

## SECOND YEAR KGCE EXAMINATION IN MECHANICAL ENGINEERING

## MECHANICAL ENGINEERING-II (TRADE THEORY)

## MODEL QUESTION PAPER

(Time : 3 hours)

(Maximum Marks: 60)

**PART-A***(There should be at least 3 questions from each module)*

(Maximum Marks: 20x1 Marks = 20 Marks)

- I. Answer the following questions by choosing the correct answer from the options given below.  
Each question carries 1 mark.

Q No	Question	Module
1	Density of Mild steel is? a) 7850 kg/m <sup>3</sup> b) 5850 kg/m <sup>3</sup> c) 4880 kg/m <sup>3</sup> d) 3850 kg/m <sup>3</sup>	M 1.1
2	The anticipated or probable cost of work and is usually prepared before the construction is known as? a) Actual cost b) Estimated cost c) True cost d) Allowable cost	M 1.2
3	The main factor to be considered while preparing a detailed estimate is? a) Quantity of materials b) Availability of materials c) Transportation of materials d) All of the above	M 1.1
4	A defect is likely to occur if cast iron is welded without preheating? a) Porosity b) Undercut c) Crack d) Blowholes	M 2.2
5	What is the position of pipe in 1G? a) Vertical position b) 45° inclined position c) Horizontal position d) Any position	M 2.1
6	While gas cutting, the preheat oxy-acetylene flame should be? a) Carburizing b) Oxidizing c) Neutral d) Reducing	M 2.3
7	The width of cut produced by oxy-acetylene cutting is called? a) Kerf b) Slag c) Bead d) Dragline	M 2.3
8	In TIG welding, the type of electrode used is? a) Non consumable b) Consumable c) Coated consumable d) Non coated consumable	M 2.4
9	The welding process that uses heat from an exothermic reaction to produce coalescence between metals is? a) TIG welding b) Thermit welding c) MIG Welding d) Plasma welding	M 2.4
10	A reamer is used to_____ a) Drill a hole b) Finish a drilled hole c) Internal threading d) Boring	M 3.1
11	What is the angle of ACME thread? a) 66° b) 55° c) 29° d) 45°	M 3.1

Q No	Question	Module
12	What is the term of the algebraic difference between a size, to its corresponding basic size? a) Deviation c) Lower deviation	M 3.1
	b) Upper deviation d) Actual deviation	
13	Which instrument is used to measure the effective diameter of the screw threads? a) Screw pitch gauge c) Screw thread micrometer	M 3.1
	b) Outside micrometer d) Screw thread caliper gauge	
14	What is the extreme permissible size within which the operator is expected to make the component? a) Basic size c) Nominal size	M 3.1
	b) Actual size d) Limits of size	
15	Which scraper is used to scrape the centre portion of large flat surface? a) Flat scraper c) Triangle scraper	M 3.1
	b) Hook scraper d) Bull nose scraper	
16	Which is known as universal code in CNC programming? a) G-Code c) N-Code	M 4.1
	b) M-Code d) C-Code	
17	CNC code for defining absolute system is? a) G 60 c) G 50	M 4.1
	b) G 90 d) G 80	
18	In shaper, the relative motion of tool and work is? a) Tool translates over work c) Tool alone rotates	M 4.1
	b) Work translates, Tool stationary d) Tool & Work rotates	
19	Which one of the following machine tool is preferred for key way cutting? a) Milling c) Drilling	M 4.1
	b) Lathe d) Grinding machine	
20	Quick return mechanism is used in which machine tool? a) Lathe c) Shaper	M 4.1
	b) Drilling machine d) Milling machine	

### PART-B

(There should be at least 2 questions from each module)

(Maximum Marks: 8x5 Marks = 40 Marks)

II. Answer *any eight* questions from the following. Each question carries marks.5 Marks.

Q No	Question	Module
1	Explain the factors affecting the welding cost?	M 1.1
2	An open water tank 1 m x 1 m x 2.5 m height is to be fabricated from MS plate of 2.5 cm thick. Estimate the cost of tank from the following data : Density of MS = 7850 kg/m <sup>3</sup> , Cost of MS plate = Rs 90/kg, Cost of fabrication = 25% of material cost, Cost of welding = Rs 0.25 per cm length (Assume missing data if any).	M 1.2
3	What are the factors to be considered for estimation of Machining time in lathe?	M 1.2
4	List different welding defects?	M 2.2
5	What are the different non destructive tests conducted in weld joints? What are the advantages of NDT?	M 2.2

<b>Q No</b>	<b>Question</b>	<b>Module</b>
6	Explain the mechanism of metal arc cutting?	M 2.3
7	With a neat sketch, explain TIG welding?	M 2.4
8	List various advanced welding techniques used in industry?	M 2.4
9	Explain limit, fit and tolerance?	M 3.1
10	List various screw threads used in industry?	M 3.1
11	State the importance of CNC machines in industry?	M 4.1
12	With a neat sketch, show different parts of a vertical milling machine?	M 4.1