DOKUMEN NEGARA
SANGAT RAHASIA

KEMENTERIAN KESEHATAN REPUBLIK INDONESIA

Kementerian Kesehatan RI
Badan Pengembangan dan Pemberdayaan SDM Kesehatan
Pusat Pendidikan Sumber Daya Manusia Kesehatan

Lembar Soal Ujian Tulis

Seleksi Penerimaan Mahasiswa Baru Poltekkes Kemenkes
(Sipenmaru Poltekkes Kemenkes)

Waktu Pelaksanaan :

Hari, tanggal : Rabu, 22 Mei 2019
Pukul : 08.00 – 11.00 WIB
09.00 – 12.00 WITA
10.00 – 13.00 WIT

Pembahasan = Cek Youtube Lenny Agustin

PETUNJUK UMUM :

1. Tulislah terlebih dahulu nomor dan data Saudara pada lembar jawaban
2. Soal ujian berjumlah 100 butir soal pilihan ganda yang terdiri dari :
   - Matematika : 30 butir soal
   - Bahasa Inggris : 30 butir soal
   - IPA : 30 butir soal
   - Bahasa Indonesia : 10 butir soal
3. Setiap soal mempunyai 5 (lima) kemungkinan jawaban : A, B, C, D, E
4. Pilihlah satu jawaban yang paling tepat dengan cara memberi **tanda silang (X)** pada **Lembar jawaban** menggunakan **ballpoint warna hitam atau biru** bagi yang menggunakan **lembar jawaban manual** atau **dihitamkan** bagi yang menggunakan **lembar jawaban komputer**
5. Tidak disediakan kertas buram, dan sebagai ganti kertas buram Saudara bisa menggunakan lembar soal
6. Penilaian didasarkan pada jawaban yang benar saja, tidak ada pengurangan nilai apabila terdapat jawaban salah
7. Periksalah pekerjaan sekali lagi sebelum diserahkan kepada pengawas ujian.

Selamat Bekerja

MATEMATIKA

1. Jumlah bilangan-bilangan pada bilangan 327 adalah 12, yaitu 3 + 2 + 7 = 12. Berapa banyak bilangan antara 200 dan 300 yang jumlah bilangan-bilangannya sama dengan 12?
   A. 8
   B. 9
   C. 10
   D. 11
   E. 12

2. Dua orang pekerja ojek *online* memilih waktu kerja yang berbeda. Pak Amir mengambil waktu kerja 2 – 1 (artinya 2 hari kerja, kemudian 1 hari beristirahat), sedangkan Pak Herman mengambil waktu kerja 5 – 2. Bila hari Minggu, 4 Maret 2018 mereka berdua bersama bekerja setelah selesai beristirahat, maka pada hari dan tanggal berapa mereka akan bersama-sama kembali bekerja?
   A. Jumat, 23 maret 2018
   B. Sabtu, 24 Maret 2018
   C. Minggu, 25 Maret 2018
   D. Senin, 26 Maret 2018
   E. Selasa, 27 maret 2018

3. Nilai $(x+y)$ yang memenuhi $\begin{bmatrix} 2x & 2 \\ 5 & 1 \end{bmatrix}\begin{bmatrix} 1 & 2 \\ 3 & x-y \end{bmatrix} = \begin{bmatrix} 12 & 14 \\ 8 & 11 \end{bmatrix}$ adalah ...
   A. 3
   B. 5
   C. 9
   D. 10
   E. 12

4. Agar $|x-2|^2 > |x-2| + 20$ memiliki penyelesaian, maka nilai x haruslah ...
   A. $x < -4$ atau $x > 5$
   B. $x < 3$ atau $x > 7$
   C. $-3 < x < 7$
   D. $-4 < x < 5$
   E. $x < -3$ atau $x > 7$

5. Penarikan kesimpulan yang sah dari argumentasi,
   Jika Wati kaya maka ia dermawan
   Wati tidak dermawan atau ia disenangi orang.
   Wati tidak disenangi orang.
   adalah ...
   A. Wati tidak kaya
   B. Wati kaya
   C. Wati tidak dermawan
   D. Wati dermawan
   E. Wati disenangi orang

6. Negasi dari "*Semua hadirin berdiri ketika Presiden memasuki ruangan*" adalah:
   A. Semua hadirin tidak berdiri ketika Presiden memasuki ruangan.
   B. Tidak ada hadirin yang berdiri ketika Presiden memasuki ruangan
   C. Ada hadirin yang berdiri ketika Presiden memasuki ruangan
   D. Ada hadirin yang tidak berdiri ketika Presiden memasuki ruangan
   E. Tidak ada tidak yang tidak berdiri ketika Presiden memasuki ruangan.

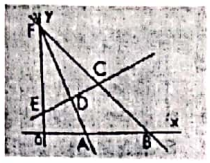
7. Diketahui $(f \circ g)(x) = \frac{x-1}{x+2}$ dan $g(x) = \frac{1}{x-2}$. Tentukan $f(x)$.
   A. $f(x) = \frac{x-1}{3x-1}$
   B. $f(x) = \frac{x+1}{3x+1}$
   C. $f(x) = \frac{x-1}{3x+1}$
   D. $f(x) = \frac{x+1}{3x-1}$
   E. $f(x) = \frac{3x-1}{x+1}$

Pembahasan = Youtube Lenny Agustin

8. Jika $f(x) = 2^{x+1}$ dan $g(x) = x^3 - 4$. Tentukan $f^{-1}(g(x^2) + 4)$.

A. $6\,{}^2log x - 1$
B. ${}^2\log(6x) - 1$
C. ${}^2log 6 + 1$
D. ${}^2log 6^x - 1$
E. $6\,{}^2log x + 1$

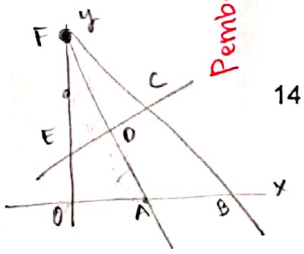
9. Daerah yang merupakan penyelesaian sistem pertidaksamaan
$x + y \le 5$; $5x + 2y \ge 10$; $x \ge 2y - 2$; $x \ge 0$; $y \ge 0$
adalah



A. OADE
B. OBCE
C. CDF
D. DEF
E. ABCD

10. Tentukan hasil dari $\frac{({}^6\log 9\sqrt{2})^2 - ({}^6\log 4\sqrt{3})^2}{{}^6\log 3\frac{3}{8}}$

A. 1
B. 1,25
C. 1,5
D. 1,75
E. 2,25



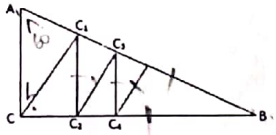
11. Biaya untuk memproduksi radio sebanyak x set setiap harinya sama dengan $\left(\frac{1}{4}x^2 + 35x + 25\right)$ rupiah. Jika setiap radio dijual dengan harga $\left(50 - \frac{1}{2}x\right)$ rupiah, maka agar diperoleh keuntungan maksimum, banyak radio yang diproduksi setiap hari sebanyak ...

