ENVIRONMENTAL GEOLOGY (GEOLOGY 102)

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TEST BANK

FIRST EXAM

CHAPTER ONE

Shaas N Hamdan

Q1: Fill in the space to complete the following sentences

1. Planets far from the sun contain _____ minerals
2. Modern environmental problems are _____
3. _____ is the all conditions that surrounding an organism & influence it (physical & social conditions)
4. Stars formed from debris of the Big Bang, as high mass of gasses collected by _____ & becames dense enough to form stars
5. Planets in the solar system formed about 4.5Ga the remaining dust & gases have been condensed in the formation of _____ that collided to form a planets
6. The planetary density differences are due to _____ & _____
7. The denser materials sink down & lighter floated up in a process called _____
8. The _____ & _____ processes are leds to the formation of oceans & atmosphere
9. The O_2 added to the atmosphere by blue-green algae called cyanobacteria by _____ process
10. _____ is the crust & uppermost mantle & form a brittle shell around the earth
11. The water that released into the atmosphere by planets are released in the process called _____

Q2: answer the following questions as True (T) or False (F)

1. Geology is the study of earth, & all of geology cannot be regarded as environmental geology
2. Geophysics is the Geology that relates directly to human activity (humans & environments interactions)
3. Geology is challenging because of the disparity between the scientist's laboratory & nature's
4. Marse is similar to earth in size & density, marked with dense atmosphere (CO_2) that leds to greenhouse-effect
5. Only lower mantle zone can be analyzed directly but crust & uppermost mantle can not
6. The scientific method is not applicable to some geologic process due to difficulty of experimenting with nature
7. As we consume more resources, we create less waste
8. The earth is not a dynamic system & many of the processes on the earth are cyclic, & these processes & cycles are often interrelated
9. If the population grows too large, disease & competition for food will cut it back to sustainable levels

Q3: Answer the following questions briefly

1. Number of factors had combined to accelerate the rate of population in the present time,what are these factors
   _____
   _____
   _____
2. We study environmental geology. why it's important?
   _____
   _____
   _____
3. There are no fears of global food shortage even with high rates of population growth. Why?
   _____
   _____
   _____
4. Main reasons for different growth rate among regions
   _____
   _____
   _____
5. The sources of pressure & temperature with depth are
   _____
   _____
6. The compositions of Earth interior are studied by
   _____
   _____
   _____
7. The geology has become more important in last several tens of years. Why?
   _____
   _____
   _____
8. The Big Bang are theory & not hypothesis why?
   _____
   _____
   _____
9. We search for explanations of phenomena. Why?
   _____
   _____
   _____
10. The time of the Big Bang (12-14Ga) are estimated by
    _____
    _____
    _____

Q4: Defined briefly the following terms

1. Environmental Geology
   _____
   _____
2. Earth carrying capacity
   _____
   _____
3. Doubling time (D)
   _____
   _____
4. Population growth (G)
   _____
   _____
5. Planetismals
   _____
   _____

