PH132 Exam 5 Spring 2005

Student Name_____

Student Number_____

Lab/Recitation Section Number_____(11,…,35)

Instructions:

1. Fill out all the information above. Write your name on each page. – no, seriously. We throw the tests into a pit of wolverines and they tend to get mixed up slightly.

2. Clearly indicate your final answers for all multiple-choice questions in the space provided.

3. Although we will not look at them, present neat and orderly solutions to each problem, using the following rules; 1.17 inch margins with justified type, handwriting must be in Times New Roman π point font, write on the back of the page only if 74% of the previous page has been used, otherwise write additional work on hand and staple hand to the test, following page 3.

4. Be sure to state answers in terms of all known units. For example power must be expressed as: Watt, megawatt, kilowatt, kilocalories per second, calories per second, horsepower, joule per second, joule per hour , erg per second, British Thermal Unit per second, British Thermal Unit per minute, British Thermal Unit per hour, foot pound-force per second, Monopoly Money, Gum Drops, Pogs, and Pokémon Cards.

5. Note:
   One dollar in Monopoly Money = –[log(Ж)·(±∞)+(⅓·♫)] USD
   When playing Yahtzee always use the natural log.
   Assume 🎩 is the "Top Hat" direction.

Multiple Choice _____

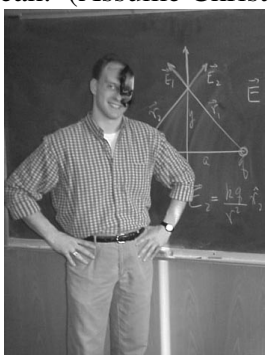
Problem 1 _____

Problem 2 _____

Total_____

Multiple Choice (2 pts. each)

1) Given the following diagram, which vector on the Mineral Calcium Carbonate Projection Plane represents the force vector needed to activate a Flux Capacitor traveling at 39.33952 m/s in an Anodized Golden DeLorean. (Assume Christopher Lloyd is present at the time)



A) E_1
B) E_2
C) r_1
D) r_2
E) None of the below. Answer_____

2) According to the above a photograph, are there any suspicious traits that can be inferred about Professor Wick?

A) No, not at all.
B) There seems to be some anomalies present.
C) Yes, he is actually the Wicktron v.3000 Physics Bot from the year 2452.
D) No comment due to the known repercussions of revealing the truth.
E) What photo?
F) 51.2% of the above. Answer_____

3) Find the equivalent capacitance of the following circuit:

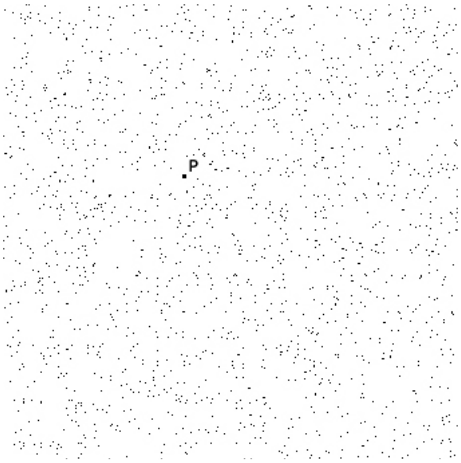
A) ∞ F
B) -1 μF
C) $\log_2(\spadesuit)$ macroFerrets
D) Yes, he is actually the Wicktron v.3000 Physics Bot from the year 2452.
Answer_____

4) The previous problem is an example of what type of problem?

A) Post-Modern
B) Classic
C) Harlem Renaissance
D) Prehistoric

Answer_____

5) Find the net electric field at point P. (Assume all point charges are +q.)



A) +617q V/m
B) 0 V/m
C) ♫ V/m
D) +112q 🎩 V/m

Answer_____

6) What is the minimum force required to lift an X-Wing fighter from the murky depths of the bog?

A) 20 Newtons
B) 3.14 Fig Newtons
C) 1.21 Gigawatts
D) 14 metaclorians per Yoda

Answer_____

7) True or False: Does the revrect direcfridge of the bionomelic contripulation undergoing dislaterticipicips misdipoleineratinmythcation reimpede the antispiriculate moth?

A) 14 alpha particles
B) $\infty \pm 4$ Wb
C) Antidisestablishmentarianism
D) Only Vin Diesel truly knows.

Answer_____

8) Let me set up the basic story line: A point charge of +15q is located at the nose of a conductive puppy. What is the net electric flux through Jupiter? (Assume the planets are aligned in a Gaussian XY Scatter Plot)

A) (6.0 x 10^{π}) T
B) 14 Filibusters
C) True
D) False

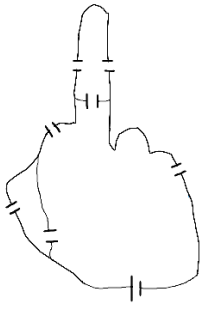
Answer_____

9) A pole-vaulter with a 9.3 cubit pole runs into a 7.4 cubit long barn. At what velocity does the pole-vaulte[redacted] Who's driving the bus?

A) 2.9 x 10^{8} m/s
B) Wick
C) George Jetson
D) Mr. T
E) Jabba the Hutt

Answer_____

10) Given the following circuit, find the equivalent turkey gravy.