A. 35
B. 32
C. 28
D. 10
E. 8

12. Jumlah 10 suku pertama dari deret $\log a + \log\frac{a}{b} + \log\frac{a}{b^2} + \log\frac{a}{b^3} + \cdots$

A. $10\log a - 35\log b$
B. $\log a - \log b$
C. $10\log a - 45\log b$
D. $\log a - 45\log b$
E. $9\log a - 35\log b$

13. Perhatikan segitiga siku-siku ABC dan siku-siku di C dan $\angle BAC = 60^0$. Bila CC_1, C_2C_3, ... tegak lurus garis AB, sedangkan C_1C_2, C_3C_4, ... tegak lurus CB. Tentukan panjang dari $AC + CC_1 + C_1C_2 + C_2C_3 + \cdots$ bila panjang $AC = x$



A. $2(x + \sqrt{3})$
B. $2x(2 + \sqrt{3})$
C. $x(2 + 2\sqrt{3})$
D. $\frac{2x}{2+\sqrt{3}}$
E. $\frac{x\sqrt{3}}{2}$

14. Banyaknya penduduk kota A di tahun 2015 adalah 32 juta jiwa, dan diperkirakan pada tahun 2018 naik menjadi 32.969.632 jiwa. Jika tingkat pertumbuhan penduduk itu adalah $r = \sqrt[n]{\frac{P_n}{P}} - 1$, maka diperkirakan jumlah penduduk kota A di tahun 2020 sebanyak ....

A. 33.856.456
B. 33.632.321
C. 33.259.432
D. 33.185.345
E. 33.078.324

Pembahasan? Youtube Lenny Agustin

15. Tentukan nilai dari $\frac{\sin 10^0+\sin 20^0+\sin 40^0+\sin 50^0}{\cos 10^0+\cos 20^0+\cos 40^0+\cos 50^0}$

A. $\frac{1}{3}\sqrt{3}$
B. $\frac{1}{2}\sqrt{3}$
C. $\sqrt{3}$
D. 3
E. 1

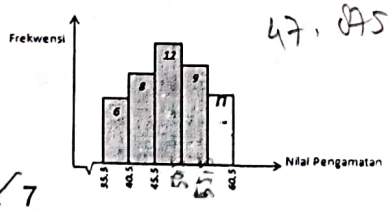
16. Persamaan garis singgung lingkaran $(x-2)^2+(y+1)^2=5$ pada titik $(4,0)$ adalah ...

A. $\frac{1}{2}x+y=8$
B. $y-\frac{1}{2}x+8=0$
C. $y+\frac{1}{2}x=8$
D. $2x+y+8=0$
E. $2x+y=8$

17. Jika sebuah suku banyak $g(x)$ dibagi $x-2$ bersisa 13, dan bila dibagi x^2-x-6 bersisa $4x-3$, maka bila $g(x)$ dibagi $x^3-3x-4x+12$ akan bersisa ....

A. $-2x^2-6x+9$
B. $-2x^2+6x+9$
C. $2x^2+6x-9$
D. $2x^2+6x-9$
E. $2x^2-6x-9$

18. Nilai rata-rata dari data pada grafik histogram di bawah ini sama dengan 47,875. Tentukan berapakah nilai n?

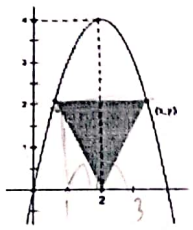


A. 7
B. 6,5
C. 6
D. 5
E. 4,5

19. Berapa banyak cara dari menempatkan posisi tujuh siswa duduk berjajar, bila di antaranya ada si kembar Ana dan Ani, yang selalu ingin duduk berdampingan, dan Ucok yang selalu ingin duduk di posisi paling pinggir.

A. 525
B. 496
C. 480
D. 378
E. 345

20. Luas maksimum dari segitiga yang terletak di dalam parabola pada gambar di bawah ini adalah



A. $\frac{16}{3}\sqrt{3}$
B. $\frac{8}{3}$
C. $\frac{16}{3}$
D. $\frac{8}{3}\sqrt{3}$
E. $8\sqrt{3}$

21. Sebuah molekul berdiameter 2^{-3} cm. Luas bidang molekul tersebut adalah ...

A. $2^{-4}.\pi\ cm^2$
B. $2^{-6}.\pi\ cm^2$
C. $2^{-8}.\pi\ cm^2$
D. $2^{-10}.\pi\ cm^2$
E. $2^{-12}.\pi\ cm^2$

22. Berapakah ${}^3\log 9^p = \cdots$ Jika diketahui $p = {}^4\log 8 + {}^4\log 9 - 2\,{}^4\log 6$

A. 1
B. 1,25
C. 1,5
D. 0,5
E. 0,25

23. Dua anak menyalakan senter dengan waktu jeda yang berbeda. Anak pertama menyalakan setiap 5 menit, sedangkan anak kedua menyalakan setiap 7 menit. Jika pada pukul 16.41 senter mereka menyala bersama, maka pada pukul berapa lagi lampu senter mereka akan sama-sama menyala kembali?
A. Pukul 16.50
B. Pukul 17.20
C. Pukul 17.16
D. Pukul 17.06
E. Pukul 16.58

24. Nilai x yang memenuhi persamaan berikut $4x^2 - 11 < (x-2)^2$ adalah ...
A. $x < -1\frac{2}{3}$ atau $x > 3$
B. $x < -3$ atau $x > 1\frac{2}{3}$
C. $-3 < x < 1\frac{2}{3}$
D. $-1\frac{2}{3} < x < 3$
E. $x < 1\frac{2}{3}$ atau $x > 3$

25. Tentukanlah nilai k yang memenuhi det(A) = 0, dengan matriks A = $\begin{pmatrix} k-3 & 1 \\ k+2 & 2 \end{pmatrix}$
A. –4
B. 4
C. 5
D. 8
E. –8