Q5: Choice the correct answer in the following sentences

1. The two most abundant elements in the crust are
   A. Mg & K B. Na & Ca
   C. O & Si D. Fe & Al
2. Humans (Homo sapiens) first appeared
   A. 50 Ma B. 5 Ma
   C. 500 Ka D. 50 Ka
3. Which planet's size & density are most similar to Earth's
   A. Mars B. Mercury
   C. Venus D. Neptune
4. An hypothesis is a
   A. Explanation for data B. Can become a theory
   C. Falsifiable D. All of the above
5. Which continent has fastest rate of population growth
   A. North America B. Asia
   C. Europe D. Africa
6. The two most abundant elements in the earth's core are
   A. Mg & K B. Fe & Ni
   C. O & Si D. Fe & Al
7. Which of the following is a rocky planet
   A. Saturn B. Jupiter
   C. Venus D. Neptune
8. Which continent has slowest rate of population growth
   A. North America B. Asia
   C. Europe D. Africa
9. Which statement best summarizes Big Bang Theory
   A. Universe began as black hole & rapidly expanded
   B. Universe began as cool dense point, then expanded
   C. Universe began as hot dense point, then expanded
   D. Universe began as hot dense point, then collapsing
10. Which two element make up most of the sun
    A. H & O B. H & He
    C. O & He D. H & N
11. What is the process that occurs in the core of a star, like the sun, that produces energy
    A. Fission B. Fusion
    C. Decay D. Convection
12. One of the main differences between the outer and inner planets is _____
    A. The inner planets all have water
    B. The inner planets are bigger than the outer planets
    C. The outer planets are gas planets
    D. The outer planets have rings, & the inner don't
13. Which statement helps to account for the difference in composition between rocky & gases planets
    A. The farther from the Sun, the cooler the T is
    B. Large planets have less stable orbits than smaller
    C. Metallic (M) elements are lower melting T than NM
14. Which of the following are from physical environment
    A. Rock, Soil, Air, Water B. Other organisms
    C. Light, & Temperature D. All of them
15. Increased use of _____ reduces birthrates
    A. birth-control B. Family-planning methods
    C. Education,&Economic D. All of them
16. Problem associated with densely populated individuals
    A. Disease spreads more quickly
    B. Competition for food may be higher
    C. Competition for space may be higher
    D. All of the above
17. _____ the time required to double population
    A. Population Time B. Growth Time
    C. Doubling Time D. Non of them
18. The problems of rapidly growing world population was discussed in the context of food, & major limitation are
    A. Availability of water B. Nature of the soil
    C. Farmland D. All of them
19. The impact of humans on the global environment is directly proportional to
    A. Size of the population B. Technology development
    C. Pollution D. All of them
20. Which from the following is renewable resource
    A. Land & Water B. Food & Animals
    C. Eergy & Fuels D. Minerals & Rocks
21. Largest number of individuals of a population that the environment can support
    A. Carrying capacity B. Population crash
    C. Lag phase D. Mutualism
22. What do you call a period of rapid growth?
    A. Exponential growth B. Logistic growth
    C. Emigration D. Pradator-Prey Cycle
23. Which of the following can decrease size of population
    A. Increased birthrate B. Increased immigration
    C. Decreased birthrate D. Decreased deathrate
24. If the number of births is the same as the number of deaths, what will happen to the population growth
    A. Increases B. Decreases
    C. Stay the same D. Non if them
25. The average number of people living in an area
    A. Population Growth B. Population density
    C. Population rate D. Population distribution
26. Which of the following is a density-dependent factor?
    A. Rainfall B. Flood
    C. Disease D. Natural Disasters
27. If the population is 8,792 people in 6.5 m^2, Calculate the population density in people per square metter
    A. 57,148 p/m^2 B. 208 p/m^2
    C. 1,353 p/m^2 D. 135 p/m^2
28. If the growth rate 1.3%/yr calculate the doubling time
    A. 154 yr B. 54 yr
    C. 154%/yr D. 54%/yr
29. The doubling time of the present present growth is
    A. 58 yr B. 60 yr
    C. 158 yr D. 160yr

ANSWERS

Chapter One

Question One (Q1)	
1	Low Temperature Minerals
2	Is the problems that are caused or increased by human activities such as Ground water Pollution, Acid Rain, O_3 Depletion, Global Warming…
3	Environment
4	Gravity
5	Planetismals
6	Chemical Composition & Ore-forming Processes
7	Differentiation
8	Differentiation & Cooling
9	Photosynthesis
10	Lithosphere
11	Evapotranspiration

Question Two (Q2)

1	2	3	4	5	6	7	8	9
F	F	T	F	F	T	F	F	T

Question Three (Q3)

1	1. The human live not only where food are grown 2. The human live not only where water available 3. The human live not only where climate is ideal
2	1. Curiosity about how the earth work 2. How & Why for natural phenomenon 3. To understanding of natural phenomena 4. To solving of environmental problems
3	لان الانسان يمتلك تكنولوجيا قادرة على التغلب على مشكلة الغذاء مثل الهندسة الجينية Genetic Engineering التي تزيد من النبات الذي يستهلكه الحيوان والبشر اضافة انه ممكن اكسابها صفات محببة والتخلص من الصفات غبر المحببة وبالتالي يمكن توفير الغذاء للجميع ويمكن التخلص من الفايروسات والبكتيريا الضارة وبالتالي ايضا التغلب على مشكلة الاوبئة
4	**الدين والثقافة:** بعض الاديان والثقافات تشجع على التكاثر **معدلات التنمية الاقتصادية:** الدول التي بها تنمية اقتصادية كبيرة (دول صناعية) معدلات النمو البشري بها قليلة والعكس بالدول المستهلكة **التعليم:** قد يكون عاملا ايجابيا بتوعية الناس باخطار النمو السكاني على البيئة وبخطط تنظيم الاسرة او سلبي بتحسين حياة الناس وبالتالي توفير الوقت والمال والرفاهية للتكاثر **بعض القوانين الاجبارية:** بعض الدول الزمت مواطنيها بتنظيم النسل وعند انهيار القانون الذي يلزم الناس بتنظيم النسل كما حدث بالهند حدث انفجار سكاني كرد فعل على الاجبار
5	The collision of meteorites during the formation of the earth & after this time The radioactive decay of unstable elements within the earth interior

