



राजीव गांधी प्रौद्योगिकी विश्वविद्यालय

(मध्यप्रदेश का तकनीकी विश्वविद्यालय)

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क्रमांक/रा.गां.प्रौ.वि./परीक्षा/2018/239

भोपाल, दिनांक 12/02/2018

प्रति,

संचालक/प्राचार्य,
विश्वविद्यालय से संबद्ध समस्त अभियांत्रिकीय महाविद्यालय,
(म.प्र.)

विषय:- बी.टेक. द्वितीय सेमेस्टर की मिड सेम की परीक्षाएँ ऑन लाईन कराये जाने बावत् ।

राजीव गांधी प्रौद्योगिकी विश्वविद्यालय द्वारा बी.टेक. द्वितीय सेमेस्टर की मिड सेम की परीक्षाएँ फरवरी के अंतिम सप्ताह में ऑन लाईन कराया जाना है । इस परीक्षा के अंतर्गत प्रथमतः ए-ग्रुप के छात्रों के लिए इलेक्ट्रिकल एण्ड इलेक्ट्रानिक्स इंजीनियरिंग तथा बी - ग्रुप हेतु बेसिक मेकेनिकल इंजीनियरिंग विषय का चयन किया गया है तदनुसार प्रथम एवं द्वितीय यूनिट से प्रश्न पूछे जावेंगे। उक्त परीक्षा का संचालन एम.पी. ऑन लाईन के माध्यम से कराया जाना है। प्रश्न पत्र का सेम्पल संलग्न कर आपकी ओर इस आशय के साथ प्रेषित है कि समस्त छात्रों को आवश्यक रूप से अवगत कराया जावे ।

माननीय कुलपति महोदय द्वारा अनुमोदित ।

नियंत्रक (परीक्षा)

राजीव गांधी प्रौद्योगिकी विश्वविद्यालय

भोपाल ।

भोपाल, दिनांक 12/02/2018

पृ.क्रमांक/रा.गां.प्रौ.वि./परीक्षा/2018/240

प्रतिलिपि:-

1. माननीय कुलपति जी के निज सचिव/माननीय कुलपति जी के अवलोकनार्थ ।

नियंत्रक (परीक्षा)

राजीव गांधी प्रौद्योगिकी विश्वविद्यालय

भोपाल ।

BT-2003

B.E. II semester

Examination, Feb 2017

Basic Mechanical Engineering

Time: One Hours

Maximum Marks: 30

Q 1: All question carries equal marks [1 mark each]

