

BANK SOAL USM STIS

KUMPULAN SOAL USM STIS
2007 - 2016

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Untukmu yang akan bertarung

Pengantar

Kami meyakini, semakin dini kita bersiap diri akan semakin besar peluang kita memenangkan sebuah pertarungan. USM STIS adalah salah satu pertarungan Anda melawan puluhan ribu petarung dari seluruh pelosok negeri. Mempertarungkan nasib dan masa depan untuk menjadi seorang statistisi.

Ebook ini hanya sekumpulan soal USM STIS selama sepuluh tahun terakhir bagi sebagian orang. Bagi sebagian yang lain, ada yang mencetaknya untuk kemudian menjadikannya bahan try out mandiri. Hanya sekumpulan soal tanpa kunci jawaban. Kunci jawaban bisa didapatkan di buku-buku pembahasan soal USM STIS.

Jadi, kalau bukan sekarang, kapan kamu mengasah pedangmu?

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November 2016

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Mata Uji Matematika

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Soal Matematika USM STIS 2007

Waktu : 90 Menit

Petunjuk

- Di bawah setiap soal dicantumkan 5 kemungkinan jawaban masing masing diberi kode A, B, C, D atau E. Gunakan pensil 2B untuk menghitamkan lingkaran yang berisi kode jawaban yang saudara anggap benar pada lembar jawaban computer (LJK)
- Nilai Jawaban tiap soal adalah :
2 untuk jawaban benar
0 untuk tidak ada jawaban
-1 untuk jawaban salah
- Mengganti jawaban dilakukan dengan cara melingkari kode jawaban baru yang dipilih kemudian bubuhkan tanda silang di dalam lingkaran jawaban sebelumnya.
- Lembar jawaban tidak boleh kotor dan terlipat
- Hanya lembar jawaban yang dikumpulkan, sedangkan soal bisa dibawa pulang.

Selamat Mengerjakan

*Yang kita tahu hanyalah setetes air,
Yang tidak kita ketahui sejumlah lautan*

1. Jika α dan β adalah akar-akar dari persamaan $8(2^x) = (3x - x^2)^{x+3}$, maka nilai $\frac{1}{\alpha^2} + \frac{1}{\beta^2}$ adalah ...

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

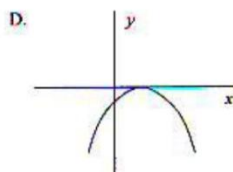
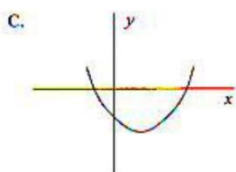
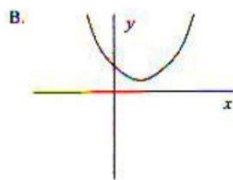
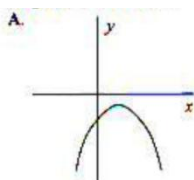
2. Jika α dan β adalah akar-akar dari persamaan $\left(\frac{x^2-7x}{x^2-9}\right) + 1 = \left(\frac{x^2-2}{x^2-9}\right)$ maka nilai $\alpha + \beta$ adalah...

A. -7
 B. -1
 C. 1
 D. 7

3. Persamaan $cx^2 + ax + b = 0$ tidak memiliki akar riil jika:

A. $b^2 - 4ac > 0$
 B. $b^2 - 4ac < 0$
 C. $a^2 - 4bc > 0$
 D. $a^2 - 4bc < 0$

4. Diketahui fungsi kuadrat $y = ax^2 + bx + c$ dengan $a < 0$; $b > 0$; $c < 0$; dan $b^2 < 4ac$, grafik fungsi akan berbentuk :



5. Batas nilai k agar garis $3x+2y+1=0$ tidak memotong parabola $y^2 = 2kx$...

A. $k < 0$ atau $k > \frac{3}{2}$
 B. $0 < k < \frac{3}{2}$
 C. $0 \leq k \leq \frac{3}{2}$
 D. $k \leq 0$ atau $k \geq \frac{3}{2}$

6. himpunan penyelesaian ketidaksamaan $2x-1 < x+1 < 3-x$ adalah :

A. $\{x|x < 1\}$
 B. $\{x|x < 2\}$
 C. $\{x|1 < x < 2\}$
 D. $\{x|x < 1\}$ atau $\{x|x < 2\}$

7. Penyelesaian dari ketidaksamaan $\frac{x^2-5x+4}{x-3} \leq \frac{x^2+x-2}{x-2}$ adalah...

A. $2 < x \leq \frac{14}{5}$ atau $x > 3$
 B. $x \leq 1$ atau $2 < x \leq \frac{14}{5}$ atau $x > 3$
 C. $1 \leq x < 2$ atau $\frac{14}{5} \leq x \leq 3$
 D. $x \geq \frac{14}{5}$

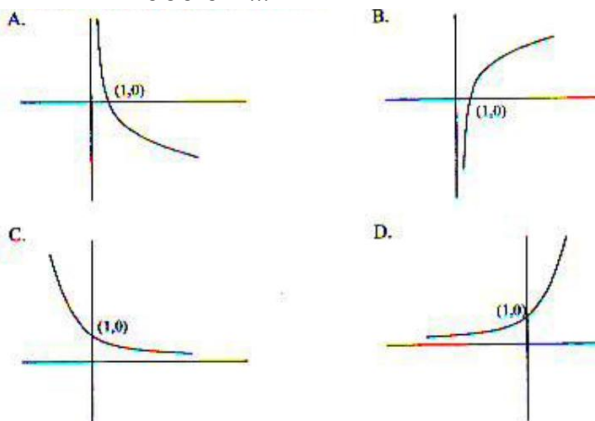
8. jika $\sqrt{x^2} < 3$ maka nilai x yang tidak memenuhi ketidaksamaan tersebut adalah...

A. $-3 < x < 3$
 B. $x < -3$
 C. $0 \leq x < 3$
 D. $-1 < x < 1$

9. Jika $f(x) = 5^x$ dan $g(x) = x^2 + 3$ untuk $x \neq 0$, maka $f^{-1}(g(x^2) - 3)$ adalah...

- A. $\log_5(x^4 + 3)$
- B. $\log_5(x^4 - 3)$
- C. $4\log_5 x$
- D. $2\log x$

10. Grafik $y = \log_a x$; dengan $0 < a < 1$ adalah ...



11. $\int_0^{\sqrt{2\ln 3}} x e^{\frac{x^2}{2}} dx =$

- A. $4/3$
- B. 1
- C. $2/3$
- D. $1/3$

12. $\int \frac{1}{x \ln 10} dx =$

- A. $\ln|x| + C$
- B. $x \ln|x| + C$
- C. $1 - {}^{10}\log|x| + C$
- D. ${}^{10}\log|x| + C$

13. Fungsi $f(x)$ ditentukan oleh $f(x) = \frac{2x+1}{x-3}, x \neq 3$. Jika $f^{-1}(x)$ invers dari $f(x)$, maka $f^{-1}(x+1)$ adalah...

A. $\frac{3x-4}{x-2}, x \neq 2$

- B. $\frac{3x+4}{x-2}, x \neq 2$
- C. $\frac{3x-4}{x-1}, x \neq 1$
- D. $\frac{3x+4}{x-1}, x \neq 1$

14. Jika $f(x) = x + \frac{1}{x}$ dan $g(x) = x - \frac{1}{x}$, maka $g(f(x))$ adalah ...

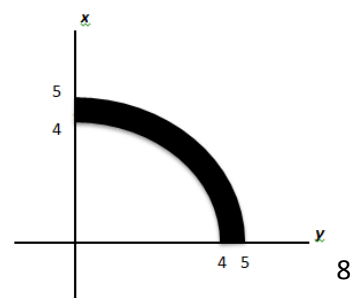
- A. $x^2 - \frac{1}{x^2}$
- B. $\frac{x^2+1}{x} - \frac{x}{x^2+1}$
- C. $\frac{x^2-1}{x} - \frac{x}{x^2-1}$
- D. $2x$

15. Jika $f(x) = \frac{1}{x}$ dan $g(x) = 2x - 1$, maka $(f^{-1} \circ g^{-1})(x) = \dots$

- A. $\frac{2}{x+1}$
- B. $\frac{x+1}{2x}$
- C. $\frac{2}{x-1}$
- D. $\frac{1-x}{2x}$

16. P sebuah titik pada parabola $y = x^2 - x - 6$ dengan absis 4. Garis singgung parabola pada P memotong sumbu y di M. Jika O pusat koordinat, maka panjang M

- A. 18
- B. 22
- C. 24
- D. 28



17. Gradien garis singgung kurva di sebarang titik (x,y) ditentukan oleh persamaan $m = 2x + 3$. Jika kurva melalui titik $(2,4)$ maka persamaan kurva tersebut adalah ...

- A. $y = 2x^2 + 3x - 10$
- B. $y = 2x^2 + 3x + 10$
- C. $y = x^2 + 3x + 6$
- D. $y = x^2 + 3x - 6$

18. jumlah tak hingga dari deret geometri adalah 81 dan suku pertamanya adalah 27. Jumlah semua suku bernomer genap deret tersebut adalah ...

- A. $32\frac{2}{5}$
- B. $21\frac{3}{5}$
- C. $18\frac{9}{13}$
- D. $12\frac{6}{13}$

19. $\frac{\sin 4A + \sin 2A}{\cos 4A + \cos 2A} =$

- A. $\tan 6A$
- B. $\tan 3A$
- C. $\tan 2A$
- D. $2 \tan A$

20. Jika $\alpha + \beta + \gamma = 180$, maka $\sin 2\alpha - \sin 2\beta + \sin 2\gamma =$

- A. $4 \cos \alpha \sin \beta \cos \gamma$
- B. $4 \sin \alpha \sin \beta \sin \gamma$
- C. $4 \sin \alpha \cos \beta \cos \gamma$
- D. $4 \sin \alpha \sin \beta \cos \gamma$

21. Pada suatu segitiga ABC, diketahui sudut C dua kali lebih besar dari A dan sudut B tiga kali lebih besar dari A, maka

perbandingan (rasio) antara panjang AB terhadap panjang BC adalah

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

22. $\lim_{x \rightarrow \infty} [\sqrt{x^2 + 2x} - \sqrt{x^2 - 3x}] =$

- A. 0
- B. $2\frac{1}{2}$
- C. $\frac{1}{2}$
- D. ∞

23. $\lim_{x \rightarrow \infty} \left[\frac{9-x^2}{4-\sqrt{x^2+7}} \right] =$

- A. 8
- B. $\frac{9}{4}$
- C. 4
- D. 1

24. $\lim_{n \rightarrow \infty} \left[1 + \frac{1}{2} + \frac{1}{4} + \dots + \frac{1}{2^n} \right] =$

- A. 0
- B. $\frac{1}{2}$
- C. 1
- D. 2

25. Jika $\lim_{x \rightarrow 4} \left[\frac{ax+b-\sqrt{x}}{x-4} \right] = \frac{3}{4}$, maka $a+b$ adalah

- A. -1
- B. $\frac{1}{4}$
- C. 0
- D. 1

26. Jika $f(x) = 2x^2 - 1$,
 $\lim_{k \rightarrow \infty} \frac{f(x+k) - f(x)}{k} =$

- A. 1
B. 2
C. $2x$
D. $4x$
27. Untuk memproduksi x unit barang per hari, suatu perusahaan harus mengeluarkan biaya sebesar $x^3 - 2000x^2 + 3000000x$ rupiah. Jika barang harus diproduksi, maka biaya produksi per unit barang yang paling rendah tercapai untuk produksi per hari sebanyak:
- A. 1000 unit barang
B. 1500 unit barang
C. 2000 unit barang
D. 3000 unit barang
28. $f(x) = 2x^3 + 9x^2 - 24x + 5$ merupakan fungsi turun untuk nilai-nilai x :
- A. $-1 < x < 4$
B. $-4 < x < 1$
C. $x > 1$ atau $x < -4$
D. $x < -1$ atau $x > 4$
29. Jika daerah yang berwarna gelap pada gambar berikut diputar mengelilingi sumbu x , maka volume benda putar yang terjadi adalah :
- A. 5π satuan luas
B. 9π satuan luas
C. 25π satuan luas
D. 45π satuan luas
30. Jika daerah I adalah daerah yang dibatasi oleh kurva $f(x)$ dan $g(x)$ yang merupakan fungsi kuadrat dan daerah II adalah daerah yang dibatasi oleh kurva $f(x)$ dan sumbu x , maka perbandingan luas daerah I dan II adalah:
31. Jika diketahui $f(0) = 1$, $f(1) = 2$ dan $\int_0^1 f(x)dx = 3$, maka $\int_0^1 xf(x)dx = \dots$
- A. -2
B. 2
C. -1
D. 1
32. Jika S adalah himpunan semesta, A dan B adalah himpunan dalam S , $n(\cdot)$ menyatakan banyaknya unsur dalam satu himpunan. Diketahui $n(S) = 34$, $n(A) = 17$, $n(B) = 18$ dan $n(A^c \cap B^c) = 2$ maka $n(A \cap B) = \dots$
- A. 2
B. 3
C. 4
D. 5
33. Banyaknya himpunan bagian dari himpunan $\{y | y^2 - 10y + 25 = 0\}$ adalah ...
- A. 0
B. 1
C. 2
D. 4
34. Suatu keluarga mempunyai 5 orang anak. Anak termuda berumur x tahun dan yang tertua $2x$ tahun. Tiga anak yang

lain berturut-turut berumur $x+2$, $x+4$ dan $2x-3$. Bila rata-rata hitung umur mereka adalah 16 tahun, maka umur anak ketiga...

- A. 9 tahun
- B. 11 tahun
- C. 13 tahun
- D. 15 tahun

35. Dari data berikut ini: 6, 8, 5, 10, 6, 9, 3, 11. Maka besarnya nilai

- A. Modus = 6; median = 8
- B. Rata-rata = $7\frac{1}{4}$; jangkauan = 5
- C. Median = 7; rata-rata = $7\frac{1}{4}$
- D. Modus = 7; jangkauan = 8

36. Berikut adalah tabl distribusi frkuensi nilai ujian dari 60 orang siswa:

Nilai ujian	3	4	5	6	7	8	9
Frekuensi	3	5	1 2	1 7	1 4	6	3

Seorang siswa dinyatakan lulus jika nilai ujiannya lebih tinggi dari nilai rata-rata dikurangi 1. Jumlah siswa yang lulus sebanyak...

- A. 52 orang
- B. 40 orang
- C. 38 orang
- D. 23 orang

Soal No. 37 dan 38

Disuatu perusahaan terdapat 10 orang kurir yang setiap hari bertugas mengantar kiriman ke

tempat yang berbeda. Sarana transportasi yang tersedia adalah 2 mobil, 3 motor, dan 5 sepeda. Diantara kurir tersebut, 2 orang berjenis kelamin perempuan. Seluruh kurir yang naik sepeda adalah laki-laki dan ada seorang kurir laki-laki yang naik motor.