26. Tentukan $\begin{vmatrix} 8 & x \\ 5 & y \end{vmatrix}$ dengan x dan y memenuhi $\begin{pmatrix} x+1 & 2 \\ 5 & 1 \end{pmatrix}\begin{pmatrix} 1 & 2 \\ 3 & 4x-y \end{pmatrix} = \begin{pmatrix} 9 & 14 \\ 8 & 14 \end{pmatrix}$
A. 2
B. 22
C. 4
D. 14
E. 44

27. Diketahui rata-rata tinggi 5 anak adalah 170 cm. Jika masuk 5 anak lagi dalam kelompok tersebut, maka rata-rata tinggi seluruh anak menjadi 175 cm. Rata-rata tinggi 5 anak yang baru masuk adalah ...
A. 192 cm
B. 190 cm
C. 185 cm
D. 182 cm
E. 180 cm

28. Pasangan prima adalah dua bilangan prima yang memiliki selisih 2, misalnya bilangan 3 dan 5. Berapa banyaknya pasangan prima antara 50–75?
A. 1
B. 2
C. 3
D. 4
E. 5

29. Berapakah median dari data berikut ini!

Kelas Interval	Frekuensi
35 – 44	5
45 – 54	4
55 – 64	10
65 – 74	8
75 – 84	7
85 – 94	6
Jumlah	40

A. 70
B. 65,75
C. 69
D. 68,5
E. 68,75

30. Jika diketahui persamaan matrik berikut: $\begin{bmatrix} 3 & 5x \\ -1 & -7 \\ 2 & 3 \end{bmatrix}\begin{bmatrix} 1 & 2 \\ 3 & 2x \end{bmatrix} = \begin{bmatrix} 33 & 46 \\ -22 & -30 \\ 11 & 14 \end{bmatrix}$ maka nilai $(x^2 + 7)$ adalah ...
A. 33
B. 46
C. -30
D. 14
E. 11

Pembahasan? Cek Youtube Jeany Agustin

Read the following Text 1 below carefully! Questions 31 – 38 are about the text.

Text 1

A midwife is a professional in midwifery. Their education and training equips them to recognise the variations of normal progress of labor, and understand how to deal with deviations from normal. They may intervene in high risk situations such as breech births, twin births and births where the baby is in a posterior position, using non-invasive techniques. When a pregnant woman requires care beyond the midwife's scope of practice, they refer women to obstetricians or perinatologists, who are medical specialists in complications related to pregnancy and birth, including surgical and instrumental deliveries. In many parts of the world, these professions work in tandem to provide care to childbearing women. In others, only the midwife is available to provide care, and in yet other countries many women elect to utilize obstetricians primarily over midwives. Many developing countries are investing money and training for midwives, sometimes by upskilling those women already practising as traditional birth attendants. Some primary care services are currently lacking due to the shortage of money being funded for these resources.

According to the definition of the International Confederation of Midwives, which has also been adopted by the World Health Organization and the International Federation of Gynecology and Obstetrics, A midwife is a person who has successfully completed a midwifery education programme that is **recognised** in the country where it is located and that is based on the ICM Essential Competencies for Basic Midwifery Practice and the framework of the ICM Global Standards for Midwifery Education; who has **acquired** the requisite qualifications to be registered and/or legally licensed to practice midwifery and use the title 'midwife'; and who demonstrates competency in the practice of midwifery.

The midwife is recognised as a responsible and accountable professional **who** works in partnership with women to give the necessary support, care and advice during pregnancy, labour and the postpartum period, to conduct births on the midwife's own responsibility and to provide care for the newborn and the infant. This care includes preventative **measures**, the promotion of normal birth, the detection of complications in mother and child, the accessing of medical care or other appropriate assistance and the carrying out of emergency measures. The midwife has an important task in health counselling and education, not only for the woman, but also within the family and the community. This work should involve antenatal education and preparation for parenthood and may extend to women's health, sexual or reproductive health and child care. A midwife may practise in any setting including the home, community, hospitals, clinics or health units.
(Source: https://en.wikipedia.org/wiki/Midwife)

31. The word **recognised** in the 2nd paragraph (**bold**) is closest in meaning to ....
    A known
    B identified
    C introduced
    D accepted
    E required

32. The following things could be associated with midwife, EXCEPT...
A a professional in midwifery
B ability to recognise the progress of labor
C breech births and twin births
D utilizing obstetricians
E childbearing women

33. The word **who** in the 3rd paragraph (**bold**) refers to ……
A professional
B midwife
C women
D newborn
E Infant

34. The following statements are true according to the text, EXCEPT ……
A a midwife can intervene in high risk situations as long as using non-invasive techniques
B the title of midwife is earned through strict practice and competency test
C a midwife has the access to deal with pregnancy and birth through surgery
D a midwife must also be well educated about r parenthood, sexual or reproductive health and child care
E a midwife has several various places to practise including the home

35. The word **acquired** in the 2nd paragraph (**bold**) is closest in meaning to ……
A passed
B met
C graduated
D learned
E got

36. The following things are related to midwife training according to the text, EXCEPT ……
A to make midwives recognise the variations of normal progress of labor
B to upskill the women already practising as traditional birth attendants
C to refer women patients to obstetricians or perinatologis ts ,
D to make midwives understand how to deal with deviations from normal
E to use non-invasive techniques in high risk situations of baby delivery

37. It can be inferred from the text that ……
A in many countries, a midwife works together obstetricians or perinatologists
B midwives give health counselling and education to women
C in developing countries, not all primary care services are trained to midwives
D there is a standardized qualification for midwives
E midwives do not work alone, but are supported by female assistants

38. The word **measures** in the 3rd paragraph (**bold**) is closest in meaning to ….
A sizes
B ways
C standards
D methods
E rules

Pembahasan? Cek Youtube Lenny Agustin

$4x^2 - 11 < (x-2)^2$

Read the following Text 2 below carefully! Questions 39 – 46 are about the text.

Text 2

A lake is an area filled with water, localized in a basin, that is surrounded by land, apart from any river or other outlet that serves to feed or drain the lake. Lakes lie on land and are not part of the ocean, and therefore are distinct from lagoons, and are also larger and deeper than ponds, though there are no official or scientific definitions. Lakes can be contrasted with rivers or streams, which are usually flowing. Most lakes are fed and drained by rivers and streams.