ANSWERS

Chapter One

6	1. Analysis of meteorites 2. Analyses of dust in the solar system cloud 3. Geophysical studies that provide information about layers within the earth & their densities
7	1. Use of chemistry in study earth compositions 2. Use of biology to study ancient lifeforms 3. Use of physics to study behavior & proprietary 4. Use of engineering to design safe structures 5. The emphasize of why rather than just what
8	All assumptions have been verified by experiment 1. The T at the beginning must be very high 2. The elements in the beginning must be H & He 3. The rate of evelution of different type of stars
9	1. Knowledge, & The need for resources 2. Understand & solve of environmental problems 3. Understanding of human impacts on nature
10	1. The universe is expanding & cooling (red Shift) 2. The astrophysical model of element distribution 3. The rate of evelution of different type of stars

Question Four (Q4)

1	Environmental Geology is the geology that relates directly to the human activities (human & nature interactions), & all geology might be regarded as environmental geology
2	Is the limit to the life-sustaining resources earth can provide us, or capacity for human life on the earth (How many people can Earth support)
3	Is the time required to double the size of population & inversely proportional to the growth rate
4	Is the number of people added per unit of time due to changing of birthrates, emigration, & immigration
5	Dusts & Gases in the solar nebula collected together by gravity in the formation of bodies that called PLANETISMALS & these bodies then collected together & collides in the formation of rocky planets (terrestrial planets) in the solar system

Question Five (Q5)

1	2	3	4	5	6	7	8	9	10
C	C	C	D	D	B	C	C	C	B
11	12	13	14	15	16	17	18	19	20
A	C	A	D	D	D	C	D	D	B
21	22	23	24	25	26	27	28	29	30
A	A	C	C	B	C	C	B	A	

FIRST EXAM

CHAPTER TWO

Shaas N Hamdan

Q1: Fill in the space to complete the following sentences

1. Graphite differ from diamond by _____
2. _____ are example of ferromagnesian mineral
3. The mineral that has a hardness of 6 is _____
4. _____ example of nonfoliated metamorphic rock
5. _____ are the building blocks of rocks
6. An aggregate of mineral and/or mineraloids matter is best described by the term of _____
7. The limestone consists of impure masses of _____
8. Elements can be organized into rows & groups, these relationships are displayed as _____
9. _____ are the elements with same atomic number but different atomic mass
10. The scale used by geologists to measure the hardness of a mineral is called _____ scale
11. Breakage along planes of weak bonding producing distinctive, smooth, flat surfaces is known as _____
12. When isotopes are unstable they can spontaneously disintegrate through a process called _____
13. _____ compares the weight of a mineral to the weight of an equal volume of water
14. The surface process that slowly disintegrates & decomposes rock is called _____
15. Compaction and cementation are two common steps or processes of _____
16. Environmental conditions of heat & pressure are most likely associated with _____ process
17. The alignment of mineral with a preferred orientation in a metamorphic rock that gives the rock a layered appearance is referred to as a _____ texture
18. The changes in T with depth is called _____

Q2: Answer the following questions briefly

1. During metamorphism, changes occur to rock include

_____

2. Soils rich in clays are unstable base for building. Why?

_____

Q3: Defined briefly the following terms

1. Mineral

_____

2. Rock

_____

Q4: Match the following (Minerals & Group respectively)

1	Magnetite	A	Carbonates
2	Fluorite	B	Hydroxides
3	Gibbsite	C	Halides
4	Dolomite	D	Sulphates
5	Barite	E	Native Elements
6	Silver	F	Oxides
7	Graphite	G	Native Elements
8	Corundum	H	Oxides

Q5: Match the following (Resource & Ore respectively)

1	Galena	A	Hg (mercury)
2	Hematite	B	Fe (iron)
3	Cinnabar	C	Zn (zinc)
4	Sphalerite	D	Pb (lead)

Q6: Match the following (Rocks & Means)