37. Jika suatu hari terdapat satu kiriman, peluang untuk yang mengantarkan adalah kurir laki-laki atau mengendarai motor adalah...

- A. $\frac{2}{8}$
- B. $\frac{2}{3}$
- C. $\frac{2}{10}$
- D. $\frac{9}{10}$

38. Jika diketahui kurir yang mengantar mengendarai motor, peluang bahwa dia berjenis kelamin perempuan adalah...

- A. $\frac{1}{3}$
- B. $\frac{2}{3}$
- C. $\frac{1}{2}$
- D. $\frac{9}{10}$

39. Matriks X yang memenuhi persamaan $\begin{bmatrix} 8 & 7 \\ 2 & 2 \end{bmatrix} X = \begin{bmatrix} 4 & 6 \\ 8 & 2 \end{bmatrix}$ adalah...

- A. $\begin{bmatrix} -24 & -1 \\ 28 & 2 \end{bmatrix}$
- B. $\begin{bmatrix} 1 & -\frac{7}{2} \\ -1 & 4 \end{bmatrix}$
- C. $\begin{bmatrix} -48 & -2 \\ 56 & 4 \end{bmatrix}$
- D. $\begin{bmatrix} 2 & -7 \\ -2 & 8 \end{bmatrix}$

40. Jika $C = \begin{bmatrix} 1 & 2 \\ -1 & 3 \end{bmatrix}$ dan $(CD)^{-1} = \frac{1}{10} \begin{bmatrix} 5 & -5 \\ -9 & 11 \end{bmatrix}$, maka $D = \dots$

- A. $\begin{bmatrix} 11 & 5 \\ 9 & 5 \end{bmatrix}$
- B. $\begin{bmatrix} 3/5 & -2/5 \\ 1/5 & 1/5 \end{bmatrix}$
- C. $\begin{bmatrix} 3 & 1 \\ 4 & 2 \end{bmatrix}$
- D. $\begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$

41. Jika diketahui $\vec{p} = \begin{bmatrix} 3 \\ 3 \\ -3 \end{bmatrix}$ dan $\vec{q} = \begin{bmatrix} 2 \\ a \\ 3 \end{bmatrix}$, besar sudut antara vektor \vec{p} dan vektor \vec{q} adalah 90° , maka nilai a adalah

- A. -1
- B. 0
- C. 1
- D. 2

42. Jika untuk matriks $A = \begin{bmatrix} a & b \\ 0 & d \end{bmatrix}$ dan $B = \begin{bmatrix} p & q \\ 0 & s \end{bmatrix}$ berlaku $AB = BA$, maka

- A. $(a + d)b = (p + s)q$
- B. $(a + d)q = (p + s)b$
- C. $(a - d)b = (p - s)q$
- D. $(a - d)q = (p - s)b$

43. Diketahui matriks $A = \begin{bmatrix} 1 & 2 \\ 4 & 3 \end{bmatrix}$ dan $I = \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$, nilai x yang memenuhi persamaan determinan $(A - xI) = 0$ adalah

- A. -1 atau -5
- B. 1 atau -5
- C. 1 atau 5
- D. -1 atau 5

44. Solusi dari sistem persamaan linier

$$\begin{aligned} 2x - 3z &= 11 \\ 4x + 5y + z &= 6 \\ 4y + 12z &= 0 \end{aligned}$$

adalah:

- A. $x = 17/2, y = -6, z = 2$
- B. $x = 0, y = 0, z = 0$
- C. $x = 17/2, y = 6, z = 2$
- D. $x = 17/2, y = -6, z = -2$

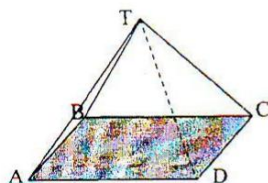
45. Luas daerah parkir 160 m^2 dengan daya tamping maksimum 20 kendaraan. Biaya parkir untuk sebuah mobil sedan Rp 1000/jam dan unruk sebuah bus Rp 2000/jam. Jika untuk parkir sebuah mobil sedan dibutuhkan luas 4 m^2 dan untuk sebuah bus 20 m^2 , dan dalam satu jam tidak ada kendaraan yang pergi dan datang, maka hasil maksimum yang diperoleh dari tempat parkir itu adalah

- A. Rp 16.000
- B. Rp 20.000
- C. Rp 25.000
- D. Rp 40.000

46. Jika titik $P(2,4)$ dicerminkan terhadap garis $y = 2$ dan kemudian dicerminkan lagi terhadap garis $x = 3$, maka bayangannya adalah

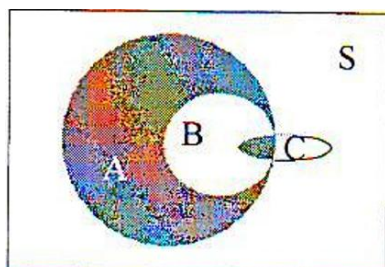
- A. $P'(2,2)$
- B. $P'(4,0)$
- C. $P'(0,4)$
- D. $P'(4,4)$

47. Diketahui limas T.ABCD dengan alas ABCD berbentuk persegi panjang dengan panjang $AB=8$, $BC=6$, $TA=TB=TC=TD=10$.



Jika O merupakan titik pertemu diagonal ABCD, maka tinggi TO adalah:

- A. $2\sqrt{3}$
 - B. $3\sqrt{3}$
 - C. $4\sqrt{3}$
 - D. $5\sqrt{3}$
48. Sebuah kantong berisi 2 bola putih dan 3 bola hitam. Berdasarkan urutan nama depan menurut abjad dari Deri, Agus, Beni, dan Chandra akan mengambil sebuah bola yang tidak dikembalikan lagi ke dalam kantong. Yang pertama kali mendapat bola putih mendapat hadiah 100 ribu rupiah. Peluang Deri mendapat hadiah adalah:
- A. $\frac{1}{5}$
 - B. $\frac{2}{5}$
 - C. $\frac{1}{10}$
 - D. $\frac{2}{10}$
49. Pernyataan yang tidak memenuhi wilayah yang berwarna gelap adalah



- A. $(B \cap C) \cup (A \cap B^c)$
- B. $(B \cap C) \cup (B^c \cup C^c)$
- C. $(B \cap C) \cup (A - B)$
- D. $(A \cap B \cap C) \cup (A \cap B^c)$

Soal no. 50 dan 51

50. Jika $x^3 - ax^2 + 5x + b$ habis dibagi oleh $x^2 - 2x - 3$, maka Hasil baginya adalah

- A. $x - 1$
- B. $x + 1$
- C. $x - 4$
- D. $x + 4$

51. Besarnya nilai $a + b$ adalah

- A. -18
- B. -6
- C. 6
- D. 18

52. Persamaan garis singgung pada parabola $(y + 4)^2 = 8(x - 2)$ yang sejajar dengan garis $4x + y - 5 = 0$ adalah:

- A. $y = 4x - 3\frac{1}{2}$
- B. $y = 4x + 3\frac{1}{2}$
- C. $y = -4x - 3\frac{1}{2}$
- D. $y = -4x + 3\frac{1}{2}$

53. Suatu fungsi kuadrat dalam x habis dibagi $x + 2$. Jika dibagi $x - 1$ maka sisanya adalah 6, dan jika dibagi dengan $x - 2$ maka sisanya adalah 12. Fungsi kuadrat yang dimaksud adalah:

- A. $x^2 + 3x - 2$
- B. $x^2 + 3x + 2$
- C. $-x^2 + 3x - 2$

- D. $-x^2 - 3x + 2$
54. Jumlah dari deret geometri $(k + 1) + (k - 2) + (k + 3)$ adalah:
- A. $7/8$
 B. $13/8$
 C. $15/8$
 D. $19/8$
55. Pada barisan bilangan $4, x, y, 12$ diketahui tiga suku pertama membentuk barisan geometri dan tiga suku terakhir membentuk barisan aritmatika. Nilai $y - x =$
- A. 0 dan 3
 B. 3 dan 8
 C. 0 dan -3
 D. 3 dan -8
56. Untuk membuat suatu rangkaian bunga tersedia 5 varietas bunga. Jika minimal terdapat satu varietas bunga setiap rangkaian, maka banyaknya rangkaian bunga berbeda yang dapat dibuat adalah:
- A. 24
 B. 25
 C. 31
 D. 32
57. Dari 5 huruf konsonan yang berbeda dan 4 huruf vokal yang berbeda akan disusun kata masing-masing terdiri atas 3 huruf konsonan dan 2 huruf vokal yang berbeda. Banyaknya kata tanpa arti yang dapat dibentuk yang diawali dan diakhiri oleh huruf vokal adalah:
- A. 120
 B. 240
 C. 720
 D. 1440
58. Sebuah bola dilempar ke atas membentuk suatu lintasan dengan fungsi ketinggian $H = -11t^2 + 44t + 256$ kaki setelah t detik. Ketinggian maksimum dari bola tersebut:
- A. 2 kaki
 B. 4 kaki
 C. 256 kaki
 D. 300 kaki
59. Untuk menjadi mahasiswa STIS seseorang tidak boleh buta warna. Jika pernyataan "saya mahasiswa STIS" dilambangkan H dan "saya tidak buta warna" dilambangkan dengan K, maka pernyataan yang benar adalah:
- A. $K \Rightarrow H$
 B. $H \Rightarrow K$
 C. K adalah syarat cukup bagi H
 D. H adalah syarat perlu bagi K
60. Pernyataan "Jika Bambang lulus ujian, aka Bambang akan menikah". Kalimat ingkaranya adalah:
- A. Jika Bambang menikah, maka Bambang pasti lulus ujian
 B. Jika Bambang tidak lulus ujian, maka Bambang akan menikah

C. Jika Bambang tidak lulus ujian, maka Bambang tidak akan menikah

D. Jika Bambang tidak menikah, maka Bambang tidak lulus ujian

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Waktu : 90 Menit

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2 untuk jawaban benar
0 untuk tidak ada jawaban
-1 untuk jawaban salah
- Mengganti jawaban dilakukan dengan cara melingkari kode jawaban baru yang dipilih kemudian bubuhkan tanda silang di dalam lingkaran jawaban sebelumnya.
- Lembar jawaban tidak boleh kotor dan terlipat
- Hanya lembar jawaban yang dikumpulkan, sedangkan soal bisa dibawa pulang.

Selamat Mengerjakan

*Kebingungan adalah pintu ilmu pengetahuan,
Maka bertanya adalah kuncinya*

1. Masing-masing bilangan 1,2,3,4,5 diisikan kedalam \square dibawah ini satu kali. Hasil terbesar yang mungkin didapat dari operasi $\square - \square \times \square : \square$ adalah

A. 3
B. $8\frac{1}{3}$
C. $12\frac{1}{2}$
D. 25

2. Diketahui deret $\cos x + \sin x \cos x + \sin^2 x \cos x + \dots$ jika $0 < x < \pi$, maka jumlah deret tersebut adalah

A. $\frac{\cos x}{1 - \sin x}$
B. $\frac{\sin x}{1 - \cos x}$
C. $\frac{1 - \sin x}{\cos x}$
D. $\frac{1 - \cos x}{\sin x}$

3. Rataan dari $a - 2$; $b + 3$; dan $c + 5$ adalah 6. Rataan dari $a + 4$; $b + 6$; dan $c - 1$ adalah

A. 5
B. 6
C. 7
D. 8

4. Satu huruf diambil secara acak masing-masing dari kata KOMPUTASI dan STATISTIK. Peluang terambil dua huruf yang berbeda adalah

A. $\frac{1}{81}$
B. $\frac{2}{81}$
C. $\frac{2}{9}$

D. $\frac{8}{9}$

5. Bilangan 1 2 A 3 4 terdiri atas 5 angka (5 digit). Peluang bilangan tersebut habis dibagi 6 adalah

A. $\frac{1}{5}$
B. $\frac{3}{5}$
C. $\frac{7}{10}$
D. $\frac{3}{10}$

6. Tes untuk kenaikan grade pada suatu kursus bahasa inggris diikuti beberapa peserta. Pengumuman hasil tes menunjukkan bahwa 40% peserta memperoleh nilai 6, sedangkan 20% peserta memperoleh nilai 7 dan 30% peserta memperoleh nilai 8. Sementara sisanya memperoleh nilai 9. Berdasarkan hasil tes tersebut susunan nilai *mean*, *median*, dan *modus* adalah

A. Median < mean < modus
B. Modus < median < mean
C. Mean < median < modus
D. Modus < mean < median

7. Perhatikan data pada tabel berikut :

nilai ujian	3	4	5	6	7	8	9
frekuensi	3	5	12	17	14	6	3

Seorang siswa dinyatakan lulus jika nilai ujiannya lebih tinggi dari nilai rata-rata

dikurangi 1, maka jumlah siswa yang lulus adalah

- A. 23
- B. 38
- C. 40
- D. 52

8. Dalam suatu kotak terdapat 9 tiket yang bernomor 1 sampai 9. Jika 2 buah tiket diambil secara acak. Maka peluang bahwa terambil satu nomor ganjil dan satu nomor genap yang berurutan adalah

- A. $\frac{1}{9}$
- B. $\frac{2}{9}$
- C. $\frac{4}{9}$
- D. $\frac{5}{9}$

9. Nilai dari $\frac{7x^{\frac{-3}{2}}\sqrt[6]{y^5}}{(x^{\frac{5}{4}}-6y^{\frac{-1}{3}})x^{-2}}$ untuk $x = 4$ dan $y = 27$ adalah

- A. $(1+2\sqrt{2})9\sqrt{2}$
- B. $(1+2\sqrt{2})9\sqrt{3}$
- C. $(1+2\sqrt{2})18\sqrt{2}$
- D. $(1+2\sqrt{2})27\sqrt{2}$

10. Nilai dari $16^{0,125} - (0,5)^{-0,5}$ =

- A. 0
- B. $2\sqrt{2}$
- C. $\sqrt{2}$
- D. $-2\sqrt{2}$

11. Jika $f(x) = 3^{-x}$, maka untuk setiap x berlaku $f(x) - f(x + 1) =$

- A. $-\frac{1}{3}f(x)$
- B. $\frac{1}{3}f(x)$
- C. $-\frac{2}{3}f(x)$
- D. $\frac{2}{3}f(x)$

12. Seperti terlihat pada gambar berikut, terdapat 1 lingkaran besar dan 2 lingkaran kecil yang berjari-jari sama. Kedua lingkaran kecil bersinggungan tepat di titik pusat lingkaran besar.



