DR.B.B.A.GOVERNMENT POLYTECHNIC, KARAD (D.P.)
UNIT TEST –I EXAM MAY-2009

TOTAL MARKS: 25 **DURATION: 1 HOUR**

SUBJECT : Engineering Measurement - II (320056)

ENROLMENT NO._____ **SUPERVISOR'S SIGNATURE:_____**

Instructions:

(1) Write your enrollment number in the space provided in the question paper.
(2) All questions are compulsory.
(3) Draw neat sketches wherever necessary.
(4) Assume suitable additional data wherever necessary declaring it in your answer.

[Q.1] Answer any TEN of the following. **[10]**

(1) The Watt is the unit of _____. (Power, Force, Mass)
(2) Voltmeter is always connected in _____. (Series, Parallel)
(3) As temperature increases the viscosity _____. (Decreases, increases)
(4) The area of Gujarat map can be measure with _____ method. (Planimeter, Simpson's, Counting Square)
(5) 1 cm^2 = _____ mt^2 (10^4, 10^{-4},10^6)
(6) The formula for the Volume of cylinder is _____. ($\pi r^2 h$, $\pi r^3 h$, $\pi r h^2$)
(7) 1 Dyne = _____ Nt. (10^5, 10^{-5},10^8)
(8) 1 ergs = _____ J. (10^7, 10^{-7},10^{10})
(9) 1 H.P. = _____ Watt (748, 487, 784)
(10) Formula to calculate power is _____. (P=VI, P=IR, P=VR)
(11) The Simpson's method is applicable only when the nos. of divisions of the area is _____. (even, odd)
(12)The Graph of P→ W is _____. (Straight line, Curved)
(13) The unit of Co-efficient of Static friction is _____. (gm, Nt, no unit)

[Q.2] Answer any Five of the following. **[15]**

(1) List the apparatus you used in the experiment "Measurement of Friction".

(2) List the apparatus you used in the experiment "Measurement of Moment of Inertia".

(3) Define: Power, State the unit of Power. A rating of the bulb is 40W. What does it indicate.

(4) List the apparatus you used in the experiment "Measurement of Viscosity".

(5) List the apparatus you used in the experiment "Measurement of A.C. Power".

(6) Define: Static & Dynamic friction. Explain Limiting Frictional force.

-------- END -------

DR.B.B.A.GOVERNMENT POLYTECHNIC, KARAD (D.P.)
UNIT TEST – I EXAM MAY -2009

TOTAL MARKS : 20 **DURATION : 1 HOURS**

SUBJECT : ELEMENTS OF CIVIL ENGINEERING (320007)

ENROLMENT NO._____ **SUPERVISOR'S SIGNATURE:_____**

Instructions:

(1) Write your enrollment number in the space provided in the question paper.
(2) All questions are compulsory.
(3) Draw neat sketches wherever necessary.
(4) Assume suitable additional data wherever necessary declaring it in your answer.

[Q.1] Attempt any TWO [10]

(a) Enlist instruments required for chain and tape survey with their uses.

(b) Explain the Principle's of surveying.

(c) State the uses of the following parts of prismatic compass

Object Vane, Prism, Graduated ring, Sliding Mirror and Lifting Lever

(d) Explain step –by-step procedure of temporary adjustment of Dumpy level.

(e) state the precaution to be taken while carrying out compass survey.

(f) Give the list of at least ten materials used in civil Engineering field.

[Q.2] Workout internal angles of close traverse of compass survey from following data.

Line	Fore Bearing	Back Bearing
AB	45˚ 00'	225˚ 00'
BC	300˚ 00'	120˚ 00'
CD	220˚ 00'	40˚ 00'
DA	120˚ 00'	300˚ 00'

[5]

[Q.3] Calculate Reduce Level (R.L.) from the following details. [5]

Station	Back Sight	Intermediate sight	Fore Sight	Remark
T.B.M.	1.600	-	-	On Temporary Bench Mark
S1	-	1.700	-	
S2	-	1.900	-	
S3	-	2.200	-	
S4	-		2.000	

T.B.M. Mark value is 10.000 meter. Show Arithmetic Check.