Natural lakes are generally found in mountainous areas, rift zones, and areas with ongoing glaciation. Other lakes are found in endorheic basins or along the courses of mature rivers. In some parts of the world there are many lakes because of **chaotic** drainage patterns left over from the last Ice Age. All lakes are temporary over geologic time scales, as they will slowly fill in with sediments or spill out of the basin containing **them**. Many lakes are artificial and are constructed for industrial or agricultural use, for hydro-electric power generation or domestic water supply, or for aesthetic, recreational purposes, or other activities.

There is considerable uncertainty about defining the difference between lakes and ponds, and no current internationally accepted definition of either term across scientific disciplines or political boundaries exists. For example, limnologists have defined lakes as water bodies which are simply a larger version of a pond, which can have wave action on the shoreline or where wind-induced turbulence plays a major role in mixing the water column. None of these definitions completely excludes ponds and all are difficult to measure. For this reason, simple size-based definitions are increasingly used to separate ponds and lakes. Definitions for *lake* range in minimum sizes for a body of water from 2 hectares (5 acres) to 8 hectares (20 acres) (see also the definition of "pond"). Charles Elton, one of the founders of ecology, regarded lakes as waterbodies of 40 hectares (99 acres) or more.

The term *lake* is also used to describe a feature such as Lake Eyre, which is a dry basin most of the time but may become filled under seasonal conditions of heavy rainfall. In common usage, many lakes **bear** names ending with the word *pond*, and a lesser number of names ending with *lake* are in quasi-technical fact, ponds. One textbook illustrates this point with the following: "In Newfoundland, for example, almost every lake is called a pond, whereas in Wisconsin, almost every pond is called a lake."

The majority of lakes on Earth are freshwater, and most lie in the Northern Hemisphere at higher latitudes. Canada, with a deranged drainage system has an estimated 31,752 lakes larger than 3 square kilometres (1.2 sq mi) and an unknown total number of lakes, but is estimated to be at least 2 million. Finland has 187,888 lakes 500 square metres (5,400 sq ft) or larger, of which 56,000 are large (10,000 square metres (110,000 sq ft) or larger). Most lakes have at least one natural outflow in the form of a river or stream, which maintain a lake's average level by allowing the drainage of excess water. Some lakes do not have a natural outflow and lose water solely by evaporation or underground seepage or both. They are termed endorheic lakes. Many lakes are artificial and are constructed for hydro-electric power generation, aesthetic purposes, recreational purposes, industrial use, agricultural use or domestic water supply.

(Source: https://en.wikipedia.org/wiki/Lake)

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39. The following statements are true according to the text, EXCEPT ....
A it is difficult to make the definition of lake which is internationally accepted
B lakes are durable in times and do not vanish
C lakes can be distinguished from lagoons and ponds
D lakes are created by mother nature and humans
E lakes can be found in valleys or mountains

40. The word **chaotic** in the second paragraph (**bold**) is closest in meaning to ....
A clogged up
B fully deadlock
C very unstructured
D total malfunction
E complete disordered

41. The word **bear** in the fourth paragraph (**bold**) is closest in meaning to ....
A bring
B get
C give
D earn
E Entitle

42. The fifth paragraph tell the readers about .....
A the dimensions, description, and kinds of lakes
B the dimensions and descriptions of lakes in Canada and Scandinavian areas
C the positions and descriptions of lakes
D the positions, kinds, and uses of lakes
E the criteria of lakes and their descriptions

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43. The word **them** in the second paragraph (**bold**) is in reference to ....
A geologic time scales
B lakes
C sediments
D industries
E Agricultures

44. The best phrase to define lake is ...
A a body of water that lies on land and are not part of the ocean and is different from lagoons, but larger and deeper than ponds
B a body of water which is different from rivers or streams
C a body of water which is generally found in mountainous areas, rift zones, and areas with ongoing glaciation
D a body of water which is found in endorheic basins surrounded by land
E a body of water localized in a basin and surrounded by land with or without water flowing into or out of it

45. These things are the characteristics of lake, EXCEPT .....
A lakes are on land and separated from the ocean
B most lakes have rivers or streams to feed and drain them
C lakes can take the form of lasting empty dry basin
D limnologists perspective simplifies lakes by the size
E lakes are in a localized basin and are surrounded by land

46. The following things could be associated with lake, EXCEPT .....

A Non-flowing water
B natural and artificial
C generally freshwater
D parts of rivers or streams
E agricultural use or domestic water supply

Study the following table carefully! Question number 47 is about the table.

Table 2: Mass of balls and diameters of crater formed

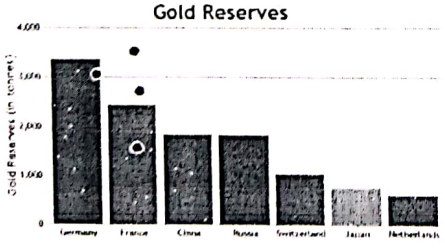
	mass(±0.01g)	Diameter of crater(±0.1cm)					Average diameter(±0.2cm)
ball1	27.92	8.0	8.0	8.3	8.4	8.3	8.2
ball2	46.53	9.3	9.4	9.3	9.1	9.4	9.3
ball3	65.37	9.7	9.4	9.5	9.5	9.7	9.6
ball4	105.44	9.9	10.5	10.2	9.9	10.4	10.2
ball5	112.01	10.6	10.6	10.8	10.5	10.6	10.6
ball6	136.74	10.7	10.7	10.9	10.9	11.4	10.9
ball7	174.45	11.2	11.4	11.6	11.2	11.2	11.3

Table 2. The largest average deviation of the trials was used as the uncertainty of the average diameter.

47. The table tells us these, BUT ...

A the smallest average diameter of craters is 8.0
B the diameters of craters of each ball fluctuate
C the biggest diameters of the craters can be found in the rows of ball6 and ball7
D the higher the mass of the balls, the higher the average diameters of craters
E the mass of balls, from ball1 to ball7, keeps increasing

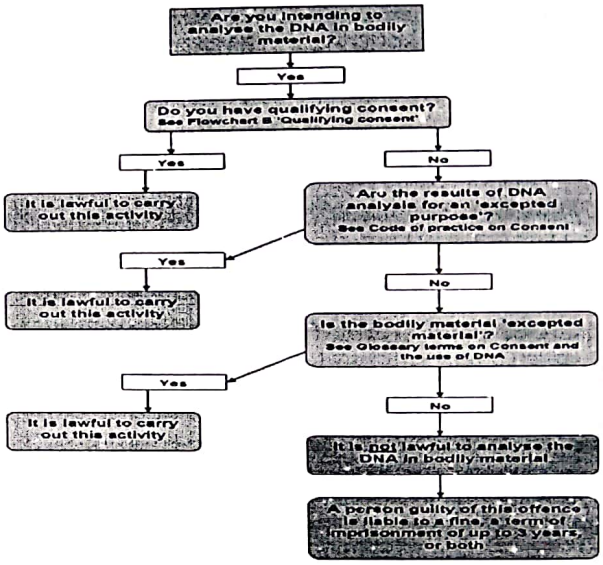
Study the following chart carefully! Question number 48 is about the chart.