Apabila luas daerah yang diarsir yang berada di dalam lingkaran besar sama dengan luas daerah yang di lingkaran besar. Maka perbandingan jari-jari lingkaran besar dan kecil adalah

- A. 3 : 2
- B. 2 : 1
- C. $\sqrt{3} : 1$
- D. $\sqrt{2} : 1$

13. Grafik fungsi $f(x) = -2^{x+1} + (\sqrt{2})^x + 3$ memotong sumbu X di titik yang absisnya

- A. $2 \log_2 3 - \log 2$
- B. C. $1 - \log_2 3$
- C. $\log_2 3 - 1$
- D. D. $2 \log_2 3 - 2$
14. Seseorang akan melakukan perjalanan dengan menggunakan sepeda motor dari kota A ke kota B dan tiba di kota B pada suatu waktu yang telah ditentukan. Jika dia mengendarai sepeda motor dengan kecepatan 35 km/jam maka akan sampai di kota B lebih lambat 2 jam dari waktu yang telah ditentukan. Sedangkan jika kecepatan ditingkatkan menjadi 50 km/jam maka akan tiba 1 jam lebih awal dari waktu yang telah ditentukan tersebut. Selisih waktu kedatangan dengan waktu yang telah ditentukan apabila kecepatannya 60 km/jam adalah
- A. 1 jam 30 menit
- B. 2 jam 10 menit
- C. 2 jam
- D. 2 jam 40 menit
15. Diketahui sistem persamaan :
- $$4^{x-2y+1} = 8^{2x-y}$$
- $$3^{x+y+1} = 9^{2x-y-4}$$
- Nilai $x^2 + y^2$ adalah
- A. 8
- B. 5
- C. $\frac{101}{9}$
- D. $\frac{65}{9}$
16. Sistem persamaan dari bilangan riil x , y , dan z adalah
- $$(x+y)(x+y+z) = 120$$
- $$(y+z)(x+y+z) = 96$$
- $$(z+x)(x+y+z) = 72$$
- Nilai $3x + 2y + z =$
- A. 20
- B. 22
- C. 26
- D. 30
17. Di sebuah supermarket, Cahyo membeli 6 barang X dan 2 barang Y dengan harga Rp 50.000,-. Nur membeli 10 barang X dan 4 barang Y dengan harga Rp 95.000,-. Jika Sugi ingin membeli 2 buah barang X dan sebuah barang Y, maka ia harus membayar dengan harga :
- A. Rp 17.500,-
- B. Rp 20.500,-
- C. Rp 22.500,-
- D. Rp 37.500,-
18. Jika garis $4x + 2y = 5$ tegak lurus terhadap garis $cx + (2c-1)y = 9$, maka nilai c yang memenuhi adalah

- A. -4
- B. $-\frac{1}{4}$
- C. $\frac{1}{4}$
- D. 4
19. a, b, c, dan d adalah bilangan riil yang memenuhi persamaan :
- $$\frac{a}{b} + \frac{b}{c} + \frac{c}{d} + \frac{d}{a} = 6 \quad \text{dan}$$
- $$\frac{a}{c} + \frac{b}{d} + \frac{c}{a} + \frac{d}{b} = 8$$
- Nilai $\frac{a}{b} + \frac{c}{d} =$
- A. -4 atau 2
- B. -1 atau 3
- C. 2 atau 3
- D. 2 atau 4
20. Fungsi $f(x) = 2x^3 - 9x^2 + 12x$ akan naik pada interval :
- A. $0 < x < 2$
- B. $1 \leq x \leq 2$
- C. $x < 1$ atau $x > 2$
- D. $1 < x < 2$
21. Jika garis $ay - y = 3$ dan $x + 2y = b$ berpotongan di titik (2,1), maka :
- A. $a = 2$ dan $b = 4$
- B. $a = \frac{1}{2}$ dan $b = -4$
- C. $a = -2$ dan $b = 4$
- D. $a = -\frac{1}{2}$ dan $b = 4$
22. titik-titik yang berjarak 5 satuan dari titik (3,2) dan berjarak 1 satuan dari garis $y = 7$ adalah
- A. (7,8) dan (4,6)
- B. (0,6) dan (6,6)
- C. (8,6) dan (0,8)
- D. (6,8) dan (6,6)
23. Pusat dari jari-jari lingkaran $2x^2 + 2y^2 - 8x - 16y + 8 = 0$ adalah
- A. (4,8) dan $6\sqrt{2}$
- B. (2,4) dan 4
- C. (8,4) dan $6\sqrt{2}$
- D. (4,2) dan 4
24. Diketahui premis-premis berikut :
- P_1 : jika $x^2 < 9$ maka $-3 < x < 3$
- P_2 : $x < -3$ atau $x > 3$
- Kesimpulan dari 2 premis tersebut adalah :
- A. $x^2 \geq 9$
- B. $x^2 > 9$
- C. $x^2 < 9$
- D. $x^2 \leq 9$
25. Agung mempunyai tiket konser band "U2" untuk dijual. Pada hari pertama terjual 5 lembar tiket. Pada hari kedua terjual setengah dari tiket yang tersisa, dan

pada hari ketiga terjual 10 tiket. Jika tersisa 2 lembar tiket, banyaknya tiket Agung mula-mula :

- A. 26
- B. 27
- C. 28
- D. 29

26. Invers dari implikasi :
" jika ruangan ber-AC maka Edy memakai jaket".

- A. Edy memakai jaket dan ia tidak di ruangan ber-AC
- B. Jika Edy tidak memakai jaket maka ruangan tidak ber-AC
- C. jika ruangan tidak ber-AC maka Edy tidak memakai jaket
- D. Jika Edy memakai jaket, maka ruangan ber-AC

27. Diketahui A adalah sudut lancip dan $\cos \frac{1}{2}A = \sqrt{\frac{x+1}{2x}}$. nilai $\sin A =$

- A. $\frac{\sqrt{x^2-1}}{x}$
- B. $\frac{x}{\sqrt{x^2-1}}$
- C. $\sqrt{x^2-1}$
- D. $\frac{\sqrt{x^2+1}}{x}$

28. Di suatu pulau terpencil terdapat dua kelompok manusia, yaitu manusia jujur yang selalu berkata benar dan manusia pembohong yang selalu berkata dusta. Jika anda datang ke pulau tersebut dan bertemu dengan dua orang manusia X dan Y yang berkata :

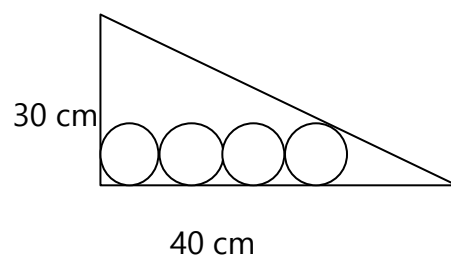
X : " Y pembohong "

Y : " X pembohong "

Maka jenis kesimpulan yang paling benar adalah

- A. X dan Y pembohong
- B. X dan Y berasal dari jenis yang berbeda
- C. X jujur, Y pembohong
- D. A, B, dan C salah

29. Empat buah lingkaran yang berjari-jari sama dimasukan ke dalam segitiga siku-siku seperti terlihat dalam gambar :

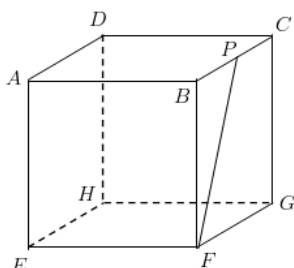


Jari-jari lingkaran tersebut adalah

- A. 2 cm
- B. 3 cm
- C. 4 cm
- D. 5 cm

30. Kubus ABCD.EFGH memiliki volume 64 satuan volume.

Kubus tersebut kita letakkan ke dalam koordinat ruang sedemikian rupa sehingga titik A ada di koordinat $(4,0,0)$ dan titik E di koordinat $(4,4,0)$.



Koordinat titik Q apabila titik P berada tepat di tengah garis BC dan titik Q tepat berada di tengah garis FP adalah

- A. $(2, 3, 4)$
- B. $(3, 2, 4)$
- C. $(3, \sqrt{5}, 4)$
- D. $(\sqrt{5}, 3, 4)$

31. N : Himpunan semua bilangan asli
 R : Himpunan semua bilangan real
 Q : Himpunan semua bilangan rasional
 Z : Himpunan semua bilangan bulat
 C : Himpunan semua bilangan kompleks,
 maka pernyataan yang benar adalah

- A. $N \subset Z \subset R \subset Q \subset C$

- B. $N \subset Z \subset Q \subset C \subset R$
- C. $N \subset Z \subset Q \subset R \subset C$
- D. $N \subset Z \subset R \subset C \subset Q$

32. Himpunan daerah asal dari invers fungsi : $y = \frac{2x+5}{x-3}$ untuk $x \in \mathbb{R}, x \neq 3$ adalah

- A. $\{y | y \neq 3; y \in \mathbb{R}\}$
- B. $\{y | y \neq 2; y \in \mathbb{R}\}$
- C. $\{y | y > 2; y \in \mathbb{R}\}$
- D. $\{y | y \in \mathbb{R}\}$

Untuk soal nomor 33 dan 34

Sebuah riset dilakukan di suatu wilayah untuk mengetahui pendapat masyarakat tentang kenaikan Bahan Bakar Minyak (BBM) dan pemberian Bantuan Langsung Tunai (BLT). Responden yang digunakan dalam riset tersebut terdiri atas 1000 orang. Diantara 1000 orang tersebut ternyata 200 orang diantaranya setuju dengan kenaikan BBM dan pemberian BLT. Dari uraian tersebut,

33. Jumlah orang yang setuju dengan kenaikan BBM tetapi tidak setuju dengan program pemberian BLT adalah

- A. 50
- B. 100
- C. 200
- D. 250

34. Proporsi orang yang tidak setuju dengan kenaikan BBM dan tidak setuju program pemberian BLT adalah

- A. 0,80
- B. 0,75
- C. 0,70
- D. 0,85

35. $\lim_{n \rightarrow 0} \frac{\sqrt[3]{8+n}-2}{n} = \dots$

- A. ∞
- B. 0
- C. $\frac{1}{12}$
- D. $\frac{4}{3}$

36. Jika $f^{-1}(x) = \frac{x-1}{5}$ dan $g^{-1}(x) = \frac{3-x}{2}$, maka $(f \circ g)^{-1}(16) = \dots$

- A. 2
- B. 1
- C. 1
- D. -2

37. Jika $f(x)$ dibagi $(x - 2)$ sisanya 24, sedangkan jika $f(x)$ dibagi dengan $(2x - 3)$ sisanya 20. Jika $f(x)$ dibagi $(x - 2)(2x - 3)$ sisanya adalah

- A. $8x + 8$
- B. $8x - 8$
- C. $-8x + 8$
- D. $-8x - 8$

38. Invers fungsi $f(x)$ dan $g(x)$ adalah $f^{-1}(x)$ dan $g^{-1}(x)$. Jika $h(x) = 2x + 1$

dan $(f \circ g \circ h)(x^2) = 8x^2 + 2$, maka nilai $(g^{-1} \circ f^{-1})(x) = \dots$

- A. $\frac{1}{8}$
- B. $\frac{1}{4}$
- C. $\frac{1}{2}$
- D. 1

39. Misal f didefinisikan oleh $y = \frac{1}{2}\sqrt{4-x^2}$ dimana $(x|-2 \leq x \leq 0)$, maka kebalikan (*invers*) dari fungsi f adalah

- A. $x = -2\sqrt{1-y^2}$, dengan domain $\{y|0 \leq y \leq 1\}$ dan range $\{x|-2 \leq x \leq 0\}$
- B. $f^{-1}(x) = 2\sqrt{1-y^2}$, dengan domain $\{y|0 \leq y \leq 1\}$ dan range $\{x|-2 \leq x \leq 0\}$
- C. $x = -2\sqrt{1-y^2}$, dengan domain $\{x|-2 \leq x \leq 0\}$ dan range $\{y|0 \leq y \leq 1\}$
- D. $f^{-1}(x) = 2\sqrt{1-y^2}$ dengan domain $\{x|-2 \leq x \leq 0\}$ dan range $\{y|0 \leq y \leq 1\}$

40. $\lim_{x \rightarrow 1} \frac{x^{3n}-x}{1-x} = \dots$

- A. $3n - 1$
- B. $1 - 3n$
- C. $3n$
- D. $3n + 1$

41. $\lim_{x \rightarrow \infty} (1 - \frac{5}{x})^{-x} = \dots$

- A. 0
- B. 1

- C. e
- D. e^5

42. $\lim_{x \rightarrow 0} \frac{\tan x}{x^2 + 2x} = \dots$

- A. 0
- B. $\frac{1}{2}$
- C. $\frac{1}{3}$
- D. ∞

43. Jika $f(x) = \sin^2(2x + \frac{\pi}{6})$
maka nilai $f'(0) = \dots$

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

44. Diketahui $f(x) = 3x^2 - 5x + 2$;
 $g(x) = x^2 + 1$; dan $h(x) = f(x)$
 $- 2g(x)$. Jika turunan dari $h(x)$
 $= 0$, maka nilai x yang
memenuhi adalah

- A. $-\frac{2}{5}$
- B. $-\frac{5}{2}$
- C. $\frac{2}{5}$
- D. $\frac{5}{2}$

45. Jika diketahui turunan kedua
fungsi $f''(x) = 6x - 2$, fungsi y
 $= f(x)$ melalui titik $A(1,6)$ dan
gradien garis singgung pada
titik A adalah 4, maka fungsi
tersebut adalah

- A. $x^3 - x^2 + 5x + 1$
- B. $x^3 - x^2 + 4x + 2$
- C. $x^3 - x^2 + 3x + 3$
- D. $x^3 - x^2 + 2x + 4$

46. Luas maksimum empat
persegi panjang yang
berada di dalam daerah
yang dibatasi oleh kurva $y =$
 $3 - x^2$ dan $y = 0$ adalah

- A. 2π
- B. 4π
- C. 2
- D. 4

47. Jumlah 2 buah bilangan riil
tak negatif x dan y tidak
lebih besar dari 10. Jika $y + 8$
tidak lebih kecil dari $2x$,
maka nilai maksimum dari $3x$
 $+ y$ adalah

- A. 12
- B. 15
- C. 18
- D. 22

48. Ada seorang pengusaha kue
setiap hari memproduksi 2
jenis kue yang hanya tahan 1
hari. Kue-kue dibuat untuk
dijual di toko milik
pengusaha tersebut atau
berdasarkan pesanan dari
pelanggan. Setiap kue jenis
1 dijual dengan harga Rp
500 dan kue jenis 2 Rp 750
dengan keuntungan masing-
masing 25% dan 50% dari
modal. Setiap hari dia
membuat kue dengan modal
Rp 120.000 dan maksimum
memproduksi 250 kue. Esok
harinya pengusaha tersebut
mendapat pesanan 100 kue

jenis 1, dan jika tidak dapat memenuhi pesanan, maka dia akan terkena denda sebesar 20% dari nilai total pesanan tersebut. Keuntungan maksimum yang dapat diperoleh pengusaha kue tersebut adalah

- A. Rp 40.000,-
- B. Rp 50.000,-
- C. Rp 60.000,-
- D. Rp 70.000,-

49. Luas daerah pada kuadran I yang dibatasi oleh kurva $y = 4 - x^2$, garis $y = 3x$ dan $y > 0$ adalah

- A. $\frac{2}{6}$
- B. $\frac{4}{6}$
- C. $\frac{19}{6}$
- D. $\frac{21}{6}$

50. Daerah S terletak di kuadran I yang dibatasi parabola $y = \frac{1}{2}x^2$, parabola $y = 2x^2$ serta garis $y = 5$. Volume benda putar yang terjadi bila S diputar terhadap sumbu Y adalah

