is called \*

1 point

Mark only one oval.

- ☐ Complete Tree
- ☐ Full Binary Tree
- ☐ Binary Search Tree
- ☐ AVL

6. Which type of traversal of binary search tree outputs the value in sorted order? \*

1 point

Mark only one oval.

- ☐ Pre-order
- ☐ Post-order
- ☐ In-order
- ☐ Pre-Post orders

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2/5

11/08/2021

Internal Assessment -II Data Structures(DSE)

10. A result of evaluating postfix expression is: 3, 5, +, 6, 4, -, \*, 4, 1, -, 2, ^, + \*

1 point

Mark only one oval.

- ☐ 25
- ☐ 21
- ☐ 42
- ☐ 34

11. In linked list implementation of a queue, where does a new element be inserted?

1 point

Mark only one oval.

- ☐ At the head of link list
- ☐ At the tail of the link list
- ☐ At the centre position in the link list
- ☐ From both ends

12. A result of evaluating postfix expression is: 3, 5, +, 6, 4, -, \*, 4, 1, -, 2, ^, + \*

1 point

Mark only one oval.

- ☐ 25
- ☐ 21
- ☐ 42
- ☐ 34

13. In a graph if  $e=[G,V]$ , the u and v are called as \*

1 point

Mark only one oval.

- ☐ endpoints of e
- ☐ adjacent nodes
- ☐ Neighbours
- ☐ endpoints of e, adjacent nodes, Neighbours

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4/5

14. The Data structure used in standard implementation of Breadth First Search is? \*

Mark only one oval.

- ☐ Stack  
☐ Queue  
☐ Linked List  
☐ Tree

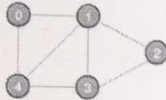
Answer Following questions. Upload scanned answer sheet in PDF only.

Solve any two from following. Each question carries 5 marks.  
On each page of answer sheet do sign and write your name and roll number.

15.

10 marks

Q.1 Give the breadth-first traversal of the graph for following graph, starting from vertex 0. Show all the steps.



Q.2 Create an AVL tree using the following data entered as a sequential set. Show all the steps. 13, 20, 24, 10, 13, 7, 30, 36, 23. Show which rotations are used while constructing AVL tree.

Q.3 Draw the B-tree of order 3 created by inserting the following data arriving in sequence: 92 24 6 7 11 8 22 4 5 16 19 20 78

(Curl) \*

Files submitted:

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[https://docs.google.com/forms/d/1WhQMGr7epz6KJ9kQtS1SzFEcGHctw\\_PFuotqCQfYnY/edit](https://docs.google.com/forms/d/1WhQMGr7epz6KJ9kQtS1SzFEcGHctw_PFuotqCQfYnY/edit)

5/5



**G. M. VEDAK INSTITUTE OF TECHNOLOGY, TALA**  
DEPARTMENT OF MECHANICAL ENGINEERING  
Academic Year 2019-20 (Second Half 2019)

**Internal Assessment-I**

Subject : PPC  
Date : 16/08/19

Class : B.E.  
Time : 10.30am-11.30am

Sem : VII  
Max. Marks: 20

N.B.:(1) All Questions are compulsory. (2) Figures to the right indicate full marks.

Course Outcomes covered in this test are as follows.

<b>CO 2</b>	Student will be able to forecast the demand of the product and prepare an aggregate plan.
<b>CO 3</b>	Student will be able to develop the skills of Inventory Management and cost effectiveness.
<b>CO 5</b>	Student will be able to develop competency in scheduling & sequencing of manufacturing operations.

Q. No.	Sub QNo	CO No.	Question											Marks
1	Attempt any Five.													
	A	CO2	The sales of a company are given below. Fit a straight line to the data.											2
			Year	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	
			Sales	240	280	300	330	380	410	490	560	680	800	
	B	CO2	Find Forecast for the year 2013.											2
	C	CO2	Find Forecast for the year 2019.											2
	D	CO2	Find coefficient of correlation.											2
	E	CO2	Find standard error of estimate.											2
F	CO2	Find limits of forecast.											2	
2	Attempt any Three.													
	A	CO3	A textile mill buys its raw material from a vendor. The annual demand of the raw material is 9000 units. The ordering cost is Rs 100 per order and the carrying cost is 20% of the purchases price per month, where the purchase price per unit is Rs1.Find the Economic Order Quantity (EOQ).											2
	B	CO3	Find total cost wrt EOQ.											2
	C	CO3	Find number of orders per year.											2
	D	CO3	Find time between consecutive two orders.											2
3	Attempt any Two.													
	A	CO5	Six jobs are to be processed on two machines $M_1$ and $M_2$ in the order $M_1$ - $M_2$ . Processing time in hours are given below.											2
			Job		1	2	3	4	5	6				
			Machine	$M_1$	5	2	13	10	8	12				
	$M_2$	4		3	14	1	9	11						
Determine the sequence that minimizes the total elapsed time.														
B	CO5	Find out idle time on machine $M_1$ and $M_2$ .											2	
C	CO5	Find out total elapsed time.											2	