------- END -------

DR.B.B.A.GOVERNMENT POLYTECHNIC, KARAD (D.P.)
UNIT TEST –I EXAM MAY-2009

TOTAL MARKS: 20 **DURATION: 1 HOUR**

SUBJECT : NON-CONVENTIONAL ENERGY SOURCES (320005)

ENROLMENT NO._____ **SUPERVISOR'S SIGNATURE:_____**

Instructions:

(1) Write your enrollment number in the space provided in the question paper.
(2) All questions are compulsory.
(3) Draw neat sketches wherever necessary.
(4) Assume suitable additional data wherever necessary declaring it in your answer.

[Q.1] Fill in the blanks. (Any Ten).

1. _____ is used mainly as fuel for heating and cooking (Petrol, Diesel, Kerosene)
2. The _____ energy comes from the fusion of hydrogen into helium under high temperature and pressure. (Solar, Ocean, wind)
3. _____ sources are used for the transportation. (Conventional, Non-conventional, renewable)
4. _____ instruments measures intensity of dissert solar radiation normal incident. (Pyroheliometer, Pyrnometer, Pyre geometer)
5. _____ the heat transfer co-efficient is increased by wing fines on the flat plate absorber. (Finned-plate collector, simple flat-plat collector, corrugated plate-collector)
6. _____ collector has a paint focus system instead of lined focused. (fresnel lens, parabolic dish collector, cylindrical parabolic)
7. _____ blades are made from sheet metal or aluminum. (Single, two, multiple)
8. _____ is an important structure for mounting the rotor blades and other device. (Tower, Control system. generator)
9. _____ is used to adjust the rotor in the wind direction so as to have a maximum wind speed. (Pump, wind vane. Crank)
10. The _____ is available from ultraviolet and infrared rays of the solar spectrum. (Nuclear, solar, wind)
11. _____ is also popularly known as floating gas holder type model is used in this country. (Batch-Plant, floating dome, fixed-dome)
12. _____ includes all processed where organic material is heated or partially combustion to produce secondary fuels and other chemicals. (Methanol, Pyrolysis, ethanol).

[Q.2] Attempt any Two.

1. Comparison between conventional and non- conventional energy sources.
2. Mention different types of pyronometer and described any one of them.
3. Explain the terms.
   (a) Power co-efficient
   (b) Energy pattern factor
4. Explain the concept of energy plantation. Mention the species used for energy plantation.

---END---

DR.B.B.A. GOVERNMENT POLYTECHNIC, KARAD (DP)

2ND SEMESTER

MID SEMESTER REMEDIAL EXAMINATION

FUNDAMENTALS OF ELECTRICAL ENGINEERING

DURATION: - 1 HOUR MAX. MARKS: - 20

NOTE: - ANSWER ANY FOUR QUESTIONS

Q-1 Define : - 1) RMS Value
2) Average Value
3) EMF
4) Energy
5) Power Factor

Q-2 State the Faraday's laws of electromagnetic inductions and define inductance.

Q-3 State the Units of Resistance, flux, current, voltage, power, energy, flux density, power factor, inductance.

Q-4 Draw the connection diagram of ammeter, voltmeter, Wattmeter, energy meter and power factor meter for a single phase supply.

Q-5 Explain the power triangle and define true power, reactive power and apparent power.

DR.B.B.A.GOVERNMENT POLYTECHNIC, KARAD (D.P.)
UNIT TEST –I EXAM MAY-2009

TOTAL MARKS: 20 **DURATION: 1 HOUR**

SUBJECT : Programming in 'C' (320016)

ENROLMENT NO._____ **SUPERVISOR'S SIGNATURE:_____**

Instructions:

1. Write your enrollment number in the space provided in the question paper.
2. Answer **ALL** questions.
3. Draw neat sketches wherever necessary.
4. Assume suitable additional data wherever necessary declaring it in your answer.

Q-1 Evaluate following arithmetic expression (2)

(a) 40 / 3 % 5 + 4 * 8

(b) 30 / 4 * 4 – 20 % 6 + 17 / 2

Q-2 Answer following question(any one) (2)

(a) Explain Ternary Operator

(b) List Basic Data types available in 'c' along with their size & range

Q-3 Answer following Questions (6)

(a) Explain Decision making If Statement. List various forms of If..else.

(b) Explain for loop with example.

Q-4 Attempt any one (2)

(a) Write a 'c' program to check whether given Year is a Leap Year or not.