48. The following statements are true according to the chart, EXCEPT ...

A from Germany to Netherlands, the gold reserves continue to decline
B the gold reserves of Switzerland, Japan, and Netherlands combines cannot compete with the gold reserves of Germany
C two countries share the same amount of gold reserves
D all countries have gold reserves more than 1,000
E European countries have more gold reserves than Asian countries

Study the following chart carefully! Question number 49 is about the chart.



49. The following statements are true according to the chart, EXCEPT ...

A qualifying consent is required to analyse DNA
B if DNA analysis is not for an excepted purpose, the analysis is not allowed
C with excepted material, DNA analysis is lawful to carry out
D there are four requirements to lawfully carry out DNA analysis
E illegally carrying out DNA analysis is subject to get fined or imprisoned

Pembahasan? Cek Youtube Lenny Agustin

Questions 50 and 51 are filling the gap between sentences.

Study the sentences below for number 50.

Part 1

A carbohydrate is a biomolecule consisting of carbon (C), hydrogen (H) and oxygen (O) atoms, usually with a hydrogen–oxygen atom ratio of 2:1 (as in water) and thus with the empirical formula $C_m(H_2O)_n$ (where m may be different from n). This formula holds true for monosaccharides. Some exceptions exist; for example, deoxyribose, a sugar component of DNA, has the empirical formula $C_5H_{10}O_4$. The carbohydrates are technically hydrates of carbon; structurally it is more accurate to view them as aldoses and ketoses. ... (50)

50. The most appropriate sentence to complete the paragraph is ...
    - A While the scientific nomenclature of carbohydrates is complex, the names of the monosaccharides and disaccharides very often end in the suffix -ose, as in the monosaccharides fructose (fruit sugar) and glucose (starch sugar), and the disaccharides sucrose (cane or beet sugar) and lactose (milk sugar).
    - B The word *saccharide* comes from the Greek word *σάκχαρον* (*sákkharon*), meaning "sugar".
    - C Monosaccharides and disaccharides, the smallest (lower molecular weight) carbohydrates, are commonly referred to as sugars.
    - D The saccharides are divided into four chemical groups: monosaccharides, disaccharides, oligosaccharides, and polysaccharides.
    - E The term is most common in biochemistry, where it is a synonym of **saccharide**, a group that includes sugars, starch, and cellulose.1

Study the sentences below for number 51.

Part 2

Carbohydrates perform numerous roles in living organisms. Polysaccharides serve for the storage of energy (e.g. starch and glycogen) and as structural components (e.g. cellulose in plants and chitin in arthropods). The 5-carbon monosaccharide ribose is an important component of coenzymes (e.g. ATP, FAD and NAD) and the backbone of the genetic molecule known as RNA. The related deoxyribose is a component of DNA. ... (51) ...

51. The best sentence to complete the paragraph is ...
    - A Saccharides and their derivatives include many other important biomolecules that play key roles in the immune system, fertilization, preventing pathogenesis, blood clotting, and development.
    - B Sugars appear in human diet mainly as table sugar (sucrose, extracted from sugarcane or sugar beets), lactose (abundant in milk), glucose and fructose, both of which occur naturally in honey, many fruits, and some vegetables.
    - C Table sugar, milk, or honey are often added to drinks and many prepared foods such as jam, biscuits and cakes.
    - D They are found in a wide variety of natural and processed foods.
    - E Starch is a polysaccharide. It is abundant in cereals (wheat, maize, rice), potatoes, and processed food based on cereal flour, such as bread, pizza or pasta.

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Questions 52 – 53 are arranging the muddled texts. Rearrange them into a good order.

Muddled text 1 for number 52

a Many historic palaces are now put to other uses such as parliaments, museums, hotels, or office buildings.

b A palace is a grand residence, especially a royal residence, or the home of a head of state or some other high-ranking dignitary, such as a bishop or archbishop.

c Most European languages have a version of the term (*palais*, *palazzo*, *palast* etc), and many use it for a wider range of buildings than English.

d The word is derived from the Latin name *Palātium*, for Palatine Hill in Rome which housed the Imperial residences.

e In many parts of Europe, the equivalent term is also applied to large private houses in cities, especially of the aristocracy; often the term for a large country house is different.

52. The sentences above belong to one coherent paragraph when arranged in a good order. What should be the right order to develop the first sentence into a good paragraph?

A d – b – a – e – c
B e – b – d – c – a
C a – e – c – b – d
D b – d – c – e – a
E c – d – a – e – b

Muddled text 2 for number 53

a At the same time, Charlemagne was consciously reviving the Roman expression in his "palace" at Aachen, of which only his chapel remains.

b Palace meaning "government" can be recognized in a remark of Paul the Deacon, writing c. AD 790 and describing events of the 660s: "When Grimuald set out for Beneventum, he entrusted his palace to Lupus" (*Historia Langobardorum*, V.xvii).

c In the 9th century, the "palace" indicated the housing of the government too, and the constantly travelling Charlemagne built fourteen.

d In the Holy Roman Empire the powerful independent Electors came to be housed in palaces (*Paläste*).

e In the early Middle Ages, the *palas* was usually that part of an imperial palace (or *Kaiserpfalz*), that housed the Great Hall, where affairs of state were conducted; it continued to be used as the seat of government in some German cities.

53. The sentences above belong to one coherent paragraph when arranged in a good order. What should be the right order to develop them into a good paragraph?

A b – a – c – e – d
B d – c – e – b – a
C a – c – d – b – e
D d – a – b – e – c
E d – e – c – a – b

Read the following text carefully before you answer the questions number 54 to 60. Choose the best answers to fill in the blank spaces, if necessary.