# G. M. VEDAK INSTITUTE OF TECHNOLOGY, TALA

## **Department of Mechanical Engineering**

Academic Year-2020-21 (Second Half 2020)

### **Internal Assessment-I**

Subject : MD-II

Class : B.E.

Sem : VII

Date : 09/11/2020

Time : 10.00am-10.30am

Max. Marks : 20

Course Outcomes covered in this test are as follows.

CO1	Students should be able to select and design gears for power transmission on the basis of given load and speed.
CO2	Students should be able to select appropriate rolling contact bearings for given application from manufacturer's catalogue.

#### Instructions-

1. Read All questions carefully.
2. Link will get deactivated at 10:30am, submit your response before 10:30am.
3. Once the form is submitted, answers can not be changed.
4. No negative marking.
5. All questions are compulsory.

Q.1	Which of the following can be used for power transmission in intersecting shafts.
A	Spur Gear
B	Helical Gear
C	Bevel Gear
D	None of the listed
Q.2	The size of a gear is usually specified by
A	Pressure angle
B	Pitch circle diameter
C	Circular pitch
D	Diametral pitch
Q.3	Which of the following statement is correct for gears?
A	The pitch circle diameter is equal to the product of module and number of teeth
B	The addendum is less than dedendum
C	The pitch circle is always greater than the base circle
D	All of the above
Q.4	If $(\sigma_b \times Y)_{\text{pinion}} > (\sigma_b \times Y)_{\text{gear}}$ then _____ is designed for bending.
A	pinion
B	gear
C	both a. and b.
D	none of the above
Q.5	In force analysis of spur gears which component of force assists the rotation on driven gear?
A	Axial component
B	Radial component
C	Tangential component
D	All of the above
Q.6	which material is used for worm wheel?
A	C50
B	Bronze and phosphorus
C	cast iron
D	none of above
Q.7	what is design strength criteria of gear design
A	$F_s \geq F_d$
B	$F_s \leq F_d$



C	$F_t = F_d$
D	$F_d > F_s$
Q.8	A bearing supports the load acting along the axis of the shaft.
A	Thrust
B	Radial
C	Longitudinal
D	Transversal
Q.9	In angular contact bearings, bearings are required to take thrust load in both directions.
A	1
B	2
C	4
D	3
Q.10	Which of the following cannot take radial load?
A	Cylindrical Roller bearing
B	Taper roller bearing
C	Thrust ball bearing
D	None of the listed
Q.11	Bearing running at 900 rpm for life of 6000 hrs with probability of survival 93%, calculate life in million revaluation (mr).....(2M)
A	555
B	425
C	324
D	280
Q.12	Calculate equivalent load of bearing having $X=1$ , $Y=2.9$ , service factor=1.2, $k_t=1.08$ ....(2M)
A	150KN
B	200KN
C	250KN
D	300KN
Q.13	Calculate speed speed of gear having reduction ratio=6.67 and speed of motor is 960 rpm.....(2M)
A	144
B	170
C	157
D	136
Q.14	Calculate center distance between two gears having, $Z_1=18$ , $Z_2=65$ and $m=4$ ...(2M)
A	200
B	180
C	177
D	166
Q.15	Find dynamic capacity of roller bearing having $P_e=7.55$ KN...(2M)
A	44.10KN
B	43.22KN
C	47.06KN
D	49.33KN





# G. M. VEDAK INSTITUTE OF TECHNOLOGY, TALA

## **Department of Mechanical Engineering**

Academic Year-2020-21 (Second Half 2020)

### **Internal Assessment-II**

Subject : MD-II

Class : B.E.

