Register Number : ……..

KUMARAGURU
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GENERAL INSTRUCTIONS TO THE CANDIDATES

1. Candidates are instructed to answer the questions as per Bloom's Taxonomy knowledge level (K_1 to K_6)
2. Candidates are strictly instructed not to write anything in the question paper other than their roll number.
3. Candidates should search their pockets, desks and benches and handover to the Hall Superintendent/ Invigilator if any paper, book or note which they may find therein as soon as they enter the examination hall.
4. Candidates are not permitted to bring electronic watches with memory, laptop computers, personal systems, walkie-talkie sets, paging devices, mobile phones, cameras, recording systems or any other gadget / device /object that would be of unfair assistance to him / her.
5. Corrective measures as per KCT examination policies will be imposed for malpractice in the hall like copying from any papers, books or notes and attempting to elicit the answer from neighbours.

B.E DEGREE EXAMINATIONS: DEC 2015

(Regulation 2014)

Third Semester

AUTOMOBILE ENGINEERING

U14AUT303: Automotive Manufacturing Technology

Time: Three Hours **Maximum Marks: 100**

Answer all the Questions:-

PART A (10 x 1 = 10 Marks)

1. During sand conditioning, the items added and their properties are given below Match the Items for their properties CO1 [K_3]

List I	List II
A. Silica	1. Helps in cooling the mould
B. Coal dust	2. Increase adhesiveness
C. Clay	3. Withstand high temperature
D. Water	4. Impart necessary bond to the moulding sand

	A	B	C	D
a)	2	3	1	4
b)	3	1	2	4
c)	3	1	4	2
d)	2	1	3	4

2. Directional solidification in a casting can be improved by using CO1 [K_3]

a) Chills and chaplets
b) Chills and padding
c) Chaplets and padding
d) Chills, chaplets and padding

3. In powder metallurgy, sintering is carried out in CO2 [K_2]

a) Oxidizing atmosphere
b) inert atmosphere
c) reducing atmosphere
d) air

4. Plastic bottles are made using CO2 [K_3]

a) Blow moulding
b) Injection moulding
c) Pre form moulding
d) slush moulding

5. Which of the following processes can be used for welding of Aluminium alloys? CO1 [K_3]

a) SAW
b) GMAW
c) Electro slag welding
d) GTAW

6. Which of the following welding processes uses non-consumable electrodes? CO1 [K_2]

a) TIG welding
b) MIG welding
c) manual arc welding
d) submerged arc welding

7. Assertion (A): In ECM, the shape of the cavity is the mirror image of the tool, but unlike EDM, the tool wear in ECM is less. CO1 [K_4]
Reason (R): The tool in ECM is a cathode.

a) Both A & R are true & R is the correct explanation of A
b) Both. A and R are true but R is NOT the correct explanation of A
c) A is true but R is false
d) A is false but R is true

8. In milling machine, the cutting tool is held in position by CO1 [K_2]

a) Chuck
b) Spindle
c) Arbor
d) Tool holder

9. Consider the following operations CO1 [K_3]
1. Under cutting
2. Plain turning
3. Taper turning
4. Thread cutting

Correct sequence of these operations in machining a product is

a) 4, 1, 3, 2
b) 1, 4, 3, 2
c) 3, 2, 4, 1
d) 2, 3, 1, 4

10. Line Balancing is CO1 [K_2]

a) to arrange the individual processing and assembly tasks at the workstations so that the total time required at each workstation is approximately the same
b) to arrange the individual tools at the workstations so that the total time required at each workstation is approximately the

same

c) to arrange the individual workstations so that the total time required for setting the tools is reduced

d) to arrange the individual labor at the workstation for each machine

PART B (10 x 2 = 20 Marks)

(Answer not more than 40 words)

11.	Differentiate Runner and Riser.	CO1	[K_2]
12.	Write the reaction equation between Sodium silicate and carbon dioxide.	CO1	[K_3]
13.	Define compression moulding.	CO2	[K_2]
14.	What is recrystallization temperature?	CO2	[K_3]
15.	Differentiate soldering and brazing	CO2	[K_3]
16.	What is the function of shielding gas in welding?	CO1	[K_3]
17.	Sketch the AJM process and list the parts.	CO1	[K_2]
18.	Define Oblique cutting.	CO3	[K_3]
19.	List any four factors that should be minimized for assembly process.	CO1	[K_3]
20.	What is fixed automatic assembly?	CO1	[K_2]

Answer any FIVE Questions:-

PART C (5 x 14 = 70 Marks)

(Answer not more than 300 words)

Q.No. 21 is Compulsory

21.	With neat sketches explain the shell and investment molding processes.	(7+ 7)	CO1	[K_2]
22.	i) Explain the types of rolling processes with required diagrams. ii) Elaborate the steps involved in the powder metallurgy process.	(7) (7)	CO2	[K_2]
23.	i) Differentiate the SMAW and the GMAW welding processes. ii) Draw the Plasma torch and explain its parts. Also detail the Plasma Arc Cutting process.	(6) (4+ 4)	CO1	[K_3]

24. Sketch the lathe, name its parts and explain its working principle. CO1 [K2]

25. With suitable diagram elaborate the Ultrasonic machining process, its advantages and limitations CO1 [K_2]

26. Write short notes on CO3 [K_3]

a) Mismatch and blow holes in casting (4)

b) Hydroforming (4)

c) Six design guidelines for Automated assembly (6)

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