جامعة المنصورة كلية العلوم قسم الرياضيات	المستوي الثالث جولوجيا المادة : إحصاء تطبيقي(302) الاختبار النهائي لمقرر الاحصاء التطبيقي الزمن ساعتان	

Answer the following Questions:

Q.1

a. Suppose that we have a population of 5 population values

$X_1 = 41, X_2 = 30, X_3 = 35, X_4 = 22, X_5 = 27$.

Suppose that we randomly select a sample of size 3 and the sample values we obtained

$x_1 = 3, x_2 = 35, x_3 = 27$.

1. Find the population mean and variance.
2. Find the sample mean and the sample variance
3. Using the given sample find the point estimate of the population mean.

b. Consider the following frequency table of the Hemoglobin level of the sample of 50 men

C.I. of Hemoglobin level	True C. I.	Freq. No. of men f_i	Cumulative Freq.	Mid-Point m_i	$m_i f_i$	$m_i^2 f_i$
13.0 – 13.9	12.95 – 13.95	3	3	13.45	40.35	542.7075
14.0 – 14.9	13.95 – 14.95	5	8	14.45	72.25	1044.0125
15.0 – 15.9	14.95 – 15.95	15	23	15.45	231.75	3580.5375
16.0 – 16.9	15.95 – 16.95	16	39	16.45	263.2	4329.64
17.0 – 17.9	16.95 – 17.95	10	49	17.45	174.5	3045.025
18.0 – 18.9	17.95 – 18.95	1	50	18.45	18.45	340.4025
		50			800.5	12881.7

1. Evaluate the sample mean
2. Evaluate the sample variance
3. Evaluate e the sample coefficient of variation.

Q.2

339 Physicians are classified as follows.

Age	*Daily* B_1	*Occasionally* B_2	*Not atAll* B_3	*Total*
20 – 29 (A_1)	31	9	7	47
30 – 39 (A_2)	110	30	49	189
40 – 49 (A_3)	29	21	29	79
50 – +(A_4)	6	0	18	24
Total	176	60	103	339

Experiment is selecting a physician at random: find the following probabilities

1. The selected physician is aged 20 – 29.
2. The selected physician is aged and smokes occasionally 40 – 49.
3. The selected physician is aged 20 – 29 or aged 40 – 49.

Q.3

a. Suppose that in a certain city, the probability that a man has high blood pressure is 0.25
If we randomly select 5 men from this city, find

1. The probability distribution of the number of men out of 5 with high blood pressure.
2. The expected number of men out of 5 with high blood pressure.
3. The probability that the men out of 5 with high blood pressure is zero.

من فضلك اقلب الورقة لباقي الأسئلة

b. Suppose that the number of snake bites cases seen at Mansoura University Hospital in a year has Poisson distribution with average is 6 bite cases find the probability that the number of snake bite will be 7 .

c. Let X denotes the number of patients admitted to clinic in a day. The following table gives the probability distribution of X

X	0	1	2	3
$p(X = x)$	0.2	0.4	0.3	k

1. The value of the constant k is
2. The probability that on a given day, at least two new patients admitted to the clinic.
3. The expected number of admissions per day to the clinic.

مع اطيب التمنيات بالنجاح أ.د. عوض الجوهري

Mansoura University
Faculty of Science
Geology Department

جامعه المنصوره
كلية العلوم
قسم الجيولوجيا

Paleomagnetic Final Exam (Third level Geophysics)

2015/ 5 /18 االمغناطيسيه القديمه جف ٣٠٥ (المستوى الثالث برنامج الجيوفيزياء)

Answer the Following Questions (Total mark 60)

1- Compare between the following: (20 mark)

a- Soft and hard magnetization

b- IRM and DRM magnetization

c- Spinner and static magnetometer.