A) 42 lbs.
B) D
C) A
D) B
E) C

Answer_____

Problem 1

A gravy boat of charge is floating through space. It's a very classic problem. Assume that there is presently no gravy in the gravy boat of charge.
(**Note:** Ignore the plate.)

• P

a) Find an expression for the *electric field* through point P

b) Use *Chestnut Stuffing's* law to find the *gravy flux* through point P.

c) Find the *force on point P* if P is a +q point charge. The surface area of the gravy boat is $5/r^2$. The volume of the gravy boat (without contents) is $4\pi\ln(5)$. *Hint:* ($dr = sd\theta$)

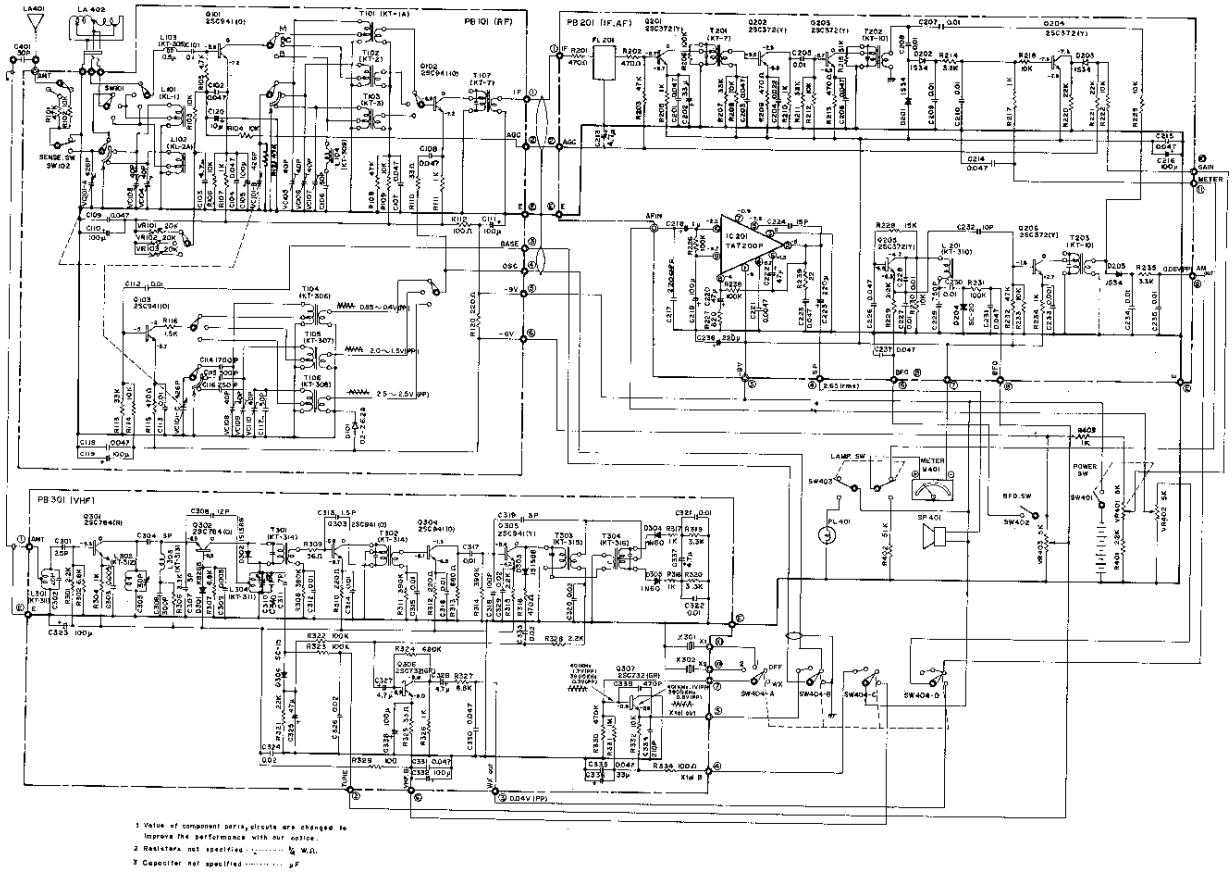
d) What *number* is *Wick* thinking of right *now*? *Hint:* (dr still equals $sd\theta$)

BONUS: Assume that the gravy boat contains a *magical* genie. What would *Chestnut Stuffing* wish for on his *second* wish? (Assume Christopher Lloyd is present.)

Problem 2

The following diagram is of the main board processing unit on the Navigator 555A. The Navigator doesn't follow the *classic* rules that we may or may not have discussed in class. It uses a unique combination of AC and DC current to create anti-matter. Assume all unlabeled components don't exist yet in *your* time.

(**Note:** Dr. Jim is a pansy.)



Navigator 555A Schematic Diagram

a) Add a *capacitor* somewhere into the diagram to allow the *Navigator 555A* to circumnavigate the *globe*. *Hint:* ($dr \neq sd\theta$)

b) 0101011101101001011000110110101100100000011010010111001100100000*01100111 0110111101100100*

c) Find the equivalent *capacitance*. Then find the *voltage* across *each* capacitor, and the *charge* that each *capacitor* holds.

d) Insert a *Light Emitting Diode* somewhere in the circuit so it would posses the power of a *million* suns.

BONUS: On the back of this page, draw a topographical map of Egypt to the nearest 10 feet. Your answer should contain an undisclosed amount of significant figures.