Six Indonesians were inside attacked New Zealand mosque: Foreign Ministry

Six Indonesians were praying at Al-Noor mosque in Christchurch, New Zealand, when a gunman opened fire ... (54) ... worshipers on Friday, the Foreign Ministry has said.

Dozens are believed dead, according to news reports.

Three Indonesian men were able to escape the shooting, but the whereabouts

of the other three remain unknown, Foreign Minister Retno LP Marsudi said in Jakarta on Friday.

The minister ... (55) ... with Indonesian Ambassador to New Zealand Tantowi Yahya to monitor the situation.

"A team from the embassy ... (56) ... to Christchurch to seek information on our people who happened to be in the mosque, particularly the three who still cannot be contacted, " she said.

She added that the shooting occurred at 13:40 local time when Muslim men were performing Friday prayers at the mosque.

"In the meantime, we have yet to receive any information on the identity of the perpetrators, as well as their motives," she said.

According to Retno, there are 330 Indonesians ... (57) ... in Christchurch, 130 of whom are students.

An attack on two crowded mosques during Friday prayers left multiple people dead, police said as quoted by AFP, on what Prime Minister Jacinda Ardern described as "one of New Zealand's darkest days".

Witnesses spoke ... (58) ... bloodied bodies, with children also believed to be among the dead, and police warned of "extremely distressing footage" of the incident circulating on the internet.

Police said four people – three men and a woman – ... (59) ... into custody, and that they had found and neutralized a number of ... (60) ... devices (IEDs).

54. A at
B to
C on
D against
E Towards

55. A has been coordinating
B had coordinated
C was coordinating
D coordinated
E is coordinating

56. A dispatched
B is dispatched
C was dispatched
D had been dispatched
E has been dispatched

57. A live
B living
C are living
D have been living
E have lived

58. A to see
B seeing
C for seeing
D of seeing
E see

59. A have been taken
B were taken
C are taken
D had been taken
E Taken

60. A improved explosion
B improving explosion
C improving explosive
D improve explosively
E improved explosive

Pembahasan ? Cek Youtube Lenny Agustin

61. Hewan yang memiliki rongga tubuh triploblastik pseudoselomata adalah...
(1) Molusca
(2) Cacing pipih
(3) Cacing gelang
(4) Cacing gilig
A. jika jawaban (1), (2), dan (3) betul
B. jika jawaban (1) dan (3) betul
C. jika jawaban (2) dan (4) betul
D. jika jawaban (4) saja yang betul
E. jika semua jawaban betul

62. Manfaat penggunaan sinar gamma dari isotop P-32 dalam bidang pertanian adalah...
A. diperoleh varietas padi IR 5 dan IR 8
B. dapat memecahkan masalah fotosintesis
C. dapat ditentukan waktu pemupukan yang tepat
D. diperoleh varietas padi Atomita I dan Atomita II
E. mengetahui informasi tentang kompetensi pengambilan nutrisi

63. Pada tahap transpor elektron, terjadi di.... dan jumlah ATP yang dihasilkan sebanyak...
A. sitoplasma, 2 ATP
B. sitoplasma, 34 ATP
C. mitokondria, 2 ATP
D. mitokondria, 18 ATP
E. mitokondria, 34 ATP

64. Nitrogen dalam tumbuhan Tracheophyta diserap dalam bentuk...
A. ion nitrat
B. gas amonia
C. asam amino
D. senyawa nitrit
E. senyawa nitrogen

Pembahasan? Cek Youtube Lenny Agustin

65. Gas berikut yang menyebabkan hujan asam adalah...
(1) NO_2
(2) NO
(3) SO_2
(4) SO
A. jika jawaban (1), (2), dan (3) betul
B. jika jawaban (1) dan (3) betul
C. jika jawaban (2) dan (4) betul
D. jika jawaban (4) saja yang betul
E. jika semua jawaban betul

66. Bakteri yang bersifat gram positif berarti memiliki dinding sel lebih tebal dibandingkan bakteri gram negatif. Manakah yang termasuk bakteri gram positif?
(1) Staphylococcus sp.
(2) Salmonella sp.
(3) Listeria sp.
(4) Pseudomonas sp.
A. jika jawaban (1), (2), dan (3) betul
B. jika jawaban (1) dan (3) betul
C. jika jawaban (2) dan (4) betul
D. jika jawaban (4) saja yang betul
E. jika semua jawaban betul

67. Stomata tumbuhan menutup pada saat...
A. Intensitas cahaya tinggi
B. kelembapan udara tinggi
C. zat terlarut keluar dari sel
D. ion kalium terakumulasi di dalam sel
E. kadar CO_2 di ruang antar sel berkurang

68. Protozoa digolongkan menjadi empat kelas berdasarkan...
A. Habitat
B. Jenis inti sel
C. Jenis alat gerak
D. Cara perkembangbiakan
E. Cara memperoleh makanan

69. Dalam suatu studi, kacang ercis memiliki alel dominan yang mengatur munculnya sifat biji bulat (A) dan alel resesif yang mengatur munculnya sifat biji kisut (a). Pada lokus lain di kromosom yang berbeda, alel dominan (B) mengatur munculnya warna kuning pada biji, sedangkan alel resesif (b) mengatur munculnya warna hijau pada biji. Jika persilangan antara dua kacang ercis menghasilkan ¼ biji kisut dan ½ biji kuning, maka genotipe dari kedua ercis tersebut adalah...
A. AABB x aabb
B. AaBb x aabb
C. AaBb x Aabb
D. AaBb x AaBb
E. Aabb x Aabb

70. Suatu campuran gas yang terdiri dari metana CH_4 dan etena C_2H_4 dibakar sempurna 10 mL (T,P) menghasilkan 16 mL karbondioksida (T,P). Volume metana dalam campuran tersebut adalah...
A. 12 mL
B. 10 mL
C. 8 mL
D. 4 mL
E. 2 mL

71. Urutan basa nitrogen mRNA hasil transkripsi menggunakan cetakan tunggal DNA komplemen dari CATGCATT adalah...
A. GUACGUAA
B. GTACGTAA
C. GTAGCUCC
D. CUACGUGG
E. CTACGTAA

72. Konfigurasi elektron ion X^{2+} yang memiliki bilangan massa 32 dan 11 neutron adalah...
A. $1s^2\ 2s^2\ 2p6\ 3s^2\ 3p6\ 4s1$
B. $1s^2\ 2s^2\ 2p6\ 3s^2\ 3p6\ 3d1$
C. $1s^2\ 2s^2\ 2p6\ 3s^2\ 3p6\ 4s^2\ 3d1$
D. $1s^2\ 2s^2\ 2p6\ 3s^2\ 3p6\ 4s^2\ 3d2$
E. $1s^2\ 2s^2\ 2p6\ 3s^2\ 3p6\ 4s^2\ 3d3$