(b) Write a 'c' program to check whether given Number is Odd or Even.

Q-5 Attempt any 1 (4)

(a) Write a 'c' program to find out maximum out of three numbers.

(b) Write a 'c' program to find out Factorial of a given value.

Q-6 Select the correct one (4)

(a) Which one of the following is the data type in 'C'

(i) Integer (ii) Tangent (iii) Sin (iv) Cos

(b) Size of Float Data Type

(i) 2 (ii) 4 (iii) 3 (iv) 5

(c) Which is the Equality Operator in 'C'

(i) = (ii) = = (iii) <> (iv) !

(d) Remainder can be obtained using which Operator

(i) OR (ii) MOD (iii) % (iv) AND

---END---

DR.B.B.A.GOVERNMENT POLYTECHNIC, KARAD (D.P.)
UNIT TEST –I EXAM MAY-2009

TOTAL MARKS : 20 **DURATION : 1 HOURS**

<u>SUBJECT :</u> Civil Engineering Drawing (320006)

ENROLMENT NO._____ **SUPERVISOR'S SIGNATURE:_____**

<u>Instructions:</u>

(1)Write your enrollment number in the space provided in the question paper.
(2) Answer all questions.
(3)Draw neat sketches wherever necessary.
(4)Assume suitable additional data wherever necessary declaring it in your answer.

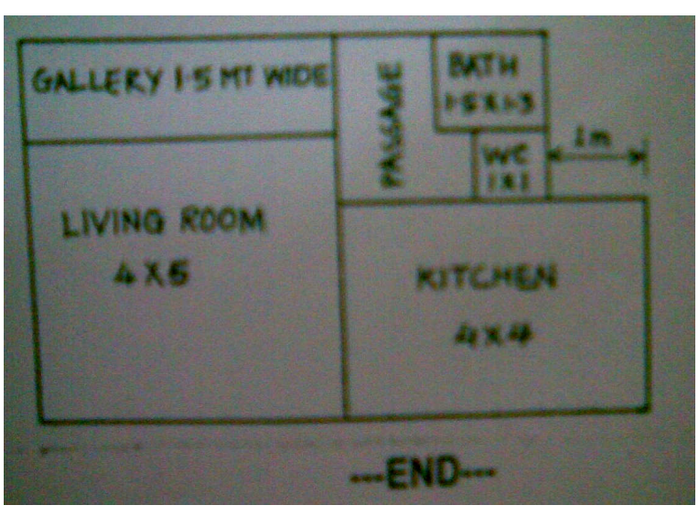
{Q.1] Draw the Symbols (Any Two) (2)
(a) Brick work
(b) Revolving door
(c) Building
(d) Stair

[Q.2] Write Short Names (Any Four) (2)
(a) Aggregate
(b) Concrete cement
(c) Man Hole
(d) Mild steel
(e) Water Closet
(f) Road level

[Q.3] Show the Position of the views in the Combination of Ist and 3rd angle projection method. (4)

[Q.4] Explain any two Principles of Planning. (4)

[Q.5] Draw the Detail Plan from the given Line Plan . (8)
(Wall Thickness : 20 cm, Scale 1:50, Assume other required data)



---END---

DR.B.B.A.GOVERNMENT POLYTECHNIC, KARAD (D.P.)
UNIT TEST –I EXAM MAY-2009

TOTAL MARKS : 20 **DURATION : 1 HOURS**

SUBJECT : ELECTRONICS DEVICES & CIRCUITS-I (320017)

ENROLMENT NO._____ **SUPERVISOR'S SIGNATURE:_____**

Note:-Each question has five marks.

Q-1 Explain the difference between Conductors, Semiconductors & Insulators by showing their energy levels.

OR

Q-1 Draw the V-I Characteristics of PN junction & explain the forward and reverse biased condition and explain avalanche breakdown & zener breakdown.

Q-2 Write the short note of Any Two.
(i) Varacter diode (ii) Schottkey diode (iii) Tunnel diode (iv) Photodiode.

Q-3 What is SMPS explain the same in detail with the help of block diagram.

OR

Q-3 Compare CB,CE,CC configuration.

Q-4 How will you draw a dc load line for CE configuration circuit.

OR

Q-4 Discuss current limiting in series voltage regulator.

----END---

DR.B.B.A.GOVERNMENT POLYTECHNIC, KARAD (D.P.)

