

غلاف ورقة الأسئلة

Question Paper Cover |

العلوم الاساسية	القسم Department	عمادة السنة التحضيرية	الكلية College
التوقيع Signature	2017/1/23	التاريخ Date	اليوم Day
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...../د	الاسم Name	Editing Committee	التوقيع Signature

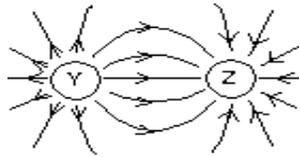
الاختبار النهائي من الفصل الدراسي الأول للعام الجامعي 1438/1437

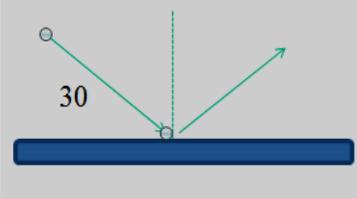
Final Exam : First Semester 1437 / 1438

معلومات الطالب / Student Information			
اسم الطالب Student Name	الرقم الجامعي ID		
معلومات المقرر			
مسئ المقرر Course Title	الفيزياء العامة	رقم المقرر ورمزه Course Code	فيز 106
معلومات الاختبار			
رقم الشعبة Section Number			
فترة الاختبار Exam Period	12.30 – 10.30	زمن الإختبار Exam Duration	ساعتان
الدرجة الكلية Exam Mark	40	يتكون الاختبار من عدد Pages	7 ورقة Paper
توزيع الدرجات			
السؤال Question	العظمى Fullmark	درجة الطالب Student Mark	بعض تعليمات الاختبار
1 الأول	28		عزيزي الطالب /
2 الثاني	4		حرصاً على أدائك الاختبار بشكل نظامي يجدر بك العناية بالآتي :
3 الثالث	3		▪ الكتابة تكون بالقلم الأزرق فقط.
4 الرابع	2		▪ الغش أو الشروع فيه أو الاخلال بنظام الاختبارات ، يعرضك للجزاء المنصوص عليه في لائحة تأديب الطلاب.
5 الخامس	3		▪ يمنع نهائياً إحضار الهواتف الجوال في قاعة الاختبار ومن يضبط معه هاتف الجوال سوف تسحب ورقته ويحرر له محضر محاولة غش .
-	40		▪ على كل طالب إحضار أدواته الخاصة حيث أنه لا يسمح بتبادل الأدوات بين الطلبة.
-	60		▪ يمنع الخروج من الاختبار قبل مضي نصف ساعة من بداية الاختبار ، ولا يحق للطالب المتأخر أكثر من نصف ساعة دخول الاختبار .
-	100		
(Written/كتابة)			

1	A	B	C	D	E
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24	A	B	C	D	E
25	A	B	C	D	E
26	A	B	C	D	E
27	A	B	C	D	E
28	A	B	C	D	E

Q1: Choose the correct answer in each of the followings: (28 Marks)

<p>1. Like signed charges each other:</p> <p>A) Repel B) Attract C) Conductors D) Insulators E) None of them</p>	<p>5. The units of electric field is :</p> <p>A) N/C B) $C^2/N.m^2$ C) V /m D) (A+C) E) None of them</p>
<p>2. Force between two point charges is directly proportional to magnitude of two charges and inversely proportional to distance squared , this represent:</p> <p>A) Newton's 2nd law B) Coulomb's Law C) Archimedes' Principle D) Joule 's Law E) None of them</p>	<p>6. The diagram shows the electric field lines in a region of space containing two small charged spheres (Y and Z). Then:</p>  <p>A) Y is negative and Z is positive B) Y and Z must have the same sign C) The electric field is strongest midway between Y and Z D) Y is positive and Z is negative E) None of them</p>
<p>3. An electrical insulator is a material:</p> <p>A) Containing no electrons B) Through which electrons do not flow easily C) Which has more electrons than protons on its surface D) cannot be a pure chemical element E) None of them</p>	<p>7. Elements with the same number of protons, but a different number of neutrons.</p> <p>A) isotopes B) isobars C) isotones D) nuclear radiation E) None of them</p>
<p>4. The units of K is:</p> $k = \frac{1}{4\pi\epsilon_0}$ <p>A) N/C B) $C^2/N.m^2$ C) V /m D) $N.m^2/C^2$ E) None of them</p>	<p>8. Complete the nuclear equation :</p> ${}_{90}^{230}Th \rightarrow Ra + {}_2^4He$ <p>A) ${}_{90}^{230}Th \rightarrow {}_{92}^{226}Ra + {}_2^4He$ B) ${}_{90}^{230}Th \rightarrow {}_{92}^{234}Ra + {}_2^4He$ C) ${}_{90}^{230}Th \rightarrow {}_{88}^{234}Ra + {}_2^4He$ D) ${}_{90}^{230}Th \rightarrow {}_{88}^{226}Ra + {}_2^4He$ E) None of them</p>