d- Normal and reversed magnetic field

e- Thermal and chemical cleaning of the rock sample

2- Choose YES (✓) or NO (X) and correct the wrong: (20 mark)

a) Sun compass are used to measure dip and strike of the sample
b) Based on APW paths, we can calculate palaeolatitudes and plate velocities for a specific geographical location
c) The global pattern of magnetic reversals is regular and periodic.
d) Magentostratigraphic correlation of rock sections based on their magnetic polarity zonation.
e) Sedimentary rocks are weakly magnetized, and proton magnetometers, are required to measure and their magnetization history.
f) Most magnetic minerals lose their magnetization at a certain temperature, called the demagnetization point.
g) The DRM occurs when igneous rock solidifies and cools below the TC.
h) Koenigsberger Ratio Q is measure of ratio of intensity of induced to remnant magnetization.
i) Demagnetization destroys the stronger (primary NRM) while the weaker (secondary NRM) remains.
j) In paleomagnetic it is important to sample rocks at widely separated localities (perhaps separated by as much as several hundred km).

3- Define the following: (10 mark)

a) Bedding-tilt correction
b) NRM stability test
c) Secular geomagnetic variations
d) Geomagnetic time scale

4- State why: (10 mark)

a) Thermal cleaning is usually applied for hematite bearing rocks.
b) We measure 6 to 12 samples for a single site.
c) Repetition of magnetic polarity on some parts of oceanic crust.
d) Q-factor is usually high in volcanic rocks.

*Prof. Dr. Hosni Ghazala** *prof. Ahmed Abdel Latif* *Dr. Ahmed Galadi* *Dr. Hamdi Serag*

Mansoura University Faculty of Science Physics Department	Geophysics, 3rd Year	2nd Semester, 2014-2015 June, 2015 Time: 2 Hours

Solid State Physics (Ph 334)

Final Examination *(Full mark: 80 degrees)*

Answer the following Question:		Mark
1.a)	Deduce the atomic radius, r at each type of cubic family.	6
b)	Study in details point defects.	7.5
c)	Find the density of packing for B.C.C, F.C.C and S.C.	7.5
d)	A transmission Lau photograph is made with a cubic crystal of lattice parameter 4A. Calculate the minimum distance from the center of the pattern of reflections from the {111}plans of the specimen is 5 cm from the film and the X-ray tube voltage is 40kV,Planck's constant is 6.62×10^{-34}J.s, light velocity is 3×10^{8}cm/s& electron charge is 1.6×10^{-19} C .	6
2.a)	Prove that the perpendicular distance between adjacent members of the same family {hkl} in S.C = $a/\sqrt{h^2+k^2+l^2}$, where a is the length of the cube edge.	7.5
b)	Find the zone axes direction [uvw] if the two planes have Miller indices (121) and (13 0) are in the zone.	7.5
c)	A certain orthorhombic crystal has axial units a, b, c of 0.424, 1, 0.367. Find the Miller indices of crystal faces whose intercepts are 0.212,1, 0.183.	6
d)	Verify first Fick's law.	6
3.a)	Complete the following i-) Crystal structure = Lattice + ... ii) ..... is the smallest block from which the crystal is built. iii) All the known types of lattice can be arranged in ..... crystal systems. iv) According to Bravais , there are ..... possible types of space lattice. v) The symmetry elements are: 1- ..... 2- ..... 3-.....	9
b)	Explain how one determines the activation energy for vacancy formation E_V.	5
c)	Study in details one of the experimental diffraction methods.	6
d)	If iron has B.C.C lattice structure, it's atomic weight is 55.85 and density 7.86 gm/cm^3, calculate the lattice constant of a unit cell knowing Avogadro's number $N_A = 6.02\times10^{26}$ atom / k mole.	6

With our Best wishes

Examiners:	*Prof. Dr. H. Doweidar*	*Dr. Safaa Abdel-Maksoud*

Mansoura University **May,** 25, 2015
Faulty of Science **Time allowed: 2** hours
Department of Geology **Full Marks: 60** marks

Seismic Exploration Method II (جف ٣٠٤)

Answer the following *Three* Questions

First Question **(20 Marks, 10 for each)**

1- Define seismic multiples? Write on different types of these multiples?