73. Berapa titik didih larutan naftalena ($C_{10}H_8$) 5 gram dalam 100 gram benzena, jika diketahui konstanta kenaikan titik didih benzena adalah 2,53°C/m dan titik didih benzena murni adalah 80°C?
A. 0,99
B. 75
C. 79
D. 81
E. 100,99

74. Persentase massa karbon dalam pembakaran sempurna 5 gram cuplikan yang mengandung senyawa hidrokarbon menghasilkan 8,8 gram karbon dioksida (Ar: C = 12, O = 16) adalah...
A. 17
B. 20
C. 40
D. 48
E. 50

75. Senyawa kovalen XY_3 terbentuk dari atom dengan nomor atom X dan Y berturut –turut 53 dan 9. Bentuk molekul yang sesuai untuk senyawa kovalen tersebut adalah...
A. Bentuk V
B. Huruf T
C. Segitiga datar
D. Segitiga piramidal
E. Segitiga bipiramidal

76. Kromium (III) nitrat dialiri arus listrik sebesar 10 A selama 15 menit. Berapa massa logam kromium yang akan mengendap pada katode? (Ar Cr = 52)
A. 6,50 gram
B. 4,34 gram
C. 1,62 gram
D. 0,26 gram
E. 0,018 gram

77. Perhatikan reaksi berikut!
$2SO_2 + O_2 \rightarrow 2SO_3$
Pada volume tertentu, tekanan awal gas SO_2 dan gas O_2 sebesar 1 atm. Jika pada kesetimbangan tekanan total gas adalah 1,850 atm, maka nilai Kp reaksi tersebut adalah...
A. 0,151
B. 0,216
C. 0,504
D. 1,333
E. 3,422

78. Perhatikan reaksi kesetimbangan berikut! $CO_2 + H_2 \rightarrow CO + H_2O$, K=15, Sebanyak 5 mol gas CO_2 dan x mol gas H_2 dimasukkan ke dalam wadah 5 liter. Setelah tercapai kesetimbangan didapat 2 mol CO, maka harga x adaiah...
A. 1,00
B. 2,25
C. 3,30
D. 4,70
E. 5, 20

79. Sebuah dawai bermassa 20 gram dan sepanjang 50 cm direntangkan dengan tegangan 64 N. Berapakah kecepatan gelombang dalam dawai tersebut ketika dawai digetarkan?
A. 20 m/s
B. 30 m/s
C. 40 m/s
D. 50 m/s
E. 60 m/s

80. Sebuah mesin Carnot digunakan untuk menggerakan sebuah generator yang tegangan keluarannya 220 V. Jika mesin Carnot bekerja pada suhu antara 27°C dan 227°C, serta tiap detiknya menyerap kalor 5.500 J, maka kuat arus keluaran maksimum generator adalah...
A. 5 A
B. 10 A
C. 15 A
D. 20 A
E. 25 A

81. Elektrolisis yang menghasilkan larutan dengan pH lebih dari 7 adalah...
(1) KNO_3
(2) $AgNO_3$
(3) $Cr_2(SO_4)_3$
(4) NaCl
A. jika jawaban (1), (2), dan (3) betul
B. jika jawaban (1) dan (3) betul
C. jika jawaban (2) dan (4) betul
D. jika jawaban (4) saja yang betul
E. jika semua jawaban betul

82. Semula motor yang diam dipercepat dengan percepatan a selama selang waktu tertentu. Kemudian diperlambat dengan perlambatan a sampai akhirnya berhenti. Waktu total awal sampai berhenti adalah t. Maka, kecepatan maksimum mobil adalah...
A. $\frac{a.t}{b}$
B. $\frac{b.t}{at}$
C. $\frac{a.t}{a+b}$
D. $\frac{a.b}{a+b}$
E. $\frac{a.b}{a+b}$

83. Terdapat dua buah benda bermassa masing-masing 36 kg dan 16 kg terpisah sejauh 2 meter. Jika pengaruh gavitasi bumi tidak diperhitungkan, letak titik terhadap salah satu benda yang medan gravitasinya bernilai nol adalah...

A. 0,24 m
B. 0,83 m
C. 1,20 m
D. 2,00 m
E. 3,33 m

84. Suatu senyawa hidrokarbon dibakar sempurna dengan oksigen berlebih menghasilkan 176 gram CO_2 (Mr = 44) dan 90 gram H_2O. Rumus molekul hidrokarbon tersebut adalah...

A. C_4H_8
B. C_4H_{10}
C. C_6H_6
D. C_2H_4
E. C_2H_6

85. Sebuah jam bandul yang biasanya digunakan di bumi, dibawa ke sebuah planet yang gaya gravitasinya ¼ gaya gravitasi bumi. Astronot mencatat periode jam bandul di planet tersebut adalah 4 jam. Periode jam bandul tersebut saat di bumi adalah...

A. 1 jam
B. 2 jam
C. 3 jam
D. 4 jam
E. 5 jam

Pembahasan? Cek Youtube Lenny Agustin

86. Pemain sirkus mengendarai sepeda mengelilingi dinding bagian dalam *tong stand* yang berdiameter 16 m dengan kecepatan minimal 10 m/s. Agar tidak jatuh, permukaan dinding dirancang kasar. Maka, koefisien gerak statis minimum dinding adalah...

A. 0,2
B. 0,4
C. 0,6
D. 0,8
E. 1,6

87. Sebuah balok kayu bervolume 1.600 cm^3 bermassa 1,5 kg dikaitkan dengan pegas diatas kolam. Jika konstanta pegas 100 N/m, maka pertambahan panjang pegas saat kolam penuh berisi air adalah...