UNIT TEST –I EXAM MAY-2009

TOTAL MARKS : 20 **DURATION : 1 HOURS**

SUBJECT : Electrical Circuits (320009)

ENROLMENT NO._____ **SUPERVISOR'S SIGNATURE:_____**

Note:- Attempt any four(Each question has five marks)

Q-1 (a) Classify capacitors and explain briefly.

(b) Capacitors of 5, 10 and 15microfarad are connected in series. Find equivalent capacitance.

Q-2 (a) Derive an expression for energy stored in a capacitor.

(b) A capacitor of 50 microfarad is charged to 100v. Find energy stored in it.

Q-3 (a) Define following terms.

(i) Cycle (ii) Time period (iii) Frequency (iv) Form factor (v) Peak factor.

(b) An alternating emf is represented by e= 200sin2Π50t. Find (i) Maximum value (ii)Frequency (iii) Time Period (iv) Angular frequency.

Q-4 (a) Show that power consumed by a pure inductor is zero.

(b) A pure inductor having inductance of 0.3H is connected to 400V,50Hz supply. Write the equation of current flowing through the inductor.

Q-5 (a) Define following terms.

(i) Power factor (ii) Active power (iii) Reactive power (iv) Apparent power.

(b) A resistance of 10 ohm and an inductance of 0.2h are connected in series across 230V, 50Hz supply. calculate (i) inductive reactance(ii) Impedance (iii) Current (iv) Power factor (v) Active power.

----END----

DR.B.B.A.GOVERNMENT POLYTECHNIC, KARAD (D.P.)
UNIT TEST –I EXAM MAY-2009

TOTAL MARKS: 20 **DURATION: 1 HOUR**

SUBJECT : ELEMENTS OF MECHANICAL ENGG. (320003)

ENROLMENT NO._____ **SUPERVISOR'S SIGNATURE:_____**

Instructions:

(1) Write your enrollment number in the space provided in the question paper.
(2) Answer any **four** questions. All carry **05** marks.
(3) Draw neat sketches wherever necessary.
(4) Assume suitable additional data wherever necessary declaring it in your answer.

[Q:1] Define slip, state the effects of slip and also state the methods to reduce the slip.

[Q: 2] State the different types of gears and explain any one type of gear with neat sketch.

[Q: 3] State the causes of accident in industries.

[Q: 4] Classify I.C Engines

[Q: 5] Explain working principle of 2-stroke petrol engine with neat sketches

---END---

DR.B.B.A.GOVERNMENT POLYTECHNIC, KARAD (D.P.)
UNIT TEST –I EXAM May-2009

TOTAL MARKS: 20 **DURATION: 1 HOUR**

SUBJECT : MECHANICAL DRAFTING (320008)

ENROLMENT NO._____ **SUPERVISOR'S SIGNATURE:_____**

Instructions:

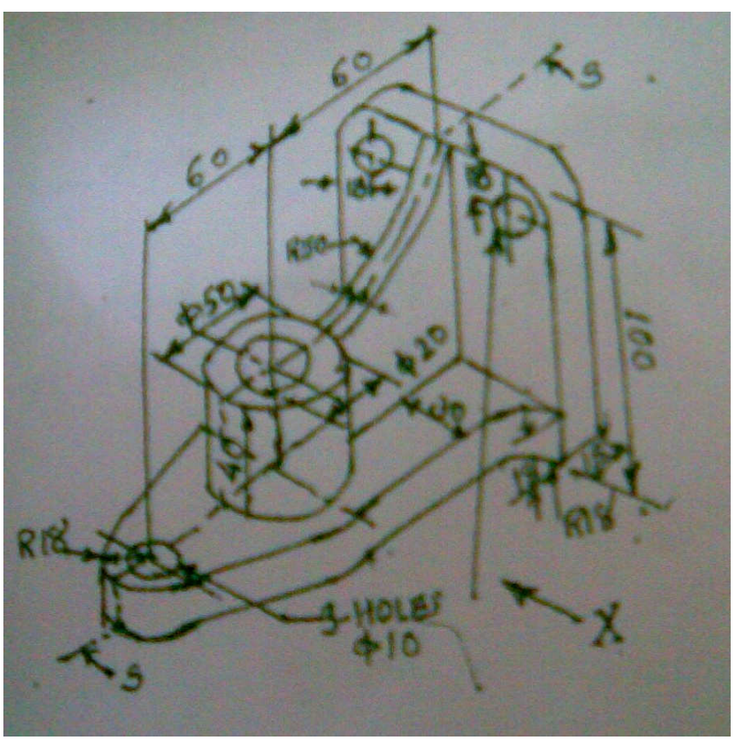
1. Write your enrollment number in the space provided in the question paper.
2. Answer **ALL** questions. Each carries **10** marks.
3. Draw neat sketches wherever necessary.
4. Assume suitable additional data wherever necessary declaring it in your answer.