2-Write on the deconvolution of seismic data

Second Question **(20 Marks, 5 for each)**

Write short notes on each of the following:

1- Fold coverage
2- Interval velocity
3- Stacking
4- Dip Move Out (DMO)

Third Question **(20 Marks, 2 for each)**

Rewrite the following sentences after doing the required corrections if (exist)

a) Zero offset two way time value is usually higher than the intercept time

b) The T-ΔT relation (NMO) is inversely proportional to the length of geophone spreading and the depth of the reflecting interfaces

c) Muting means improve of noise to signal ration of seismic data

d) Low pass filter cuts high frequency signals

e) Check shot survey is a type of borehole seismic data designed to measure the seismic velocities from the surface to an unknown depth.

بقية الأسئلة فى خلف الصفحة

f) Reflectivity is defined as the ratio between the incident and reflected seismic amplitude

g) The good representation of high frequencies in samples in sampled data is known as aliasing.

h) When the reflector has dip, the traces sharing a common mid-point do not share a common depth point.

i) The root mean square (RMS) velocity is usually greater than the average velocity.

j) A wavelet is a wave-like oscillation with an amplitude that starts out at zero, increases and decreases back to zero.

لجنة التصحيح

ا.د/ حمدى حامد صيصه – ا.د/ عادل جنيدى – د/ أحمد شلبى – د/ وليد الدياسطى

Mansoura University
Faculty of Science
Geology Department
Third level
(Geology and Geophysics)
Second Term (May, 2015)

Subject: Geology
Courses: Advanced Stratigraphy (G 303)
Time allowed: TWO hours
Full mark: 60 marks
Date: 28 . 5 . 2015

Answer the following questions

Question 1: Do as shown between brackets: (18 marks)

1- In the correlation by stable isotopes, the lower values of δ^{18} O generally reflect ..... and the positive increase in δ^{13}C generally reflects ..... On the other hand the δ^{34}S curve is potentially useful as means of chronocorrelation of ..... (Complete)

2- The lithocorrelation includes (continuous lateral tracing of lithostratigrahic units - short term depositional events) (Choose the correct)

3- The system is a rank of lithostratigraphic units, whereas the period belongs to the biostratigraphic units. ((**Yes** or **No** and if No, please correct)

4- The Paleogene Period is divided into ..... , ... and ..... Epochs whereas the Late Triassic Epoch is divided into ..... , ... and ..... Ages. (Complete).

Question 2: Short notes on: (22 marks)

(a) The correlation by instrumental well logs. ***(with drawings)***

(b) The main types Biostratigraphic Units. ***(with drawings)***

Question 3: Write briefly on: (20 marks)

The marine transgression and its pattern of sedimentation and indicate how this pattern matches well with Walther's Law in stratigraphy. ***(with drawings)***

Examiners: *Prof. Dr. Abdalla Shahin, ,* *Prof. Dr. Hosny Hamama*

Mansoura University
Faculty of Science
Physics Department.
Subject: Physics(3)
Title: Atomic physics &Spectra
Code : 333

Final term exam – 2nd term
Third Year/GeoPhys.
Date: may. 2015
Allowed Time: 2 hours.
Full Mark: 60

Answer the following questions

[1] a- Derive from Coulomb's law and the simple quantization of angular momentum, the energy levels of the hydrogen atom? [12] Mark

b- An excited ${}_1H^1$ atom emits a photon of wavelength λ in returning to its ground state. What is the quantum number of the initial excited state in terms of λ and the Rydberg constant R.? [8] Mark

[2] a- Prove that for an atom placed in an external magnetic field, a state of given orbital quantum number ℓ breaks up into $2\ell + 1$ substates (assume that the resultant spin angular momentum is zero) ? [10] Mark

b- Consider a d- electron in a one- electron atomic system. Calculate the values of : i)- ℓ, s and j ii)- L,S and J [6] Mark

c- What are the possible orientations of L and J relative to the Z axis? [4] Mark

[3] a- Explain the doublet structure of the optical spectra from sodium? [8] Mark

b- Write briefly about anomalous Zeeman effect? [8] Mark

c- Calculate the shortest wavelength in the Balmer series ? [4]Mark

Const.: C =3x10^8 m/s, h = 6.283 x10^{-34} J.s, ε_0 = 8.85x 10^{-12} F/m, R= 1.097 x10^7 m^{-1}

Best wishes, : *Prof.Dr. Kermal El-farahaty*