- A. $\frac{3}{4}\pi$
- B. π
- C. $\frac{4}{3}\pi$
- D. $\frac{75}{4}\pi$

51. Dua kali luas daerah pada kuadran I yang dibatasi oleh garis $y = 0$, $y = x$, dan

lingkaran $x^2 + y^2 = 4$ adalah

- A. $\frac{1}{2}\pi$
- B. π
- C. $\frac{3}{2}\pi$
- D. 2π

52. Apabila $f(x)$ dapat diintegralkan pada selang $a < x < b$, maka berlaku

- A. $\int_a^b f(x)dx = f(a) - f(b)$
- B. $\int_a^b f(x)dx + \int_b^a f(x)dx = 2 \int_a^b f(x)dx$
- C. $\int_a^b f(x)dx - \int_b^a f(x)dx = 0$
- D. $\int_a^b f(x)dx + \int_b^a f(x)dx = 0$

53. $\sqrt{48} + \sqrt{75} - \sqrt{392} + \sqrt{128} =$

- A. $3\sqrt{3} - 2\sqrt{2}$
- B. $3(3\sqrt{3} - 2\sqrt{2})$
- C. $\sqrt{3} + \sqrt{2}$
- D. $3(2\sqrt{3} - 2\sqrt{2})$

54. Jika $\begin{bmatrix} x \\ y \end{bmatrix} = \begin{bmatrix} 3 & -2 \\ 1 & 1 \end{bmatrix} \begin{bmatrix} a \\ b \end{bmatrix}$ dan $\begin{bmatrix} a \\ b \end{bmatrix} = \begin{bmatrix} 2 & 3 \\ 5 & -2 \end{bmatrix} \begin{bmatrix} p \\ q \end{bmatrix}$ maka $\begin{bmatrix} x \\ y \end{bmatrix} =$

- A. $\begin{bmatrix} 5 & 1 \\ 6 & -1 \end{bmatrix} \begin{bmatrix} p \\ q \end{bmatrix}$
- B. $\begin{bmatrix} 6 & -6 \\ 5 & -2 \end{bmatrix} \begin{bmatrix} p \\ q \end{bmatrix}$
- C. $\begin{bmatrix} 1 & -5 \\ -4 & 3 \end{bmatrix} \begin{bmatrix} p \\ q \end{bmatrix}$
- D. $\begin{bmatrix} -4 & 13 \\ 7 & 1 \end{bmatrix} \begin{bmatrix} p \\ q \end{bmatrix}$

55. Misal $\mathbf{A} = \begin{bmatrix} x+y & x \\ y & x-y \end{bmatrix}$ dan

$$\mathbf{B} = \begin{bmatrix} 1 & -\frac{1}{2}x \\ -2y & 3 \end{bmatrix}. \text{ Jika } \mathbf{B}^T$$

menyatakan matriks transpose dari \mathbf{B} , maka persamaan $\mathbf{B}^T = \mathbf{A}$ akan terpenuhi bila nilai x dan y adalah

- A. $y = -1$ dan $x = 2$
- B. $y = -1$ dan $x = 4$
- C. $y = 2$ dan $x = -1$
- D. $x = y$

56. Matriks $\mathbf{C} = \begin{bmatrix} 6 & 2x+1 \\ 2 & x+1 \end{bmatrix}$ tidak memiliki invers untuk nilai $x = \dots$

- A. -2
- B. -1
- C. 0
- D. 2

57. Jika titik (a, b) dicerminkan terhadap sumbu Y , kemudian dilanjutkan dengan transformasi matriks $\begin{bmatrix} -2 & 1 \\ 1 & 2 \end{bmatrix}$ akan menghasilkan titik $(1, -8)$ maka nilai $a + b = \dots$

- A. -2
- B. -1
- C. 1
- D. 2

58. Seorang anak menyimpan uang dengan selisih kenaikan simpanan antar bulan tetap. Pada bulan pertama sebesar Rp 50.000,-,

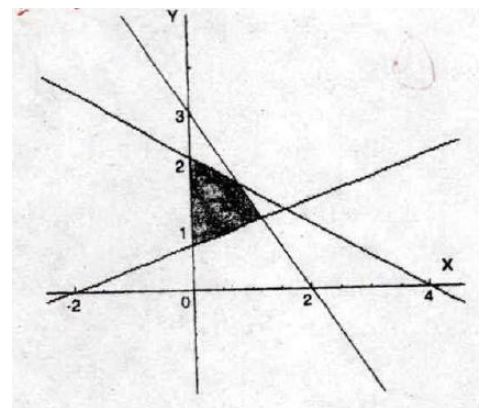
bulan kedua Rp 55.000,-, bulan ketiga Rp 60.000,- dan seterusnya. Jumlah uang simpanan anak tersebut selama dua tahun adalah

- A. Rp 1.315.000,00
- B. Rp 1.320.000,00
- C. Rp 2.040.000,00
- D. Rp 2.580.000,00

59. Titik belok dari fungsi $y = x^3 + 6x^2 - 8x + 1$ adalah

- A. $(-2, 33)$
- B. $(2, 17)$
- C. $(-\frac{1}{3}, -1)$
- D. $(3, 58)$

60. Himpunan penyelesaian dari daerah yang diarsir adalah



- A. $\{(x,y) | y \leq 2x + 1; y \leq 4 - \frac{1}{2}x; y \leq 3 - \frac{4}{3}x; x > 0\}$
- B. $\{(x,y) | y \geq 2x + 1; y \leq 4 - x; y \leq 3 - \frac{4}{3}x; x > 0\}$
- C. $\{(x,y) | y \geq \frac{1}{2}x + 1; y \leq 4 - 2x; y \leq 3 - \frac{4}{3}x; x > 0\}$

D. $\{(x,y) | y \leq \frac{1}{2}x + 1; y \leq 4 -$

$2x; y \leq 3 - \frac{4}{3}x; x > 0\}$

fisher education

Soal Matematika USM STIS 2009

Waktu : 90 Menit

Petunjuk

- Di bawah setiap soal dicantumkan 5 kemungkinan jawaban masing masing diberi kode A, B, C, D atau E. Gunakan pensil 2B untuk menghitamkan lingkaran yang berisi kode jawaban yang saudara anggap benar pada lembar jawaban computer (LJK)
- Nilai Jawaban tiap soal adalah :
2 untuk jawaban benar
0 untuk tidak ada jawaban
-1 untuk jawaban salah
- Mengganti jawaban dilakukan dengan cara melingkari kode jawaban baru yang dipilih kemudian bubuhkan tanda silang di dalam lingkaran jawaban sebelumnya.
- Lembar jawaban tidak boleh kotor dan terlipat
- Hanya lembar jawaban yang dikumpulkan, sedangkan soal bisa dibawa pulang.

Selamat Mengerjakan

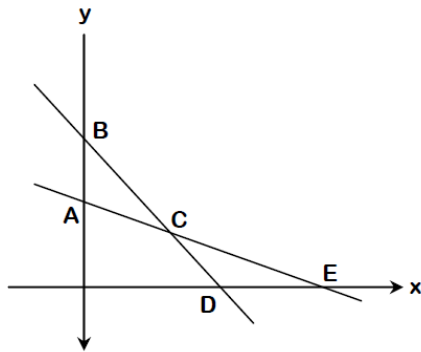
*Di balik kesulitan, pasti terdapat kemudahan
Di balik kesusahan, pasti terdapat kebahagiaan*

1. Oma dewi mempunyai 3 orang anak yang sudah memberikan cucu. Jumlah cucu Oma Dewi dari anak pertama dan ketiga adalah 3 orang. Sementara itu selisih jumlah cucu dari anak pertama dan kedua adalah 1 orang, sedangkan dua kali jumlah cucu dari anak kedua dikurangi jumlah cucu dari anak ketiga adalah 1 orang. Dari keterangan tersebut jumlah cucu yang dimiliki Oma Dewi adalah
 - A. 3
 - B. 4
 - C. 6
 - D. 8
 - E. 11
2. Jika salah satu akar persamaan kuadrat $x^2 + 5x - a = 0$ dua kali akar persamaan $2x^2 + bx + 3 = 0$, maka nilai $a - b$ adalah
 - A. -11
 - B. -1
 - C. 0
 - D. 1
 - E. 11
3. Jika A merupakan titik balik fungsi $f(x) = -x^2 - 2x + 3$ maka persamaan garis yang melalui A dengan gradient -2 adalah
 - A. $y + 2x + 1 = 0$
 - B. $y + 2x - 2 = 0$
 - C. $y + 2x - 4 = 0$
 - D. $y + 2x + 2 = 0$
 - E. $y + 2x + 4 = 0$
4. Nilai x yang memenuhi pertidaksamaan $\frac{2}{x-3} \geq \frac{4}{x+4}$ adalah
 - A. $x \leq -4$ atau $3 \leq x \leq 10$
 - B. $x < -4$ atau $3 < x \leq 10$
 - C. $-4 < x < 3$ atau $x > 10$
 - D. $-4 < x \leq 3$ atau $x \geq 10$
 - E. $-4 \leq x < 3$ atau $x > 10$
5. Terdapat 2 buah garis $g: y = a_1x + b_1$ dan $h: y = a_2x + b_2$. Pernyataan berikut yang tidak tepat adalah
 - A. g dan h akan berpotongan jika $a_1 \times a_2 = -1$
 - B. g sejajar dengan h jika $b_1 = b_2$
 - C. g sejajar dengan h jika $\frac{a_1}{a_2} = 1$
 - D. g dan h tidak akan berimpit jika $b_1 \neq b_2$
 - E. g dan h tidak akan berpotongan jika $a_1 = a_2$
6. Jika daerah yang dibatasi oleh kurva $y = 2x^2 + 1$, garis $x = 1$, sumbu x , dan sumbu y diputar 360° mengelilingi sumbu x , maka volume benda putar yang terjadi adalah satuan volume.
 - A. $\frac{12}{15}\pi$
 - B. 2π
 - C. $\frac{27}{15}\pi$
 - D. $\frac{47}{15}\pi$
 - E. 4π
7. Daerah yang memenuhi system pertidaksamaan

$$2x + y \geq 4$$

$$x + 2y \leq 4$$

$$x \geq 0 \text{ dan } y \geq 0$$



- A. OACD
- B. OBCD
- C. ABC
- D. CDE
- E. OAE

8. Sebuah dadu seimbang dilemparkan dua kali. Jika kita tertarik pada jumlah dari dua mata dadu yang muncul dalam dua perlemparan tersebut, peluang munculnya jumlah mata dadu yang merupakan bilangan genap adalah

- A. $\frac{6}{36}$
- B. $\frac{10}{36}$
- C. $\frac{12}{36}$
- D. $\frac{20}{36}$
- E. $\frac{24}{36}$

9. Lima orang karyawan A, B,C,D, dan E memiliki pendapatan yang berbeda – beda dengan informasi sebagai berikut :
pendapatan A adalah $\frac{1}{2}$ dari pendapatan E;
pendapatan B lebih 100 ribu dari pendapatan A;

pendapatan C lebih 150 ribu dari pendapatan A; dan
pendapatan D kurang 180 ribu dari pendapatan E.

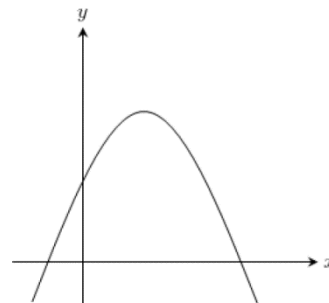
Bila rata – rata pendapatan kelima karyawan adalah 525 ribu, maka pendapatan D adalah

- A. 770 ribu
- B. 730 ribu
- C. 550 ribu
- D. 535 ribu
- E. 365 ribu

10. Nilai x yang memenuhi persamaan $\left| \frac{\cos x}{\sin x} - \frac{\cos 2x}{\sin 2x} \right| = \frac{1}{2}$ adalah

- A. $\pi/3$
- B. $\pi/4$
- C. $\pi/2$
- D. π
- E. $\pi/6$

11. Jika suatu fungsi parabola $y = cx^2 + bx + a$ memiliki grafik seperti di bawah ini, maka pernyataan berikut yang benar adalah



- A. $a > 0, b > 0, \text{ dan } c > 0$
- B. $a > 0, b > 0, \text{ dan } c < 0$
- C. $a < 0, b > 0, \text{ dan } c > 0$
- D. $a > 0, b < 0, \text{ dan } c < 0$

E. $a < 0, b > 0$, dan $c < 0$

12. $\log_a \frac{1}{\sqrt{b}} \log_b \frac{1}{\sqrt[3]{c}} \log_c \frac{1}{\sqrt[3]{a^2}} = \dots$

- A. -9
- B. $-\frac{1}{9}$
- C. $\frac{1}{9}$
- D. 3
- E. 0

13. Agar persamaan $x^2 + (m+1)x + 4 = 0$ mempunyai akar – akar persamaan nyata dan berbeda, nilai m yang memenuhi adalah

- A. $m < -5$ atau $m > 3$
- B. $m > -5$ atau $m < 3$
- C. $m < -3$ atau $m > 5$
- D. $m > -3$ atau $m < 5$
- E. $m < 3$ atau $m > 5$

14. Sebuah bilangan berupa pecahan. Jika pembilang ditambah 2, maka nilai pecahan tersebut menjadi $\frac{1}{4}$ dan jika penyebut dikurangi 5, maka nilai pecahan tersebut menjadi $\frac{1}{5}$. Jumlah pembilang dan penyebut pecahan tersebut adalah

- A. 16
- B. 18
- C. 20
- D. 23
- E. 26

15. Agar matriks $A = \begin{pmatrix} a & 2 & 3 \\ 1 & a & 4 \\ a & 2 & 5 \end{pmatrix}$ merupakan matriks singular, maka nilai a adalah

- A. -2 atau 2
- B. $-\sqrt{2}$ atau $\sqrt{2}$
- C. 1 atau -1
- D. 2
- E. $2\sqrt{2}$

16. Gradien garis singgung suatu kurva pada titik (x, y) dinyatakan oleh $\frac{dy}{dx} = 6x^2 - 2x + 1$. Jika kurva melalui $(1, 4)$ maka persamaan kurva adalah

- A. $y = 2x^3 - x^2 + x + 6$
- B. $y = 2x^3 - x^2 + x + 4$
- C. $y = 2x^3 - x^2 + x + 2$
- D. $y = 3x^3 - x^2 + x + 2$
- E. $y = 3x^3 - 2x^2 + x + 4$

17. Varians dari data berikut: 6, 8, 6, 7, 8, 7, 9, 7, 7, 6, 7, 8, 6, 5, 8, 7 adalah

- A. 1
- B. 2
- C. 4
- D. 6
- E. 7

18. Diketahui titik A(4, 9, -6) dan B (-4, -3, 2). Jika P membagi ruas garis AB di dalam dengan perbandingan 1 : 3, maka panjang ruas garis PB adalah

- A. $\sqrt{15}$
- B. $\sqrt{81}$
- C. $\sqrt{90}$
- D. $\sqrt{121}$
- E. $\sqrt{153}$

20. Perhatikan data pada tabel berikut :

Berat Badan (Kg)	Frekuensi
47 - 49,99	13
50 - 52,99	16
53 - 55,99	8
56 - 58,99	7
59 - 61,99	6

Median dari berat badan akan berada pada interval nilai

- A. 47 – 49,99
 B. 50 – 52,99
 C. 53 – 55,99
 D. 56 – 58,99
 E. 59 – 61,99
21. Lingkaran $x^2 + y^2 - 4x - 2y - 4 = 0$ memiliki sifat berikut, kecuali...
- A. Memotong sumbu x pada bidang koordinat
 B. Memotong sumbu y pada bidang koordinat
 C. Memiliki diameter 6
 D. Titik pusatnya memenuhi $x - y = 1$
 E. Titik pusat lingkaran berada dibawah sumbu x
22. Bentuk $(a^{-1} + b^{-1})^{-1}$ akan ekuivalen dengan...