[Q.1] For the pictorial view shown Draw the following views.
(a) Sectional front view looking from X
(b) Left side view (c) Bottom view

[Q 2] A hexagonal Pyramid side of the base 30mm and axis 60mm rests on its base on H.P such that one of the base edges perpendicular to V.P, It is cut by a section plane perpendicular to H,P and inclined at 45 to V.P and passing through the pyramid at a distance of 10mm from the axis.
a) Draw its sectional front view.
True Shape of the section

OR

[Q.2] A hexagonal pyramid of base of the side 30 and axis 70 is resting on one of its base edge on the H.P. This edge makes an angle of 30 to the V.P. and the face containing this edge makes an angle of 45 to the H.P. Draw its Projections.



-----END-----

Dr. B.B.A. Govt Polytechnic, Karad (D.P.)

Mid-semester (Remedial) Exam.

Subject:- Maths-II

Date:- 12/08/19

Time:- 11.00 - 12.00

Max^m. Marks - 20.

Attempt any five of the following.
(each for 04 marks)

Q.1:- If $f(x) = \frac{1+x}{1-x}$, prove that-

$$f\left(\frac{x+y}{1+xy}\right) = f(x) \cdot f(y)$$

Q2:- Evaluate $\lim_{x \to 2} \left\{ \frac{1}{x-2} - \frac{2}{x^2-2x} \right\}$.

Q3:- find $\frac{dy}{dx}$ of $y = \sin x$ by using definition

Q.4:- find $\frac{dy}{dx}$ where $y = \sin(x+y)$

Q.5:- find velocity & acceleration for the eq^n. of motion $s = t^3 + 2t^2 - 3t + 5$ at $t=1$ & $t=2$ sec.

Q.6:- find $\int \sec^2 x \cdot \operatorname{cosec}^2 x \, dx$

Q.7:- find $\int \frac{2 + \cos x}{\sin^2 x} dx$.

Q.8:- find $\int \frac{\cos(\log x)}{x} dx$.

—x—

---END---

DR B.B.A GOVERNMENT POLYTECHNIC, KARAD (DP)

2ND SEMESTER

MID-SEMESTER (REMEDIAL) EXAMINATION

APPLIED SCIENCE-II (APPLIED CHEMISTRY)

DURATION: 1 HR **MAX MARKS: 20**

Q No. 1 Define the following terms. ANY 4…….. (4 Marks)

(a) pH (b) Atomic Number (c) Cloud and pour point (d) Covalent Bond

(e) Priming and Foaming (f) Corrosion

Q No. 2 Fill in the blanks. Any 6…… (6 Marks)

(a) _____ + _____ ------→ Bakelite (Phenol-Formaldehyde Resin)

(b) _____ + _____ ------→ Buna-S Rubber

(c) A material which can withstand high temperature without softening and deformation is known as _____

(d) _____ polymer is used in the manufacture of tyres and tubes of automobiles.

(e) _____ is used as insulating material in sound proofing systems.

(f) _____ on polymerization forms PTFE which is a _____ of electricity.

(g)The electronic configuration of Nitrogen (N) is _____.

Q No. 3 Answer the following questions…… (3 Marks)

(a) Write a short note on Hydrogen Bond OR Explain Electro Refining?

(b) Differentiate between PAINTS and VARNISH OR Ionic Equilibrium Constant (Kw) for Water?

Q No. 4 Answer the following questions…… (2 Marks)

(a) Explain the construction and working of an Electro Chemical Cell OR Explain Sacrificial Anode Protection?

(b) Write a short note on N and P type semiconductors OR Explain Sedimentation and Coagulation methods of purifying water?

---END---