No.	Question																																			
1	C-14 steel designation means that carbon content in steel is of order of (a) 0.1%(b) 0.1 to 0.18% (c) 1% (d) 4%																																			
2	The hardness of steel, in general, depends on (a) method of production (b) contents of alloying element (c) quality of ore from which it is produced (d) shape of carbides and their distribution																																			
3	Absolute pressure is sum of a. Absolute pressure = ATM Pressure + Gauge Pressure b. Absolute pressure = ATM Pressure – Gauge Pressure c. Absolute pressure = ATM Pressure + Vacuum Pressure d. Absolute pressure = ATM – Vacuum Pressure																																			
4	In Lathe, Lead screw is used for making a. Thread cutting b. slotting c. Tapper Turning d. Boring																																			
5	In an iron-carbon alloy, the content of carbon is stated to be 4.3 per cent. Such a cast iron is known as (a) hyper-eutectic cast iron (b) eutectic cast iron (c) hypo eutectic cast iron (d) such a nomenclature does not exist																																			
6	The electric bulb filaments are made of (a) tungsten (b) nichrome (c) constanton (d) german silver																																			
7	Match list I with list II and select the correct answer using the codes given below the lists: <table style="margin-left: 40px;"><thead><tr><th>List-I (name of material)</th><th>List-II (% age of carbon)</th></tr></thead><tbody><tr><td>(A) hypo-eutectoid</td><td>(1) 4.3-6.67</td></tr><tr><td>(B) hyper eutectoid</td><td>(2) 2.0-4.3</td></tr><tr><td>(C) hypo-eutecticcast iron</td><td>(3) 0.8-2.0</td></tr><tr><td>(D) hyper-eutecticcast iron</td><td>(4) 0.008-0.8</td></tr></tbody></table> <p>Codes:</p> <table style="margin-left: 40px;"><thead><tr><th></th><th>A</th><th>B</th><th>C</th><th>D</th></tr></thead><tbody><tr><td>(a)</td><td>4</td><td>3</td><td>2</td><td>1</td></tr><tr><td>(b)</td><td>1</td><td>3</td><td>2</td><td>4</td></tr><tr><td>(c)</td><td>4</td><td>1</td><td>2</td><td>3</td></tr><tr><td>(d)</td><td>1</td><td>2</td><td>3</td><td>4</td></tr></tbody></table>	List-I (name of material)	List-II (% age of carbon)	(A) hypo-eutectoid	(1) 4.3-6.67	(B) hyper eutectoid	(2) 2.0-4.3	(C) hypo-eutecticcast iron	(3) 0.8-2.0	(D) hyper-eutecticcast iron	(4) 0.008-0.8		A	B	C	D	(a)	4	3	2	1	(b)	1	3	2	4	(c)	4	1	2	3	(d)	1	2	3	4
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8	For a neutral solution, pH value (diamagnetic) is																																			
9	An allotropic material has (a) fixed structure at all temperatures(b) atoms distributed in random pattern																																			

	(c) different crystal structures at different temperatures (d) fixed structure but random atom distribution
10	Which machine records the change in length of specimen? a. Impact testing machine b. Universal testing machine c. Rockwell tester d. Brinell tester
11	Knurling is process of a. Cut diamond shape pattern on work piece b. Grinding c. Grooving d. Parting off
12	Boring is process of a. Making hole b. Internal hole c. In large the hole d. All of these
13	Alpha iron exists in the temperature range (a) below 768°C (b) between 768 and 900°C (c) between 900 and 1404°C (d) between 1404 and 1540°C
14	Riser is in casting a. Runner b. Reservoir of Molten metal c. Basin d. Removing of air from casting
15	The indenter used in Brinell hardness test is a a. Ball b. Cone c. Cylinder d. Pyramid
16	Pitot tube is used to measurement of a. Flow velocity b. Rate of flow c. Momentum of flow d. Vorticity of flow
17	In Charpy impact test, the specimen is kept as a. Simply supported beam b. Cantilever beam c. Overhanging beam d. Fixed ended beam
18	The average speed measurement are given by a. Centrifugal tachometer b. Drag cup tachometer c. Revolution counter and timer d. Stroboscope
19	Shrinkage fit is an Fit. a. Clearance fit b. Transition fit c. Interference fit d. All of the above
20	In the lathe, live centre is known by a. Tail Stock b. Head Stock c. Compound Rest d. Apron

1	A 10 mm diameter tensile specimen has a 50 mm gauge length. The load corresponding to the 0.2% offset is 55 kN and the maximum load is 70 kN. Fracture occurs at 60 kN. The diameter after fracture is 8 mm and the gauge length at fracture is 65 mm. Calculate the following properties of the material from the tension test. Find Tensile strength or ultimate tensile strength (UTS)
2	If we increases the diameter of the wire, twice the original one and increasing length of the wire 4 times of the original length , then the resistivity ratio of the older and newer wire configuration is :
3	The mean velocity of the water flow inside the pipe is 1 m/s and the cross section area is around 1 m ² , then the discharge of the pipe in liters/sec. is
4	If modulus of elasticity of the material is 200 MPa and the modulus of rigidity of the material is 80 MPa, then the Poisson ratio of the material is
5	One bar atmospheric pressure is equal to m of water head