- A. $a + b$
 B. $\frac{ab}{a+b}$
 C. a
 D. $\frac{1}{ab}$

E. $\frac{a+b}{ab}$

23. Jika garis $y = 3x - 2$ memotong parabola $y = x^2$ dititik A dan B, maka panjang ruas garis AB adalah...

- A. $\sqrt{2}$
 B. $\sqrt{5}$
 C. $\sqrt{10}$
 D. $\sqrt{15}$
 E. $3\sqrt{2}$

24. Jika panjang rusuk sebuah kubus 9 cm, maka luas permukaan bola di dalam kubus yang menyinggung sisi-sisi kubus adalah...

- A. $27\pi \text{ cm}^2$
 B. $81\pi \text{ cm}^2$
 C. $324\pi \text{ cm}^2$
 D. $54\pi \text{ cm}^2$
 E. $162\pi \text{ cm}^2$

25. Ada 10 kunci berbeda dan hanya satu diantaranya dapat digunakan untuk membuka pintu utama disuatu rumah. Kunci diambil oleh pemilik rumah satu persatu tanpa pengembalian. Peluang kunci yang terambil dapat digunakan untuk membuka pintu pada pengambilan keenam adalah...

- A. $\frac{1}{5}$
 B. $\frac{1}{6}$
 C. $\frac{1}{9}$
 D. $\frac{1}{10}$
 E. $\frac{1}{18}$

26. Jika $0^\circ < \alpha < 90^\circ$ dan $\tan \alpha = \frac{\sqrt{3}}{3}$, maka $\sin \alpha + \cos \alpha = \dots$

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

27. Jika $f(x+1) = \frac{x-2}{x+4}$ dengan $x \neq 4$, maka $f^{-1}(x)$ adalah...

- A. $\frac{2(2x-1)}{x-1}$
- B. $\frac{2(2x+1)}{x}$
- C. $\frac{3(x+1)}{x-1}$
- D. $\frac{-2(2x+1)}{x-1}$
- E. $\frac{-3(x+1)}{x-1}$

28. Jika $A = \begin{pmatrix} 1 & 0 \\ 2 & 1 \end{pmatrix}$ dan $B = \begin{pmatrix} 0 & 1 \\ 1 & 2 \end{pmatrix}$, maka determinan dari matriks $(A - B)(A + B)$ adalah...

- A. 0
- B. 1
- C. 2
- D. 4
- E. 6

29. $\log_{x \rightarrow 0} \frac{x(\cos 4x^2 - 1)}{\left(1 - \frac{1}{\cos^2 2x}\right)} = \dots$

- A. $\frac{4}{3}$
- B. $\frac{2}{3}$
- C. $\frac{1}{3}$
- D. $-\frac{1}{3}$
- E. $-\frac{4}{3}$

30. Daerah A dibatasi oleh parabola $y = x^2$, garis $y = 4$, dan garis $x = c$, dan daerah B dibatasi oleh parabola $y = x^2$, garis $x = c$, dan sumbu x . Jika luas A sama dengan luas B, maka luas segi empat yang dibatasi oleh sumbu x , sumbu y , garis $y = 4$, dan garis $x = c$ adalah...

- A. $\frac{16}{3}$
- B. 4
- C. $\frac{8}{3}$
- D. 6
- E. 16

31. Jika diketahui $(f \circ g)(x) = 4^{2x+1}$ dan $g(x) = 2x - 1$, maka $f(0)$ bernilai...

- A. 0
- B. 1
- C. 4
- D. 16
- E. 32

32. Persamaan garis lurus yang melalui pusat lingkaran $x^2 + y^2 - 2x - 2y = 0$ dan tegak lurus garis $x - 2y + 3 = 0$ adalah...

- A. $y + 2x + 1 = 0$
- B. $2y - x - 1 = 0$
- C. $y + 2x - 3 = 0$
- D. $2y + x + 1 = 0$
- E. $x - 2y + 3 = 0$

33. Koordinat titik pada garis $y = 2x - 15$ yang terdekat dengan titik asal (origin) adalah...

- A. $(2, -11)$
- B. $(6, -3)$
- C. $(10, 5)$
- D. $(4, -7)$
- E. $(-2, -19)$

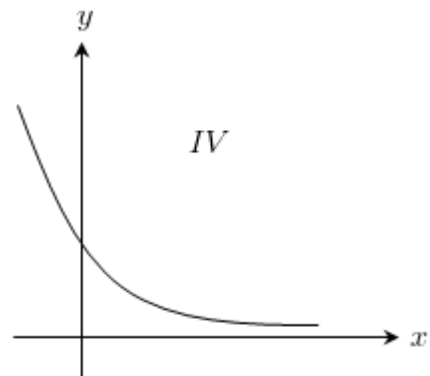
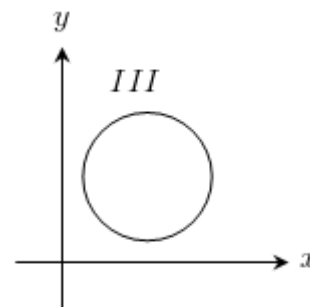
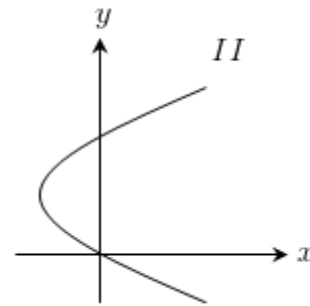
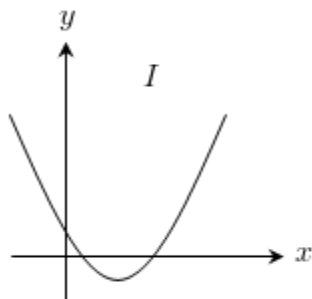
34. Akar-akar persamaan kuadrat $x^2 + px + q = 0$ adalah a dan b .
Jika $a^2b + ab^2 = 6$ dan $a^{-1} + b^{-1} = \frac{3}{2}$, maka $a^2 - b^2$ adalah...

- A. 0
- B. 3
- C. 5
- D. 6
- E. 7

35. Diketahui suatu fungsi $f(x) = x^3 + 2x^2 + c$. Jika $f''(3) + f'(3) + f(3) = \dots$

- A. 117
- B. 72
- C. 52
- D. 90
- E. 56

36. Grafik berikut yang dapat merupakan grafik fungsi $x = f(y)$ adalah...



- A. I dan IV
- B. I dan III
- C. II dan III
- D. II dan IV
- E. III dan IV

37. Seorang pedagang kelinci di depan Kebun Raya Bogor mempunyai 6 ekor kelinci putih dan 4 ekor kelinci belang. Jika terjual secara acak 5 ekor kelinci, peluang 3 diantaranya kelinci belang adalah...

- A. $\frac{1}{70}$
- B. $\frac{5}{21}$
- C. $\frac{10}{21}$
- D. $\frac{1}{40}$
- E. $\frac{3}{40}$

38. Nilai x yang memenuhi $x \log(x^2 + 4x + 4) \leq x \log(5x + 10)$ adalah...

- A. $1 < x \leq 3$
- B. $0 < x < 1$ atau $1 < x \leq 3$
- C. $0 < x < 1$
- D. $-2 < x \leq 3$
- E. $0 < x < 1$ atau $2 < x < 3$

39. Jika $A = \begin{bmatrix} 2 & 1 \\ -1 & 2 \end{bmatrix}$ dan $B = \begin{bmatrix} 1 \\ 2 \end{bmatrix}$, dan C adalah matriks sedemikian sehingga $AC = B$, maka matriks C yang memenuhi adalah...

- A. $\begin{bmatrix} 1 & 0 \end{bmatrix}$
- B. $\begin{bmatrix} 0 & 1 \end{bmatrix}$
- C. $\begin{bmatrix} 1 \\ 0 \end{bmatrix}$
- D. $\begin{bmatrix} 0 \\ 1 \end{bmatrix}$
- E. $\begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$

40. Tabel berikut menunjukkan distribusi jumlah gol yang dihasilkan kesebelasan BOLA dalam 10 kali pertandingan :

<i>Jumlah gol</i>	1	2	3
<i>Frekuensi</i>	2	2	4

Jangkauan dan simpangan kuartil dari jumlah gol yang dihasilkan adalah...

- A. 3 dan 1,5
- B. 4 dan 0,75
- C. 4 dan 3
- D. 3 dan 3
- E. 4 dan 1,5

41. Matriks A yang memenuhi persamaan

$$\begin{bmatrix} x & 1 \end{bmatrix} \begin{bmatrix} x \\ 1 \end{bmatrix} = x^2 + 5x - 6 \text{ adalah}$$

- A. $\begin{bmatrix} 1 & 5 \\ 0 & -6 \end{bmatrix}$
- B. $\begin{bmatrix} 5 & 1 \\ 0 & -6 \end{bmatrix}$
- C. $\begin{bmatrix} 1 & -6 \\ 5 & 0 \end{bmatrix}$
- D. $\begin{bmatrix} -6 & 0 \\ 1 & 5 \end{bmatrix}$
- E. $\begin{bmatrix} 1 & 0 \\ -6 & 5 \end{bmatrix}$

42. Jika $\lim_{x \rightarrow 4} \left[\frac{ax+b-\sqrt{x}}{x-4} \right] = \frac{3}{4}$, nilai a yang memenuhi adalah....

- A. -1
- B. 0
- C. 1
- D. 2
- E. 3

43. A dan G berturut-turut merupakan rata-rata hitung dan rata-rata ukur dari dua bilangan x dan y . Nilai $x^2 + y^2 =$

- A. $3A^2 + G^2$
- B. $4A^2 - 2G^2$
- C. $5A^2 - 3G^2$
- D. $4A^2 - G^2$
- E. $-3A^2 - 2G^2$

44. Suatu gedung mempunyai 5 pintu masuk, 3 orang hendak memasuki gedung tersebut. Banyaknya cara agar mereka dapat memasuki gedung tersebut dengan pintu yang berbeda adalah...

- A. 10
- B. 15
- C. 30
- D. 45
- E. 60

45. Nilai x yang memenuhi pertidaksamaan $\sqrt{3x+2} > \sqrt{4-x}$ adalah...

- A. $-\frac{1}{2} < x \leq 4$
- B. $\frac{1}{2} < x \leq 4$
- C. $-4 < x < \frac{1}{2}$
- D. $-\frac{1}{2} < x \leq -4$
- E. $-4 \leq x < -\frac{1}{2}$

46. Nilai $\frac{\sqrt{6}+\sqrt{2}}{(2+\sqrt{3})^2}$ adalah...

- A. 2
- B. 3
- C. 4
- D. $\sqrt{2}$
- E. $2\sqrt{6}$

Untuk nomor 47 dan 48

Di lah anak usia sekolah yang sedang bersekolah di SMK adalah 2500 orang, sementara itu jumlah siswa SMP adalah tiga kali jumlah siswa SMK. Diketahui pula bahwa jumlah siswa SMA dua kali jumlah siswa

SMK dan jumlah siswa SD dua kali jumlah siswa SMA.

47. Jika diagram lingkaran digunakan untuk menggambarkan persentase jumlah anak sekolah berdasarkan kategori pendidikannya, untuk kategori siswa SMP juring dalam lingkaran adalah...

- A. 30 derajat
- B. 108 derajat
- C. 120 derajat
- D. 40 derajat
- E. 144 derajat

48. Modus kategori pendidikan di kota itu adalah...

- A. SMK
- B. SMA
- C. SMP
- D. SD
- E. SMP dan SMA

49. Nilai maksimum dari fungsi kuadrat $f(x) = -2x^2 + (k+5)x + (1-2k)$ adalah 5. Jika k adalah bilangan bulat positif, maka nilai k yang memenuhi adalah....

- A. 5
- B. 6
- C. 7
- D. 8
- E. 9

50. Jika gaji Bambang, Nurseto, dan Jeffry digabung, maka hasilnya sama dengan 8 juta rupiah.

Apabila gaji Nurseto diambil 100ribu rupiah dan diberikan kepada Bambang, maka gaji Bambang akan sama dengan gaji Nurseto. Jika gaji Jeffry ditambah satu juta rupiah, maka gajinya akan sama dengan jumlah gaji Bambang dan Nurseto. Jadi, besarnya gaji Jeffry adalah....

- A. 1.75 juta rupiah
- B. 2.5 juta rupiah
- C. 3 juta rupiah
- D. 3.25 juta rupiah
- E. 3.5 juta rupiah

51. $\int_0^1 5x^3 \sqrt{x^2} dx = \dots$

- A. 8/15
- B. 15/8
- C. 15/2
- D. 2/15
- E. 5/3

52. Novi mengendarai mobil dari kota A ke kota B dengan kecepatan 60km/jam. Neli menyusul 45 menit kemudian dengan mobil lainnya dengan kecepatan 75 km/jam dnegan tujuan yang sama. Jika dalam perjalanan waktu istirahat yang dibutuhkan sama, yaitu 30 menit, dan keduanya tiba di kota B dalam waktu yang bersamaan, maka jarak antara kota A ke kota B adalah...

- A. 200 km
- B. 215 km
- C. 225 km
- D. 245 km

E. 260 km

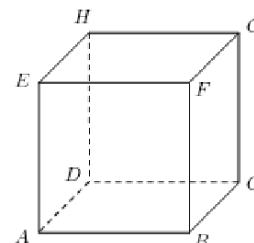
53. Sebelum kenaikan BBM, pengeluaran bensin adalah 10% dari pendapatan. Apabila harga BBM naik 30% sedangkan pendapatan tetap, maka pengeluaran bensin akan bertambah sebesar... dari pendapatan.