A. 3 cm
B. 5 cm
C. 10 cm
D. 15 cm
E. 22 cm

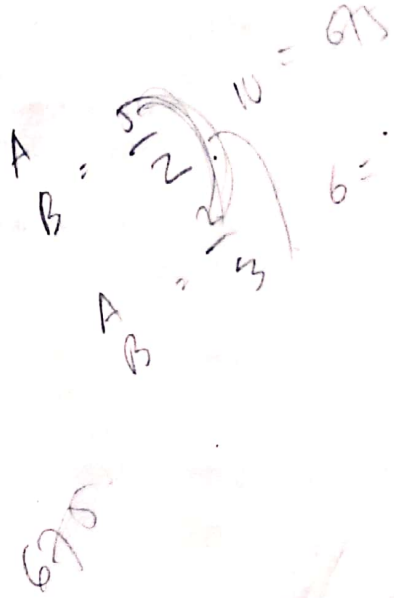
88. Pada percobaan Young, digunakan celah ganda berjarak 1 mm. Jarak celah ke layar 2 m. Celah dikenai cahaya monokromatik dengan panjang gelombang 1,2 x 106 m. Jarak antara pola gelap ke-3 dan pola terang ke-2 pada layar adalah...

A. 0,4 mm
B. 0,8 mm
C. 1,2 mm
D. 1,6 mm
E. 2,0 mm

89. Sebuah truk bermassa 2,5 ton bergerak dengan kecepatan 20 m/s. Kemudian, truk mengalami percepatan karena di rem. Jika setelah menempuh jarak 1 km kecepatan truk menjadi 40 m/s. Besar gaya yang diberikan mesin truk adalah...
A. 1250 N
B. 1500 N
C. 2250 N
D. 4750 N
E. 5000 N

Pembahasan? Cek YT Lenny Agustin

90. Kawat A dan B dibuat dari bahan yang sama. Perbandingan kawat A dibanding panjang kawat B = 5 : 2, sedangkan perbandingan luas penampang A dibanding luas penampang B = 2 : 3. Jika hammbatan kawat A adalah 675 Ω, besar hambatan kawat B adalah...
A. 180 Ω
B. 225 Ω
C. 253 Ω
D. 482 Ω
E. 945 Ω



91. Penulisan kata yang tercetak miring pada kalimat di bawah ini sudah tepat, kecuali...
A Gedung rakyat itu dibangun secara *swadaya*
B *Ekosistem* laut Indonesia sudah mengkhawatirkan
C *Sistem* perekrutan pegawai tersebut tidak jelas
D *Berdasarkan Analisa* bahwa korupsi di Indonesia semakin meningkat
E Kualitas ekspor Indonesia semakin menurun

92 Masalah yang dihadapi pemerintah Kalimantan Selatan dalam mencanangkan Banjarmasin sebagai pusat pertumbuhan bagi Kalsel sangatlah banyak. Sebagai kota pusat aktivitas provinsi, Banjarmasin tidak bisa mengelak dari arus urbanisasi. Penduduk berdatangan dari berbagai pelosok Kalimantan dengan tujuan mengadu untung. Kehadiran mereka beserta keluarga sekaligus memunculkan beragam persoalan kota. Dimana mana tampak permukiman kumuh baru. Penertiban yang berlangsung tanpa henti ternyata bukan menjadi hambatan untuk masuknya penduduk dari luar kota.
Cuplikan teks eksposisi di atas mengenakan tesis tentang ...
A. Pusat aktivitas provinsi
B. Penertiban kota Banjarmasin
C. Persoalan permukiman kumuh
D. Permasalahan pemerintah Kalsel
E. Arus urbanisasi yang meningkat

93 Kalimat yang mengandung sebab- akibat adalah...
A. Karena mesin yang tidak dirawat sehingga pesawat beerhenti mendadak
B. Pesawat tidak bisa meneruskan penerbangan sebab adanya gangguan mesin mendadak
C. Karena ada gangguan mesin mendadak, pesawat tidak bisa meneruskan penerbangan
D. Pilot berusaha mendarat kembali karena pesawat akan jatuh
E. Akhirnya, pesawat itu jatuh karena tidak bisa mendarat

94. Pak Abas sedang ... barang dagangan di tokonya.
Kata berimbuhan yang tepat untuk mengisi bagian yang rumpang pada kalimat tersebut

A Mensurvei
B menyurvei
C Memsurvei
D mesuvei
E Mensuvei

95. Azka mempunyai motor-motoran unik yang tidak dimiliki teman sebayanya. Makna kata ulang motor-motoran tersebut adalah...

A Banyak
B Berulang
C Menyerupai
D Bermacam-macam
E Paling

Pembahasan 7: Cek Youtube Lenny Agustin

96. Penulisan unsur serapan yang tepat adalah...
A Ekstrim
B Adzan
C Analisis
D konkrit
E kwitansi

97 Meskipun bukan termasuk sehat, kopi memiliki efek yang baik untuk kesehatan gigi. Penelitian terbaru dari negeri Cappucino Italia, menguatkan fakta itu. Carlo Pruzzo, dari Universitas Ancona menjelaskan, senyawa yang terkandung dalam kopi menghentikan bakteri yang menempel ke gigi sintetis. Senyawa tersebut juga efektif membasmi bakteri yang bisa langsung merusak gigi.

Tesis tersebut mengenalkan isu tentang...
A. Kopi yang bukan minuman sehat
B. Kopi yang bisa menyehatkan gigi
C. Kopi yang membasmi bakteri pada gigi
D. Kopi yang merusak gigi
E. Kopi yang memiliki efek yang baik

98 (1) Tsunami merupakan serangkaian gelombang ombak raksasa. (2) gelombang tersebut timbul karena adanya pergeseran di dasar laut akibat gempa bumi. (3) gempa bumi yang pernah terjadi di Aceh dan Sumatera Utara mencapai 9 skala richter sehingga menyebabkan tsunami. (4) jadi memang tsunami identik dengan gempa yang terjadi di dasar laut. (5) gelombang yang ditimbulkannya memiliki kecepatan sekitar 600 per jam (hampir 1.000 km per jam) atau sama dengan kecepatan rata-rata pesawat udara.

Definisi umum dinyatakan dengan kalimat...
A. (3) – (4)
B. (1) – (4)
C. (1) – (2)
D. (2) – (3)
E. (4) – (6)

99 Kata sifat yang terdapat dalam soal 98 adalah...
A. Rata-rata, pernah, gelombang
B. Serangkaian, memang, gempa
C. Kecepatan, timbul, serangkaian
D. Raksasa, sama, identik
E. Sama, identik, rata-rata

100 Kalimat fakta yang terdapat dalam soal 98 adalah...
A. (3) – (5)
B. (1) – (2)
C. (1)- (3)
D. (3) –(4)
E. (2) – (3)

Pembahasan? Cek Youtube Kenny Agustin

Kenapa tidak selembar