1	Igneous rocks	A	Accumulation & Settle
2	Metamorphic rocks	B	Hot & Fire
3	Sedimentary rocks	C	Changing form

Q7: Correctly match the igneous rock pairs by composition

1	basalt	A	Granite
2	Rhyolite	B	Gabbro
3	Andesite	C	Diorite

Q8: Give a scientific explanation of the following

1. The magma & the lava is not the same thing

_____

_____

2. Why can two igneous rocks have the same minerals but different names?

_____

_____

3. The magma that rich earth surface solidified rabidly & forming noncrystalline glass. Why minerals not forms?

_____

_____

4. The regional metamorphism are marked with foliation texture in a rock from slate to gneiss

_____

_____

Q9: Answer the following with True (T) or False (F)

1. Stream deposits are poorly sorted by size & density
2. Sand common as major component of beach materials
3. In erosion, bays more active under attack than headland
4. Fine fragments maintain a steeper slope than coarser
5. Saturation of unconsolidated materials reduces the friction between particles
6. Reducing water infiltration will decrease flooding risk
7. Mud is common as major component of beach materials
8. The rocks in the oceanic lithosphere are rich in ferromagnesian minerals
9. The obsidian are made of minerals & consists of impure masses of calcite
10. Ice in the Antarctica is a mineral
11. Rocks must contain minerals
12. Ions form when atoms gain or lose neutrons
13. Isotopes of same element have different mass numbers
14. All uncombined neutral atoms have the same number of neutrons as protons
15. An atom is the smallest neutral particle that retains the properties of a given element
16. Sodium (Na) & chlorine (Cl) form an electrically neutral compound through the process of ionic bonding
17. Luster is the external expression of a mineral's internal orderly arrangement of atoms
18. Vitreous, pearly, and silky are types of metallic lusters
19. The exact chemical composition & the internal structure must be known to positively identify a mineral
20. Eight minerals make up 98% of the crust
21. Nonsilicates represent the largest group of minerals found in crustal rocks
22. The elements silicon and carbon comprise nearly three-fourths of Earth's continental crust
23. Each silicate mineral group is associated with a particular silicate structure
24. Quartz has three planes of cleavage, one for each dimension of its silicate structure
25. The most useful properties of minerals is the color
26. Geologic processes directly related to rocks & minerals
27. Elements are substances that cannot be broken down into simpler substances by chemical or physical means
28. Each silicate mineral has a structure & composition that indicate the conditions under which it formed
29. The process called weathering, whereby magma cools, solidifies, and forms igneous rocks, may take place beneath the surface, or at the surface
30. The Rock Cycle involves only components of Geosphere
31. Over time, magma will crystallize to form extrusive rock
32. The most common extrusive igneous rock is granite
33. Igneous rocks are the rock most likely to contain fossils
34. Basalt exhibits a coarse-grained felsic materials
35. The size of mineral crystals in igneous rocks is greatly influenced by the rate of magma cooling
36. Magma is exactly the same as lava
37. Pore space in loose sediment is reduced over time through compaction & cementation
38. The sand-sized particles of red sandstone are most likely cemented with iron oxide
39. Bituminous coal is a chemical sedimentary rock
40. Detrital particles are predominantly quartz & feldspars

Q10: Choice the correct answer in the following sentences

1. The oldest seafloor rocks are about _____Ma
   A. 500 B. 125
   C. 200 D. 750
2. The oldest oceanic lithosphere is found in
   A. Atlantic Ocean B. Red Sea
   C. Pacifie Ocean D. Indian Ocean
3. Which mineral is not a silicates
   A. Calcite B. Quartz
   C. Olivine D. Feldspar
4. The cation can bond chemically forming
   A. An ionic bond B. A metallic bond
   C. A covalent bond D. A shared oxygen linkage
5. Which of the following rock has a clastic texture
   A. Gneiss B. Basalt
   C. Granite D. Siltstone
6. Examples of foliated metamorphic rocks are
   A. Marble & Quartzite B. Shale & Andesite
   C. Limestone & Marble D. Slate & Schist
7. A coarse-grained clastic rock with fragments >2mm
   A. Sandstone B. Shale
   C. Rock salt D. Conglomerate
8. Which mineral is not a silicate
   A. Dolomite B. Silver
   C. Olivine D. Feldspar
9. The discrimination of a crystalline substance is/are
   A. Repetitive pattern B. Orderly manner
   C. Solid shapes D. All of them are true
10. The atomic number of Isotopes Carbon-12 is 6, so this carbon Isotopes contain
    A. 6protons + 8electrons B. 6protons + 6neutrons
    C. 6protons + 8neutrons D. 6protons + 6electrons
11. Two or more elements bond together in definite proportions to form a/an
    A. Ion B. Nucleus
    C. Compound D. Rock
12. The property that is a measure of the resistance of a mineral to abrasion or scratching is
    A. Fracture B. Cleavage
    C. Streak D. Hardness
13. Which of the following properties is the least reliable to help identify a mineral
    A. Cleavage B. Color
    C. Streak D. Hardness
14. The hardest mineral substance is
    A. Glass B. Diamond
    C. Rubies D. Corundum
15. Which type of material will effervesce (fizz) when in contact with acidic solutions (such as hydrochloric acid)
    A. Diamonds B. Glass
    C. Silicates D. Carbonates
16. Which of the following is not a nonsilicate group?
    A. Carbonates B. Sulfides
    C. Native elements D. None of the above
17. Which of the following is the most abundant in crust
    A. Nonsilicates B. Silicates
    C. Halides D. Carbonates
18. Which silicate group has a single-chain structure
    A. Quartz & Feldspars B. Amphiboles
    C. Micas D. Pyroxenes