- A. 40%
- B. 30%
- C. 13%
- D. 19%
- E. 3%

54. Bentuk sederhana dari $\frac{2y-2y^2}{y^3-2y^2+y}$ adalah...

- A. $\frac{2}{y-1}$
- B. $\frac{2}{1-y}$
- C. 2y
- D. - 2y
- E. $\frac{1}{2y}$

55. Kubus ABCD. EFGH memiliki panjang rusuk 4 cm. separuh dari luas bidang diagonal ABGh adalah...



- A. 32 cm^2
- B. $8 \sqrt{32} \text{ cm}^2$
- C. $2 \sqrt{32} \text{ cm}^2$

- D. 6 cm^2
E. $4 \sqrt{32} \text{ cm}^2$

56. Diketahui $x < y < z$ dan merupakan bilangan-bilangan negative, pernyataan yang salah...

- A. $\frac{x}{z} > \frac{y}{z}$
B. $yz < xz$
C. $x - z < y - z$
D. $x + z < y + z$
E. $\frac{1}{x} < \frac{1}{y} < \frac{1}{z}$

57. Yuni mendeposisikan sejumlah uang di sebuah Bank. Setiap tahun nilai uang yang didepositokan akan bertambah 20% dari nilai uang pada tahun sebelumnya. Jika pada tahun ke-3 diketahui nilai depositnya adalah Rp172.280.000,00, maka 20% dari nilai uang yang didepositokan pada awal tahun adalah...

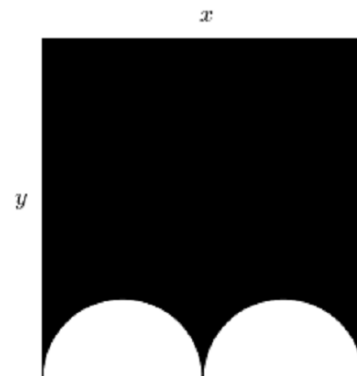
- A. Rp10.000.000,00
B. Rp7.500.000,00
C. Rp5.000.000,00
D. Rp2.500.000,00
E. Rp2.000.000,00

58. Jika diketahui $A = \{1, 2, 3, \dots, 10\}$, $B = \{1, 3, 5, 7, 9\}$, dan $C = \{x \mid x \text{ adalah bilangan prima yang lebih kecil dari } 10\}$, maka $A \cap B \cap C$ adalah...

- A. $\{1, 3, 5, 7\}$
B. $\{3, 5, 7\}$

- C. $\{3, 9\}$
D. $\{1, 9\}$
E. $\{9\}$

59. Jika sekeliling daerah yang diarsir adalah 50 satuan luas, maka luas maksimum dari daerah tersebut akan dicapai pada saat nilai x adalah...



- A. $\frac{200}{5+4\pi}$
B. $\frac{200}{2+3\pi}$
C. $\frac{200}{3+2\pi}$
D. $\frac{100}{3+2\pi}$
E. $\frac{100}{2+3\pi}$

60. Jika $\int_0^a \frac{1}{2} \sqrt[3]{x^2} dx = \frac{3}{10} \int_0^b (2x - 3) dx = 4$ dan $a > 0$, $b > 0$, maka nilai $a^2 + 2ab + b^2 =$

- A. 25
B. 24
C. 20
D. 30
E. 35

Soal Matematika USM STIS 2010

Waktu : 90 Menit

Petunjuk

- Di bawah setiap soal dicantumkan 5 kemungkinan jawaban masing masing diberi kode A, B, C, D atau E. Gunakan pensil 2B untuk menghitamkan lingkaran yang berisi kode jawaban yang saudara anggap benar pada lembar jawaban computer (LJK)
- Nilai Jawaban tiap soal adalah :
2 untuk jawaban benar
0 untuk tidak ada jawaban
-1 untuk jawaban salah
- Mengganti jawaban dilakukan dengan cara melingkari kode jawaban baru yang dipilih kemudian bubuhkan tanda silang di dalam lingkaran jawaban sebelumnya.
- Lembar jawaban tidak boleh kotor dan terlipat
- Hanya lembar jawaban yang dikumpulkan, sedangkan soal bisa dibawa pulang.

Selamat Mengerjakan

*Carilah ilmu dan berusahalah mengamalkannya
Dengan kesungguhan*

1. Nilai n yang memenuhi persamaan $\frac{(n-1)!}{(n+2)!} = \frac{3!(n-3)!}{(n+1)!}$ adalah

A. 6
B. 7
C. 8
D. 9
E. 10

2. Garis $ax - y = 3$ dan $x + 2y = b$ berpotongan di $(2,1)$ jika

A. $a = 2$ dan $b = 4$
B. $a = -2$ dan $b = 4$
C. $a = 2$ dan $b = -4$
D. $a = \frac{1}{2}$ dan $b = -4$
E. $a = -\frac{1}{2}$ dan $b = -4$

3. Suatu tim bulu tangkis terdiri dari 10 orang putra dan 5 orang putri. Dari tim ini akan dibuat pasangan ganda, baik ganda putra, ganda putri maupun ganda campuran. Banyak pasangan ganda yang dapat dibuat campuran adalah

A. 45
B. 50
C. 55
D. 95
E. 105

4. Peserta ujian matematika terdiri atas 40 orang siswa kelas A, 30 orang siswa kelas B dan 30 orang siswa kelas C. Jika nilai rata – rata keseluruhan siswa adalah 7,2

dan nilai rata – rata siswa kelas B dan C masing – masing 7,0 maka nilai rata – rata siswa kelas A adalah

A. 7,6
B. 7,5
C. 7,4
D. 7,3
E. 7,2

5. Jika $f(x) = 2 - x$, $g(x) = x^2 + 1$ dan $h(x) = 3x$, maka $(h \circ g \circ f)(3)$ =

A. -80
B. -6
C. 6
D. 80
E. 81

6. Besar sudut antara $a = \begin{bmatrix} 3 \\ 4 \\ -5 \end{bmatrix}$

dan $b = \begin{bmatrix} 1 \\ -2 \\ 2 \end{bmatrix}$ adalah

A. 45°
B. 60°
C. 120°
D. 135°
E. 150°

7. Dalam sebuah kandang terdapat 50 ekor ayam terdiri dari 27 ekor ayam jantan dan 18 diantaranya adalah berwarna hitam. Jumlah seluruh ayam yang berwarna hitam adalah 35 ekor. Banyaknya ayam betina yang tidak berwarna hitam adalah.....

- A. 6 ekor
- B. 8 ekor
- C. 9 ekor
- D. 17 ekor
- E. 23 ekor

8. Dua buah $u = \begin{bmatrix} 1 \\ 7 \end{bmatrix}$ dan $v = \begin{bmatrix} 6 \\ -5 \end{bmatrix}$ dan, maka $|u - v|$ adalah

- A. $\sqrt{13}$
- B. $\sqrt{29}$
- C. $\sqrt{53}$
- D. $\sqrt{83}$
- E. $\sqrt{169}$

9. Diketahui fungsi kuadrat $y = px^2 - (9 + p)x + 6$ mempunyai sumbu simetri $x = 2$ maka nilai p yang memenuhi adalah

- A. -9
- B. -3
- C. $-9/5$
- D. 3
- E. 9

10. Diketahui $f(x) = ax^2 + bx + c$ dengan , $f(1) = 2$, , $f'(0) = 0$ dan , $f'(1) = 2$. Fungsi tersebut adalah

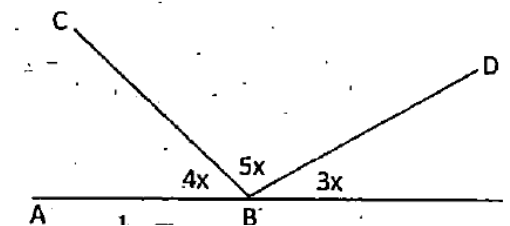
- A. $x^2 + 1$
- B. $x^2 - 1$
- C. $x^2 - 2x - 3$
- D. $\frac{1}{2}(x^2 + x - \frac{1}{2})$
- E. $x^2 + x - 2$

11. Diketahui x yang memenuhi persamaan $\left(\frac{1}{4}\right)^{x-1} = \sqrt[3]{2^{3x+1}}$ adalah

- A. $x = 2/9$
- B. $x = 4/9$
- C. $x = 5/9$
- D. $x = 2/5$
- E. $x = 4/5$

12. Diketahui

$\angle ABC = 4x$, $\angle EBD = 3x$,
 $\angle CBD = 5x$, maka nilai $\cos \angle ABC$ adalah



- A. $-\frac{1}{2}\sqrt{3}$
- B. $-\frac{1}{2}$
- C. 0
- D. 1
- E. $-\frac{1}{2}\sqrt{2}$

13. Jika $f(x) = 2x^4 - 4x^2 + 8$ maka $\lim_{h \rightarrow 0} \frac{1}{h}(f(x+h) - f(x)) = \dots$

- A. $8x^3 - 8$
- B. $2x^3 - 2x$
- C. $2x^3 - 4x$
- D. $3x^2 - x$
- E. $3x^2 + 2$

14. Jika akar – akar persamaan kuadrat $x^2 + px + q = 0$ adalah -2 dan 3, maka $q - p = \dots$

- A. -7
- B. -6
- C. -5

- D. 5
E. 6
15. Gradien garis singgung kurva $f(x) = 3 \sin 2x - 2 \cos x$ di $x = \frac{\pi}{4}$ adalah

A. $-\sqrt{2}$
B. $\sqrt{2}$
C. $6 - \sqrt{2}$
D. $6 + \sqrt{2}$
E. $\frac{3+2\sqrt{2}}{2}$

16. Rata – rata nilai matematika suatu kelas yang terdiri atas 40 orang adalah 61. Bila nilai Maira (salah satu anggota kelas tersebut) dikeluarkan dari perhitungan, maka nilai rata – rata kelas menjadi 60. Nilai matematika Maira adalah

A. 100
B. 90
C. 80
D. 60
E. 40

17. Pada liburan yang akan datang Lia ingin pulang kampung dari Jakarta ke Kuningan melalui Cirebon. Untuk rute Jakarta – Cirebon terdapat 5 perusahaan otobus (PO) yang dapat dipilih dari 3 PO yang melalui rute Cirebon – Kuningan. Jika Lia tidak ingin menggunakan PO yang sama pada setiap rute, maka banyaknya pilihan untuk pulang ke Kuningan lalu

kembali lagi ke Jakarta adalah

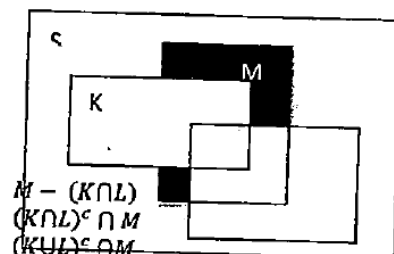
A. 15
B. 23
C. 30
D. 120
E. 225

18. Dari 42 mahasiswa yang menyukai seni, diketahui 18 siswa gemar seni tari, 15 siswa gemar seni music, 18 siswa gemar seni lukis, 7 siswa gemar tari dan seni music, 4 siswa gemar seni music dan seni lukis, 8 siswa gemar seni tari dan seni lukis, dan 3 siswa gemar ketiganya. Banyaknya siswa yang hanya gemar seni music dan seni tari saja adalah

A. 1 orang
B. 4 orang
C. 5 orang
D. 6 orang
E. 7 orang

19. Daerah yang diarsir dari diagram Venn berikut dapat dinyatakan sebagai

A. $M - (K \cap L)$
B. $(K \cap L)^c \cap M$
C. $(K \cup L)^c \cap M$
D. $(K \cup L)^c \cup M$
E. $(K \cup M)^c - L$



20. Banyaknya bilangan antara 2000 dan 6000 yang dapat disusun dari angka 0, 1, 2, 3, 4, 5, 6, 7 dan tidak ada angka yang sama adalah

- A. 2016
- B. 1344
- C. 1260
- D. 840
- E. 630

21. Diketahui matriks $A = \begin{bmatrix} 1 & 2 \\ 4 & 3 \end{bmatrix}$ dan $I = \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$. Bilangan x yang memenuhi persamaan $|A - xI| = 0$ adalah

- A. -1 atau 0
- B. 5 atau 0
- C. 1 atau 5
- D. -1 atau 5
- E. 1 atau -5

22. Nilai $\lim_{x \rightarrow 0} \frac{2\sin \frac{2x}{2}}{x \sin x} = \dots\dots$

- A. 0
- B. $\frac{1}{2}$
- C. 1
- D. 2
- E. 4

23. $\lim_{x \rightarrow \infty} (x - \sqrt{x^2 - 2x}) = \dots\dots$

- A. 0
- B. $\frac{1}{2}$
- C. 1
- D. 2
- E. ∞

24. Diberikan suku banyak $f(x) = x^3 + 3x^2 + a$. Jika

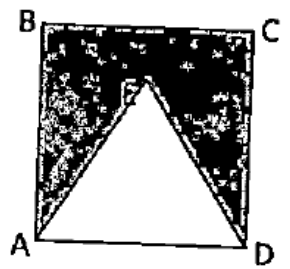
$f(1)$, $f'(1)$, $f''(1)$ membentuk barisan aritmatika. Maka $f(1) + f'(1) + f''(1) = \dots\dots$

- A. 6
- B. 9
- C. 12
- D. 21
- E. 27

25. Nilai $\lim_{x \rightarrow \infty} \frac{3^x - 3^{-x}}{3^x + 3^{-x}} = \dots\dots$

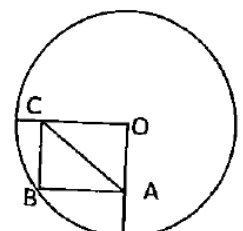
- A. $+\infty$
- B. 1
- C. 0
- D. -1
- E. $-\infty$

26. Pada gambar berikut, ABCD merupakan bujursangkar dan AED merupakan segitiga sama sisi. Jika $AB=2$, maka luas daerah yang diarsir adalah



- A. $\sqrt{3}$
- B. 2
- C. 3
- D. $4 - 2\sqrt{3}$
- E. $4 - \sqrt{3}$

27. Pada gambar berikut, jika jari - jari lingkaran yang berpusat di O adalah 10, maka panjang diagonal AC pada persegi panjang AOBC adalah



- A. $\sqrt{2}$
- B. $\sqrt{10}$
- C. $5\sqrt{2}$
- D. 10

E. $10\sqrt{2}$

28. Tempat kedudukan titik (x,y) yang berjarak 6 satuan dari titik (-4,3) adalah

A. $x^2 + y^2 + 8x - 6y - 11 = 0$

B. $x^2 + y^2 - 8x + 6y + 11 = 0$

C. $x^2 + y^2 + 8x + 6y - 11 = 0$

D. $x^2 + y^2 - 8x + 6y - 11 = 0$

E. $x^2 + y^2 + 8x - 6y + 11 = 0$

29. Pada suatu hari di STIS, $\frac{1}{12}$ mahasiswa tidak masuk (absen), dan $\frac{1}{5}$ dari mahasiswa yang masuk melakukan kuliah di laboratorium computer. Jika jumlah mahasiswa STIS yang melakukan kuliah di kelas regular ada sebanyak 1012, maka jumlah mahasiswa STIS adalah

A. 840

B. 960

C. 1380

D. 1600

E. 3520

30. Delapan orang anak dibagi ke dalam dua kelompok sama banyak, selanjutnya ditimbang berat badannya. Rata – rata berat badan anak dalam kelompok pertama 30kg dan kelompok kedua 33kg. Seorang anak dari

masing – masing kelompok ditukar sehingga rata – rata berat badan dalam setiap kelompok menjadi sama. Selisih berat badan kedua anak yang ditukar itu adalah

A. 1,5 kg

B. 3 kg

C. 4 kg

D. 6 kg

E. 8 kg

31. Suatu keluarga mempunyai 5 orang anak. Anak termuda berumur setengah dari anak tertua, sedang 3 anak lainnya berturut – turut berumur lebih 2 tahun dari yang termuda, lebih 4 tahun dari yang termuda, dan kurang 3 tahun dari yang tertua. Bila rata – rata hitung umur mereka adalah 16 tahun, maka umur anak yang ketiga adalah

A. 11 tahun

B. 13 tahun

C. 15 tahun

D. 19 tahun

E. 22 tahun

32.