Sem : VII

Date : 17/12/2020

Time : 10.00am-10.30am

Max. Marks : 20

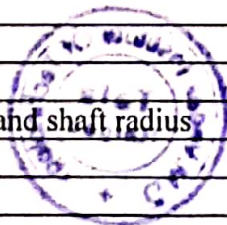
Course Outcomes covered in this test are as follows.

CO3	Students should be able to select appropriate rolling contact bearings for given application from manufacturer's catalogue.
CO4	Students should be able to select and design belt drive.
CO5	Students should be able to design flywheel for given applications.
CO6	Students should be able to design clutch and brakes.

#### Instructions-

1. Read All questions carefully.
2. Link will get deactivated at 10:30am, submit your response before 10:30am.
3. Once the form is submitted, answers can not be changed.
4. No negative marking.
5. All questions are compulsory.

Q.1	A zero film bearing is a bearing
A	Where the surfaces of journal and the bearing are separated by a thick film of lubricant
B	Where the surfaces of journal and the bearing are partially separated by a film of lubricant and there is partial metal to metal contact
C	here the surfaces of journal and the bearing are separated by a film created by elastic deflection of parts
D	Where there is no lubricant
Q.2	In case of full journal bearing, the angle of contact of the bushing with the journal is
A	60°
B	90°
C	180°
D	360°
Q.3	An open belt drive is used when
A	shafts are arranged parallel and rotate in the opposite directions
B	shafts are arranged parallel and rotate in the same directions
C	shafts are arranged at right angles and rotate in one definite direction
D	driven shaft is to be started or stopped whenever desired without interfering with the driving shaft
Q.4	Hydrodynamic Bearing is self acting Bearing
A	Always
B	Sometimes
C	Never
D	none of the above
Q.5	Reciprocal of Viscosity is called
A	oiliness
B	stability
C	conductivity
D	fluidity
Q.6	Difference between Bearing radius and shaft radius
A	Eccentricity
B	Radial Clearance



C	Diametral Quotient
D	none of above
Q.7	In which of the following drives, there is no slip
A	Open belt drive
B	Crossed belt drive
C	Rope drive
D	Chain drive
Q.8	Coefficients of friction between belt pulley is depend on the...
A	Slip of belt
B	Speed of belt
C	Material of belt
D	All of these
Q.9	The ratio of the driving tensions for V-belts is _____ times that of flat belts.
A	$\sin \beta$
B	$\cos \beta$
C	$\operatorname{cosec} \beta$
D	$\sec \beta$
Q.10	In hydrodynamic lubrication, film thickness remains unaffected by change in speeds.
A	True
B	Increase with increase in speed
C	Decrease with increase in speed
D	Disappear as the speed tends to infinity
Q.11	For flat open belt drive the belt speed is 880m/min and power transmitted is 22.5 KW what is difference between tight side and slack side tensions of the belt drive?
A	9000 N
B	6450 N
C	1540 N
D	1000 N
Q.12	Select standard larger pulley diameter for smaller pulley diameter $d_1=220\text{mm}$ , Input speed $n_1=1150$ rpm, output speed $n_2=400$ rpm and % of slip is 1% ( $d_2=?$ )
A	$d_2=390\text{mm}$
B	$d_2=626\text{mm}$
C	$d_2=480\text{mm}$
D	$d_2=525\text{mm}$
Q.13	For V belt drive , arc of contact= 150 degree , $\beta=20$ degree and $\mu=0.3$ , Power(P)= 18 KW, $V=12$ m/s, calculate $T_1$ & $T_2$
A	$T_1=1555\text{N}$ , $T_2=155\text{N}$
B	$T_1=1445\text{N}$ , $T_2=143\text{N}$
C	$T_1=1667\text{N}$ , $T_2=167\text{N}$
D	$T_1=1001\text{N}$ , $T_2=102\text{N}$
Q.14	Calculate Load acting on sliding contact bearing having bearing pressure $P_b=1.6$ N/mm <sup>2</sup> and $L=D=120\text{mm}$ ( $W=?$ )
A	23040 N
B	2299 N
C	1675 N
D	4337 N
Q.15	Calculate Power loss (Hg) for sliding contact bearing having bearing $\mu=1.664 \times 10^{-3}$ , $W=1000\text{N}$ , $D=50\text{mm}$ , $N=1450\text{N}$
A	$H_g=63.2$ watt
B	$H_g=67.5$ watt
C	$H_g=83.2$ watt
D	$H_g=73.2$ watt