19. Which silicate group has a sheet structure
A. Quartz & Feldspars B. Amphiboles
C. Micas D. Pyroxenes
20. Which silicate mineral has a single-tetrahedra structure
A. Olivine B. Amphiboles
C. Micas D. Pyroxenes
21. Which silicate group has a double-chain structure
A. Olivine B. Amphiboles
C. Micas D. Pyroxenes
22. Which silicate group has a 3D network structure
A. Quartz & Feldspars B. Amphiboles
C. Micas D. Pyroxenes
23. The basic building block of the silicate minerals
A. 1O:4Si B. 1Si:4O
C. 1Fe:4O D. Occurs independently
24. Most silicate minerals form from
A. Erosion B. Molten rock
C. Radioactive decay D. Other minerals
25. The composition of quartz is
A. $CaSO_4$ B. SiO_2
C. SiO_4 D. $CaCO3_3$
26. The cleavage of a silicate mineral is determined by
A. Composition B. Internal structure
C. Crystal form D. Weathering rate
27. Which of the following is comprised of minerals
A. Obsidian B. Limestone
C. Pumice D. Coal
28. The streak of metallic minerals tends to be
A. White B. Light
C. Dark D. None of the above
29. Which of the following materials has a hardness of between 3 & 4
A. Fingernail B. Copper penny
C. Wire nail D. Gypsum
30. Silicate minerals tend to cleave
A. Between Si-O bonds B. Randomly
C. Across Si-O bonds D. Breaking the Si-O bond
31. Metamorphic rocks exposed at the surface will
A. Crystallize B. Weather
C. Melt D. Lithify
32. _____ processes produce sedimentary rocks
A. External B. Internal
C. Heat (by decay) D. Metamorphic
33. Sediments are best defined as
A. Loose material B. Cohesive material
C. A type of rock D. A type of crystallization
34. Igneous rocks are classified by
A. Texture only B. Mineral composition only
C. Texture+Composition D. Texture+Crystal system
35. Which of the following is not a dark silicate mineral
A. Pyroxene B. Potassium feldspar
C. Olivine D. Amphibole
36. Igneous rocks that contain the last minerals to crystallize from magma & consist of feldspars & quartz are said to have a _____ composition
A. Mafic B. Lithic
C. Felsic D. Gneissic
37. one of the following is not a primary element in magma
A. Oxygen B. Iron
C. Aluminum D. Carbon
38. Detrital sedimentary rocks can form from
A. Organic material B. Detritus & sediment
C. Weathered rock D. All of the above
39. Particles transported short distances from source will be
A. Round B. Angular
C. Clay D. Smooth
40. Which of the following is a chemical sedimentary rock
A. Limestone B. Granite
C. Sandstone D. Slate
41. Detrital sedimentary rocks are subdivided according to
A. Particle size B. Color
C. age D. Hardness
42. Fossils found in sedimentary rocks can be used to
A. Fuels B. Age determination
C. Resources D. All of them
43. Which of the following is best considered a high-grade regional metamorphic rock?
A. Slate B. Gneiss
C. Phyllite D. Marble
44. Which of the following terms is not used as one of the four basic igneous rock textures?
A. Coarse-grained B. Fine-grained
C. Porphyritic D. Felsic
45. _____ responsible for regional metamorphism
A. Confining Pressure B. Directed stress
C. Differential stress D. Non of the above
46. The most important agent of metamorphism is
A. Texture B. Pressure
C. Heat D. Composition
47. When subjected to high pressure, shale will change to
A. Gneiss B. Sandstone
C. Limestone D. Marble
48. Which of the following is least likely to form as a result of contact metamorphism
A. Quartzite B. Hornfels
C. Schist D. Marble
49. The recrystallization of limestone during contact metamorphism will form the metamorphic rock marble
A. Gneiss B. Sandstone
C. Limestone D. Marble
50. Which of the following is considered a non-foliated rock
A. Slate B. Marble
C. Schist D. Gneiss
51. The most characteristic feature of sedimentary rocks
A. Ripple marks B. Cleavage planes
C. Crystals D. Layering
52. Sedimentary rocks made up of very fine-grained sediment (“clay” sized) are called
A. Sandstone B. Shale
C. Siltstone D. Conglomerate
53. Rocks with abundant light-colored silicate minerals such as quartz & potassium feldspar are best described as
A. Felsic B. Mafic
C. Ultramafic D. Volcanic
54. Slow cooling of magma results in the formation of
A. Aphanitic crystals B. Phenertic crystals
C. Porphyritic crystals D. All of the above
55. Detritus are formed by
A. Metamorphosim B. Lithification
C. Weathering D. Crystallization