Nilai ujian	Frekuensi
3	3
4	5
5	12
6	17
7	14
8	6
9	3

Seorang siswa dinyatakan lulus jika nilai ujiannya lebih tinggi dari rata – rata dikurangi 1 dari tabel diatas jumlah yang lulus adalah

- A. 52
- B. 40
- C. 38
- D. 30
- E. 20

33. Jumlah dua bilangan riil adalah 4 dan selisih kuadrat dari kedua bilangan tersebut adalah 12. Persamaan kuadrat yang akar – akarnya kedua bilangan tersebut adalah

- A. $x^2 - 4x + 7 = 0$
- B. $x^2 - 4x - 7 = 0$
- C. $2x^2 - 8x + 7 = 0$
- D. $4x^2 - 16x + 7 = 0$
- E. $4x^2 - 16x - 7 = 0$

34. Jika fungsi kuadrat $ax^2 + 4x + 3a$ mempunyai nilai maksimum 11, maka $a^2 - a = \dots$

- A. $-4/9$
- B. $1/3$
- C. $4/9$
- D. 12
- E. 20

35. Himpunan jawab persamaan $3^{2x+2} + 8 \cdot 3^x - 1 = 0$ adalah

- A. $\{1/9\}$

- B. $\{1/2, 1/3\}$
- C. $\{-2, 1/3\}$
- D. $\{-2\}$
- E. $\{-2, -1/3\}$

36. Jika garis $4x+2y=5$ tegak lurus pada garis $mx+(2m-1)y=9$, maka nilai m adalah.....

- A. -4
- B. $-1/4$
- C. $1/4$
- D. 4
- E. 0

37. Jika $f(x) = \frac{1}{x}$ dan $(x) = 2x-1$, maka $(f \circ g)^{-1}(x) = \dots$

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

38. Jika $f(x) = \sqrt{x^2+1}$ dan $(f \circ g)(x) = \frac{1}{x-2} \sqrt{x^2-4x+5}$ maka $g(x-3) = \dots$

- A. $\frac{1}{x-5}$
- B. $\frac{1}{x-2}$
- C. $\frac{1}{x-1}$
- D. $\frac{1}{x-3}$
- E. $\frac{1}{x+3}$

39. Keliling sebuah persegi panjang adalah 12 m dan luasnya kurang dari 8 m^2 . Jika panjang salah satu sisinya a meter, maka

- A. $a < 2$ atau $a > 4$
- B. $0 < a < 2$ atau $a > 4$
- C. $0 < a < 2$ atau $4 < a < 6$
- D. $2 < a < 4$
- E. $0 < a < 4$

40. Jika $\sqrt{x^2 - 4x + 4} - |2x + 3| \geq 0$ maka

- A. $-3 \leq x \leq \frac{-1}{5}$
- B. $-5 \leq x \leq \frac{-1}{3}$
- C. $x \geq 5$
- D. $x \leq 5$ atau $x \geq \frac{-1}{3}$
- E. $x \leq -3$ atau $x \geq \frac{-1}{5}$

41. Apabila $\log 2 + \log(x + 1) > \log(x - 3)$, maka nilai x yang memenuhi adalah

- A. $x > -5$
- B. $-5 < x < -1$
- C. $x > -1$
- D. $x > 3$
- E. $-5 < x < 3$

42. Jika $\int_0^a \frac{1}{2} \sqrt{x^3} dx = \frac{1}{5}$, $\int_0^b (1 - 2x) dx = -2$ dan $a > 0$, $b > 0$ maka nilai $a^2 + 2ab + b^2$ adalah

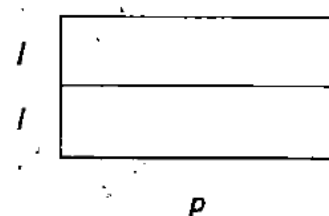
- A. 1
- B. 2
- C. 9
- D. 3
- E. 5

43. Nilai integral berikut $\frac{\int_0^2 x dx \int_0^2 x^2 dx}{\int_0^2 x^3 dx}$ adalah

- A. $\frac{1}{\int_0^2 x^2 dx \int_0^2 x dx}$
- B. $\int_0^2 \frac{1}{x^2} dx \int_0^2 \frac{1}{x} dx$
- C. $\int_0^2 dx$
- D. $\frac{4}{3}$
- E. 1

44. Kawat sepanjang 240 m akan dibuat kerangka seperti gambar. Agar luasnya maksimum, panjang kerangka (p) tersebut adalah

- A. 20
- B. 25
- C. 30
- D. 35
- E. 40



45. Diketahui kran A mengucurkan air 4 lt/menit, sedangkan kran B mengucurkan air 8 lt/menit. Bila drum berkapasitas 240 lt, akan diisi oleh kedua kran secara bersama – sama, maka waktu yang diperlukan adalah menit.

- A. 20
- B. 25
- C. 30
- D. 35
- E. 40

46. Dari bentuk – bentuk dibawah ini, maka yang salah adalah

- A. $(\sin A + \cos A)^2 - 2 \sin A \cos A = 1$

- B. $\sin^2(90^\circ - B) + \cos^2(90^\circ - B) = 1$
 C. $\sin B \sec B \cot B = 1$
 D. $\tan^2 A + \sec^2 A = 1$
 E. $(1 - \sin^2 A)(1 + \tan^2 A) = 1$

47. Suku berikutnya dari barisan c, a, b, d, c, d, f, e, f,.... adalah

- A. i
 B. h
 C. g
 D. f
 E. e

48. Misal X dan Y adalah matriks berordo 2×2 dan $(XY)^T = \begin{bmatrix} 3 & 1 \\ 0 & 6 \end{bmatrix}$, maka X^{-1} adalah

- A. $Y \begin{bmatrix} \frac{1}{3} & 0 \\ -\frac{1}{18} & \frac{1}{6} \end{bmatrix}$
 B. $\begin{bmatrix} \frac{1}{3} & 0 \\ \frac{1}{18} & \frac{1}{6} \end{bmatrix} Y$
 C. $Y^T \begin{bmatrix} \frac{1}{3} & 0 \\ -\frac{1}{18} & \frac{1}{6} \end{bmatrix}$
 D. $\begin{bmatrix} \frac{1}{3} & -\frac{1}{18} \\ 0 & \frac{1}{6} \end{bmatrix} Y^T$
 E. $Y^T \begin{bmatrix} \frac{1}{3} & -\frac{1}{18} \\ 0 & \frac{1}{6} \end{bmatrix}$

49. Pada kubus ABCD.EFGH dengan panjang rusuk s satuan, terdapat bola luar dan bola dalam. Perbandingan volume bola luar dan bola dalam adalah

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

50. Enam tahun yang lalu jumlah umur ayah dan ibu adalah sebelas kali selisihnya. Sekarang umur ayah adalah tujuh perenam dari umur ibu. Lima tahun yang akan datang, umur ayah dan umur ibu masing – masing

- A. 48 tahun dan 42 tahun
 B. 48 tahun dan 41 tahun
 C. 47 tahun dan 42 tahun
 D. 47 tahun dan 41 tahun
 E. 42 tahun dan 36 tahun

51. Suatu survey dilakukan untuk menyelidiki sikap terhadap rencana pemerintah untuk memberlakukan UU ITE. Survey tersebut dilakukan di daerah perkotaan dan pedesaan, karena kedua daerah tersebut memberikan data yang berbeda. Tanggapan dikelompokkan menjadi setuju, menentang, atau tidak tahu. Dari total 250 responden, diperoleh hasil bahwa 100 responden dari perkotaan menyatakan setuju dan 15 responden menyatakan tidak tahu. Dari 105 responden dari pedesaan, 50 responden

diantaranya menyatakan menentang dan 5 diantaranya tidak tahu. Jika seorang diambil secara acak untuk dimintai keterangan lebih lanjut, peluang bahwa ia tinggal di perkotaan dan menentang pemberlakuan UU ITE adalah

- A. 0,02
- B. 0,06
- C. 0,12
- D. 0,2
- E. 0,32

52. Jika α dan β akar – akar persamaan kuadrat $x^2 - 5x + (k + 3) = 0$ dan $\alpha^3 + \beta^3 = 35$, maka nilai k =

- A. -15
- B. -13
- C. -3
- D. 3
- E. 15

53. Nilai dari $\tan (165^\circ)$ adalah

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

54. Diketahui jumlah suku – suku suatu deret memenuhi $2^2, 2^4, 2^6, \dots, 2^{20} = 2^{3x-10}$, maka nilai x yang memenuhi adalah

- A. 75,33

- B. 50
- C. 40
- D. 33,33
- E. 21,67

55. Nilai dari $m^{\frac{7x^{-\frac{2}{3}}\sqrt{y^5}}{\left(x^{\frac{5}{4}}-6y^{\frac{-1}{3}}\right)x^{-2}}}$ untuk $x = 4$ dan $y = 27$ adalah

- A. $(1 + 2\sqrt{2})9\sqrt{2}$
- B. $(1 + 2\sqrt{2})9\sqrt{3}$
- C. $(1 + 2\sqrt{2})18\sqrt{3}$
- D. $(1 + 2\sqrt{2})27\sqrt{2}$
- E. $(1 + 2\sqrt{2})27\sqrt{3}$

56. Luas daerah D yang dibatasi oleh parabola $y = x^2$ di kuadran I, garis $x+y=2$, dan garis $y = 4$ adalah satuan luas.

- A. $\frac{11}{6}$
- B. $\frac{25}{6}$
- C. 5
- D. $6\frac{1}{6}$
- E. $7\frac{1}{2}$

57. Volume benda putar yang terjadi bila daerah kuadran I yang dibatasi oleh kurva $y = 1 - \frac{x^2}{4}$, sumbu x, sumbu y diputar mengelilingi sumbu x adalah satuan volume.

- A. $\frac{52}{16}\pi$
- B. $\frac{16}{12}\pi$
- C. $\frac{16}{15}\pi$
- D. π
- E. $\frac{12}{15}\pi$

58. Diketahui $f(x) = \int x^2 e^{-2x} dx$. Jika $f(0) = \frac{3}{4}$ maka

- A. $f(x) = -\frac{x^2}{2} e^{-2x} - \frac{x}{2} e^{-2x} - \frac{1}{4} e^{-2x} + 1$
- B. $f(x) = -\frac{x^2}{2} e^{-2x} - \frac{x}{2} e^{-2x} - \frac{1}{4} e^{-2x} - 1$
- C. $f(x) = \frac{x^2}{2} e^{-2x} - \frac{x}{2} e^{-2x} - \frac{1}{4} e^{-2x} + 1$
- D. $f(x) = -\frac{x^2}{2} e^{-2x} - \frac{x}{2} e^{-2x} + \frac{1}{4} e^{-2x} - 1$

59. Hasil dari $\int \frac{dx}{e^x + 1}$ adalah

- A. $\ln|e^x + 1| + c$
- B. $\ln|e^{-x} + 1| + c$
- C. $-\ln|e^x - 1| + c$
- D. $-\ln|e^x + 1| + c$
- E. $\ln|e^{-x} - 1| + c$

60. Nilai x yang memenuhi persamaan $1 + \log_2 x = \log_2 \log_2 3 + 2x + 1$ adalah

- A. $\log_2 3$
- B. $\log_3 2$
- C. -1 atau 3
- D. 8 atau $\frac{1}{2}$
- E. $\log \frac{2}{3}$

fisher education

Soal Matematika USM STIS 2011

Waktu : 90 Menit

Petunjuk

- Di bawah setiap soal dicantumkan 5 kemungkinan jawaban masing masing diberi kode A, B, C, D atau E. Gunakan pensil 2B untuk menghitamkan lingkaran yang berisi kode jawaban yang saudara anggap benar pada lembar jawaban computer (LJK)
- Nilai Jawaban tiap soal adalah :
2 untuk jawaban benar
0 untuk tidak ada jawaban
-1 untuk jawaban salah
- Mengganti jawaban dilakukan dengan cara melingkari kode jawaban baru yang dipilih kemudian bubuhkan tanda silang di dalam lingkaran jawaban sebelumnya.
- Lembar jawaban tidak boleh kotor dan terlipat
- Hanya lembar jawaban yang dikumpulkan, sedangkan soal bisa dibawa pulang.

Selamat Mengerjakan

*Kebingungan adalah pintu ilmu pengetahuan,
Maka bertanya adalah kuncinya*

1. Penyederhanaan dari bentuk $\frac{2}{\sqrt{3}-\sqrt{2}} - \frac{1}{2-\sqrt{3}} - \frac{5}{\sqrt{8}-\sqrt{3}} = \dots$
 - A. -10
 - B. -5
 - C. -2
 - D. 2
 - E. 10
2. Nilai dari $\frac{\sqrt{45}+\sqrt{8}}{\sqrt{7+2\sqrt{10}}}$ adalah ...
 - A. 3
 - B. 6
 - C. 9
 - D. $3\sqrt{2}$
 - E. $2\sqrt{3}$
3. Negasi dari "Untuk semua nilai x riil dengan $0 < a < 1$, maka $a^x > 0$ adalah ...
 - A. Ada beberapa nilai x riil dengan $0 < a < 1$, berlaku $a^x > 0$
 - B. Tidak ada nilai x riil dengan $0 < a < 1$, berlaku $a^x > 0$
 - C. Ada beberapa nilai x riil dengan $0 < a < 1$, berlaku $a^x < 0$
 - D. Tidak ada nilai x riil dengan $0 < a < 1$, berlaku $a^x < 0$
 - E. Ada beberapa nilai x riil dengan $a < 0$ atau $a > 1$, berlaku $a^x < 0$
4. Matematikawan August de Morgan menghabiskan usianya pada tahun 1800-an. Pada tahun terakhir dalam masa hidupnya dia menyatakan bahwa: "Dulu aku berusia x tahun pada tahun x pada tahun x^2 . Pada tahun berapakah ia dilahirkan...
 - A. 1806
 - B. 1822
 - C. 1849
 - D. 1851
 - E. 1853
5. Jika jumlah kuadrat akar-akar persamaan $x^2 - 3x + n = 0$ sama dengan jumlah pangkat tiga akar-akar persamaan $x^2 + x - n = 0$, maka nilai n adalah...
 - A. 10
 - B. 2
 - C. -2
 - D. -8
 - E. -10
6. Jika x_1 dan x_2 adalah akar-akar persamaan $x^2 + px + q = 0$, maka $x_1^4 + x_2^4 = \dots$
 - A. $p^4 - 4p^2q + 2q^2$
 - B. $p^4 - 2q^2$
 - C. $p^4 - p^2q + q^2$
 - D. $p^4 + p^2q + q^2$
 - E. $p^4 + 2q$
7. Dari fungsi kuadrat $y = f(x)$ diketahui fungsi $y = f(x + a)$ mencapai nilai maksimum untuk $x = p$. Dapat ditarik kesimpulan bahwa fungsi $y = f(x - a)$ mencapai titik maksimum untuk ...
 - A. $x = p - a$
 - B. $x = p + a$
 - C. $x = p - 2a$
 - D. $x = p + 2a$
 - E. $x = 2a - p$
8. Titik potong parabola $y = mx^2 + x + m$, $m \neq 0$ dengan garis $y = (m + 1)x + 1$ adalah (x_1, y_1)

dan (x_2, y_2) . Jika $x_1^2 + x_2^2 = 1$, maka nilai m adalah...