<p>9. The prefix micro equals</p> <p>A) 10^{-3} B) 10^{-6} C) 10^{-1} D) 10^{-9} E) None of them</p>	<p>13. A ball is held 50 cm in front of a plane mirror. The distance between the ball and its image</p> <p>A) 0 B) 100 cm C) 50 cm D) 200 cm E) None of them</p>
<p>10. 1 mi is equivalent to 1609 m, so 55 mi/h is:</p> <p>A) 14.3 m/s B) 25.6 m/s C) 71.6 m/s D) 123.4 m/s E) None of them</p>	<p>14. Light with a wavelength of 600 nm in air enters water. What is its wavelength in the water?</p> <p>if the $n_{\text{air}} = 1$, $n_{\text{water}} = 1.33$</p> <p>A) $\lambda = 655$ nm. B) $\lambda = 600$ nm. C) $\lambda = 451$ nm. D) $\lambda = 798$ nm. E) None of them</p>
<p>11. The SI base units have the dimensions of:</p> <p>A) mass, weight, time B) length, density, time C) mass, length, time D) weight, length, time E) None of them</p>	<p>15. If the ray of light incident at an angle of 30° with the surface, Depending on the figure, the angle of incident and the angle of reflection respectively equals :</p> <p>A) $30^\circ, 30^\circ$. B) $30^\circ, 60^\circ$. C) $60^\circ, 30^\circ$. D) $60^\circ, 60^\circ$ E) None of them</p> 
<p>12. An erect object is located on the central axis of a spherical mirror. The magnification is (-4)</p> <p>This means its image is:</p> <p>A) real, inverted, and magnified B) virtual, erect, and magnified C) real, erect, and diminished D) real, inverted, and diminished E) None of them</p>	<p>16. (r and f) for (Convex and concave) mirrors are respectively :</p> <p>A) positives negatives B) negatives, negatives C) negatives , positives D) positives , positives E) None of them</p>

<p>17. The equation is :</p> $\frac{1}{p} + \frac{1}{i} = \frac{1}{f} = \frac{2}{r}$ <p>A) for convex mirror B) for concave mirror C) for lens D) (A+B) E) None of them</p>	<p>22. Radioactive ^{90}Sr has a half-life of 30 years. What percent of a sample of ^{90}Sr will remain after 60 years?</p> <p>A) 75 % B) 50 % C) 25 % D) 12.5 % E) None of them</p>
<p>18. $(4.0 \times 10^4) \times (3.0 \times 10^{-7}) =$</p> <p>A) 1.3×10^{-3} B) 1.2×10^{-2} C) 1.5×10^1 D) 1.2×10^3 E) None of them</p>	<p>23. The least penetrating radiation is:</p> <p>A) Alpha particles B) Beta particles C) Gamma ray D) (B+C) E) None of them</p>
<p>19. The SI base unit for mass is:</p> <p>A) gram B) pound C) kilogram D) ounce E) None of them</p>	<p>24. Absorbed dose unit:</p> <p>A) Gray B) Rad C) Sievert D) (A+B) E) None of them</p>
<p>20. Laws of reflection</p> <p>A) The incident ray, the refracted ray and the normal all lie in the same plane. B) The incident angel = the reflected angel. C) $n_1 \sin \theta_1 = n_2 \sin \theta_2$ D) (A+B) E) None of them</p>	<p>25. The dimension of velocity is</p> <p>A) [L T] B) [L⁻¹ T] C) [M T⁻¹] D) [L T⁻¹] E) None of them</p>
<p>21. The ratio of velocity of light in vacuum to the light in medium is?</p> <p>A) Index of refraction. B) Index of reflection. C) Incident of angle. D) Refraction angle. E) None of them</p>	<p>26. Let Z denote the atomic number and A denote the mass number of a nucleus. The number of neutrons in this nucleus is:</p> <p>A) Z B) A C) A – Z D) A – 2Z E) None of them</p>

<p>27. The dimension of density is</p> <p>A) [L T]</p> <p>B) [L⁻¹ T]</p> <p>C) [M L⁻³]</p> <p>D) [L T⁻³]</p> <p>E) None of them</p>	<p>28. A nanosecond is:</p> <p>A) 10⁹ s</p> <p>B) 10⁻⁹ s</p> <p>C) 10⁻⁶ s</p> <p>D) 10⁻¹⁵ s</p> <p>E) None of them</p>
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Q2:

(3 Marks)

(a) Calculate the location of the image if the object is, (60 cm), in front of a concave mirror with a focal length of 20 cm.

(b) Find the magnification.

(c) Find The characteristics of image

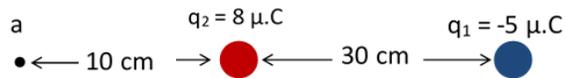
Q3: Tritium Tm with mass (m_0) of 88 grams has a half-life of 12.3 years, find:

1. The decay constant (λ)
2. Mass (m) of Tritium Tm after 49.5 year.

(3 Marks)

Q4: Using data the figure beside: Calculate the Electric potential (V) at a point(a).

(2 Marks)



Q5: Using data the figure beside, find:

(4 Marks)

- 1) Electric field at point(P).
- 2) Electric force on charge ($q = -1 \mu\text{C}$) at point(P).