ANSWERS

Chapter Tow

Question One (Q1)

1	Crystal structure
2	Olivine, Pyroxene…
3	Orthoclase
4	Quartzite, Marble…
5	Minerals
6	Rocks
7	Calcite
8	Periodic Table
9	Isotopes
10	Moh's Scale
11	Cleavage
12	Radioactive Decay
13	Specific Gravity
14	Weathering
15	Lithification
16	Metamorphisem
17	Foliation
18	Geothermal Gradient

Question Two (Q2)

1	Changing the crystal size (become larger) Changing the texture if the rocks (may be foliated) New minerals will recrystallized from older once The rock become denser & stronger
2	The clay structure consists of space filled with water & this structure make from these minerals less resistant to slope & low stability

Question Three (Q3)

1	Naturally occurring, inorganic, solid, with crystalline structure, & have a defined chemical composition & physical properties
2	Solid aggregates of minerals or mineral-like

Question Four (Q4)

1	2	3	4	5	6	7	8
F, H	C	B	A	D	E, G	E, G	F, H

Question Five (Q5)

1	2	3	4
D	B	A	C

Question Six (Q6)

1	2	3
B	C	A

ANSWERS

Chapter Tow

Question Seven (Q7)

1	2	3
B (Mafic)	A (Felsic)	C (Intermediate)

Question Eight (Q8)

1	The magma is the molten materials within the earth has high viscosity that prevents it from rise to the surface (due to silica contents) & crystallize within the earth at a slow rate to produce plutonic rocks The lava is the molten materials that reaches the surface & crystallized rabidly at earth's surface to produce volcanic rocks or may be solidified (instantly cooling) to produce volcanic glass
2	Igneous rock described in term of composition & structure, so tow igneous rocks (such as granite & rhyolite) have same chemical composition but different crystals due to position of crystallization
3	Because solidified instantly, there's no enough time for ions to arranged in regular patterns
4	Due to sheet silica that arranged parallel to the stress direction & this arrangement will produce the foliation texture (foliation of sheet micas)

Question Nine (Q9)

1	2	3	4	5	6	7	8	9	10
F	T	F	T	T	F	T	T	F	T
11	12	13	14	15	16	17	18	19	20
F	F	T	F	T	T	T	F	F	F
21	22	23	24	25	26	27	28	29	30
F	F	T	F	F	T	T	T	F	F
31	32	33	34	35	36	37	38	39	40
F	T	F	F	T	F	T	T	T	F

Question Ten (Q10)

1	2	3	4	5	6	7	8	9	10	11
B	C	A	A	D	D	D	A	D	B	C
12	13	14	15	16	17	18	19	20	21	22
D	B	B	D	D	B	D	C	A	B	A
23	24	25	26	27	28	29	30	31	32	33
B	B	B	B	B	C	B	C	B	A	A
34	35	36	37	38	39	40	41	42	43	44
C	B	C	D	D	B	A	A	D	B	D
45	46	47	48	49	50	51	52	53	54	55
C	C	A	C	D	B	D	B	A	B	C

SHAAS N HAMDAN