- A. -2
- B. -1
- C. 0
- D. 1
- E. 2

9. Himpunan penyelesaian dari $\left| \frac{1}{4}x^2 - 10 \right| < 6$ adalah...

- A. $-8 < x < 8$
- B. $x < -4$ atau $x > 4$
- C. $-4 < x < 4$ atau $x < -8$ atau $x > 8$
- D. $-4 < x < 4$
- E. $-8 < x < -4$ atau $4 < x < 8$

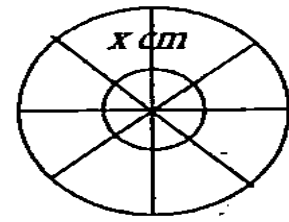
10. Jika a, b, c dan d adalah bilangan riil positif dengan $a > b$ dan $c > d$, maka pernyataan ini benar, kecuali...

- A. $ac > bd$
- B. $a + c > b + d$
- C. $ad > bc$
- D. $ac + bd > ad + bc$
- E. $\frac{1}{ac} < \frac{1}{bd}$

11. Jendela berbentuk lingkaran seperti yang ditunjukkan pada gambar dibawah ini memiliki sembilan kaca jendela dengan luas yang sama. Kaca jendela berbentuk lingkaran dibagian dalam memiliki jari-jari 20 cm. Delapan garis yang memisahkan kaca jendela luar memiliki panjang yang sama, x cm. Nilai x adalah...

- A. 40,0

- B. 36,6
- C. 30,0
- D. 20,0
- E. 43,2



12. Pada kubus ABCD.EFGH, terdapat bola luar dinyatakan B_1 dan bola dalam dinyatakan B_2 . Perbandingan volume bola B_1 dan B_2 adalah...

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

13. Jika $\lim_{x \rightarrow 0} \frac{a^4 \sin^4 x}{\sin^6 x} = 1$, maka nilai a yang memenuhi adalah...

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

14. Nilai dari $\lim_{x \rightarrow \infty} \frac{(1-2x)^3}{(x-1)(2x^2+x+1)}$ adalah...

- A. -8
- B. -4
- C. -1
- D. 4
- E. 8

15. Nilai dari $\lim_{x \rightarrow \frac{\pi}{4}} \frac{1-2 \sin x \cos x}{\sin x - \cos x}$ adalah...

- A. $\frac{1}{2}$
- B. $\frac{1}{2}\sqrt{2}$

- C. 1
D. 0
E. 1
16. Luas sebuah lingkaran adalah fungsi dari kelilingnya. Jika keliling sebuah lingkaran adalah x , maka laju pertumbuhan luas lingkaran terhadap kelilingnya adalah...
- A. πx
B. $2\pi x$
C. $\frac{x}{2\pi}$
D. $\frac{x}{\pi}$
E. $\frac{x^2}{4\pi}$
17. Jika $x = a \tan x + bx$, $f'\left(\frac{\pi}{3}\right) = 9$, maka $a + b = \dots$
- A. 0
B. 2
C. $\frac{24}{5}$
D. 6
E. $\frac{39}{5}$
18. Proyek pembangunan gedung STIS dapat diselesaikan dalam x hari, dengan menghabiskan biaya proyek per hari sebesar $\left(3x - 900 + \frac{200}{x}\right)$ ratus ribu rupiah. Agar biaya proyek pembangunan gedung STIS ini minimum, maka proyek tersebut diselesaikan dalam waktu ...
- A. 40 hari
B. 60 hari
C. 90 hari
D. 120 hari
E. 150 hari
19. Jika fungsi $f(x) = x^3 + 3x^2 - 9x$ dalam interval $-4 \leq x \leq -1$ mempunyai nilai maksimum a dan minimum b , maka $a + b = \dots$
- A. 38
B. 35
C. 27
D. 22
E. 20
20. Daerah yang dibatasi oleh kurva $y = x^3$, garis $x = 1$ dan sumbu x diputar mengelilingi sumbu y . Volume benda putar yang terbentuk adalah ... satuan volume.
- A. $\frac{1}{4}\pi$
B. $\frac{2}{5}\pi$
C. $\frac{3}{5}\pi$
D. $\frac{2}{3}\pi$
E. $\frac{3}{2}\pi$
21. Nilai a yang memenuhi $\int_a^1 12x(x^2 + 1)^2 dx = 14$ adalah...
- A. -2
B. -1
C. 0
D. $\frac{1}{2}$
E. 1
22. $\int_{-3}^3 |x^2 - 2x - 3| dx = \dots$
- A. 0
B. 18
C. $\frac{68}{3}$
D. $\frac{64}{3}$
E. 9

23. Jika luas daerah yang dibatasi oleh kurva $y = \sqrt{px}$ dan garis $y = x$ adalah $\frac{2}{3}$, maka nilai p yang memenuhi adalah...

- A. $\frac{1}{3}\sqrt{6}$
- B. 2
- C. $\frac{5}{2}$
- D. 2 atau - 2
- E. $\frac{5}{2}$ atau $-\frac{5}{2}$

24. $5 \log 3 + {}^5 \log 9 + {}^5 \log 27 + {}^5 \log 81 + \dots$ membentuk...

- A. Deret aritmatika dengan beda
- B. Deret geometri dengan rasio
- C. Deret aritmatika dengan beda 3
- D. Deret geometri dengan rasio 3
- E. Bukan deret aritmatika maupun deret geometri

25. Semua bilangan ganjil positif dikelompokkan seperti berikut ini : (1), (3,5), (7,9,11), (13,15,17,19), ... bilangan yang terletak diawal kelompok ke-25 adalah...

- A. 553
- B. 575
- C. 599
- D. 601
- E. 625

26. Nilai $26^2 - 25^2 + 24^2 - 23^2 + \dots + 4^2 - 3^2 + 2^2 - 1 = \dots$

- A. 351
- B. 371
- C. 431
- D. 451
- E. 472

27. Jika $\log x = 6$ dan $\log y = 12$, maka nilai

$$\sqrt{\log x} \sqrt{x} \sqrt{y} \sqrt{x} \sqrt{y} \sqrt{x} \sqrt{y} \dots \text{ adalah } \dots$$

- A. 2
- B. 4
- C. 8
- D. $\sqrt{2}$
- E. $2\sqrt{2}$

28. Bilangan bulat terbesar n yang memenuhi $3(n^{2011}) < 3^{4023}$ adalah...

- A. 2
- B. 3
- C. 6
- D. 8
- E. 9

29. Jika a^{-1} menyatakan bilangan $\frac{1}{a}$ untuk setiap bilangan real yang tidak sama dengan nol. Dan jika x, y dan $2x + \frac{y}{2}$ tidak sama dengan nol, maka bentuk sederhana dari $\left(2x + \frac{y}{2}\right)^{-1} \left((2x)^{-1} + \left(\frac{y}{2}\right)^{-1}\right)$ adalah...

- A. 1
- B. xy^{-1}
- C. $x^{-1}y$
- D. $(xy)^{-1}$
- E. $\left(2x + \frac{y}{2}\right)^{-2}$

30. Diketahui a dan b adalah akar-akar persamaan dari $8 \cdot 2^x = (2x - x^2)^{x+3}$. Nilai dari $\left(\frac{1}{a^2} + \frac{1}{b^2}\right)$ adalah...

- A. $\sqrt{2}$
- B. 0
- C. 2
- D. 1
- E. $\frac{1}{2}$

31. Jika persamaan garis singgung kurva $y = ax^2 - bx + 3$ pada titik $(1,1)$ tegak lurus garis $6y - x + 7 = 0$. Maka $a^2 + b^2 = \dots$

- A. 8
- B. 10
- C. 13
- D. 20
- E. 52

32. Dalam pertandingan lari estafet, Upin berlari dalam putaran pertama selama 72 detik. Ipin berlari dalam putaran berikutnya dengan kecepatan $\frac{9}{10}$ dari kecepatan Upin. Jarjit berlari pada putaran berikutnya dengan kecepatan $\frac{4}{3}$ dari kecepatan Ipin. Mail berlari pada putaran terakhir dengan kecepatan $\frac{6}{5}$ dari kecepatan Jarjit. Total waktu untuk menyelesaikan pertandingan lari estafet tersebut adalah...

- A. 4 menit 48 detik
- B. 4 menit 22 detik
- C. 5 menit 27 detik
- D. 4 menit 37 detik
- E. 3 menit 46 detik

33. Hasil bagi dan sisa suku banyak $3x^2 + 10x^2 - 8x + 3$ dibagi $x^2 + 3x - 1$ berturut-turut adalah...

- A. $3x + 1$ dan $2x + 2$
- B. $3x + 1$ dan $-8x + 4$
- C. $3x - 1$ dan $8x - 2$
- D. $3x + 19$ dan $-56x + 21$
- E. $3x + 19$ dan $51x + 16$

34. Jika $f(x) = ax^3 + 3bx^2 + (2a - b)x + 4$ dibagi $(x - 1)$ sisanya 10, sementara jika dibagi dengan $(x + 2)$ akan menghasilkan sisa 2. Nilai a dan b berturut-turut yang memenuhi adalah...

- A. $\frac{4}{3}$ dan 1
- B. $\frac{3}{4}$ dan 1
- C. 1 dan $\frac{4}{3}$
- D. 1 dan $\frac{3}{4}$
- E. $-\frac{4}{3}$ dan 1

35. Persamaan bayangan kurva $y = x^2 - 2x - 3$ oleh rotasi $[0, 180^\circ]$, kemudian dilanjutkan oleh pencerminan terhadap garis $y = -x$ adalah...

- A. $y = x^2 - 2x - 3$
- B. $x = y^2 - 2y - 3$
- C. $y = x^2 - 2x + 3$
- D. $x = y^2 - 2y + 3$
- E. $y = x^2 + 2x + 3$

36. Jika 10 siswa kelas A mempunyai nilai rata-rata 5,1 dan 15 siswa kelas B mempunyai nilai rata-rata 8,1 dan 25 siswa kelas C mempunyai nilai rata-rata 6,6. Ketiga kelas tersebut digabung, maka nilai rata-rata gabungan adalah...

- A. 6,50
- B. 6,55

- C. 6,60
D. 6,75
E. 6,80
37. Simpangan kuartil dari data : 6, 6, 8, 5, 9, 6, 7, 5, 5, 7, 9, 7, 8, 8 sama dengan...
- A. 3,5
B. 3,0
C. 2,5
D. 2,0
E. 1,5
38. Nilai rata-rata pengamatan dari sebuah data terurut membentuk pola: a , $a+b$, $3a+b$, dan seterusnya. Nilai pengamatan paling kecil = 1 dan yang paling besar = 20. Jika banyak pengamatan = 10, maka rata-ratanya...
- A. 10,5
B. 11,0
C. 11,5
D. 12,0
E. 12,5
39. Dari 5 buah bilangan, bilangan yang terkecil 40 dan terbesar 75. Jika mediannya 50, maka rata-rata ...
- A. $47 \leq \bar{x} < 63$
B. $47 \leq \bar{x} < 68$
C. $49 \leq \bar{x} < 63$
D. $51 \leq \bar{x} < 58$
E. $51 \leq \bar{x} < 68$
40. Nilai rata-rata ulangan kelas A adalah \bar{x}_A dan kelas B adalah \bar{x}_B . Setelah kedua kelas digabungkan, nilai rata-ratanya adalah \bar{x} . Jika \bar{x}_A :

$\bar{x}_B = 10 : 9$ dan $\bar{x} : \bar{x}_B = 85 : 81$, maka perbandingan banyaknya siswa di kelas A dan B adalah...

- A. 8 : 9
B. 9 : 8
C. 4 : 5
D. 5 : 4
E. 3 : 5

41. Daftar distribusi frekuensi pada tabel berikut merupakan hasil dari suatu tes.

Nilai	Frekuensi
11 - 20	3
21 - 30	7
31 - 40	10
41 - 50	16
51 - 60	20
61 - 70	14
71 - 80	10
81 - 90	6
91 - 100	4

Jika 60% siswa dinyatakan lulus, nilai terendah yang dinyatakan lulus adalah...

- A. 45,0
B. 48,5
C. 50,5
D. 51,0
E. 55,5
42. Dari huruf S, I, G, M, dan A dapat dibuat 120 "kata". Jika "kata" ini disusun secara alfabetikal, maka kata "SIGMA" akan berada pada urutan...

- A. 105
B. 106
C. 110
D. 111

E. 112

43. Banyaknya bilangan terdiri dari 3 angka berbeda dan habis dibagi 5 yang dapat disusun dari angka-angka 0, 1, 2, ..., 9 adalah...

A. 132
B. 136
C. 140
D. 142
E. 144

44. Sebuah kotak berisi buah apel dan pir. Banyaknya buah apel dan pir yang sudah membusuk adalah sama, yaitu $\frac{2}{3}$ dari semua buah apel dan $\frac{3}{4}$ dari semua buah pir. Perbandingan antara banyaknya buah-buahan yang sudah membusuk dalam kotak dengan jumlah seluruh buah dalam kotak adalah...

A. 17 : 24
B. 7 : 12
C. 5 : 8
D. 12 : 17
E. 5 : 7

45. Seorang siswa yang mengikuti ujian harus mengerjakan 7 dari 10 soal yang ada. Banyak cara siswa tersebut memilih soal yang akan dikerjakan...

A. 70
B. 120
C. 240
D. 360
E. 720

46. Nilai n yang memenuhi persamaan ${}_{3 \cdot n+1}C_3 = {}_{7 \cdot n}C_2$ adalah...

A. 2
B. 4
C. 6
D. 7
E. 8

47. Diketahui $f(x) = 2x - 1$ dan $g(x) = \frac{5x}{x+1}$. Jika h adalah fungsi sehingga $(g \circ h)(x) = x - 2$ maka $(h \circ f)(x) = \dots$

A. $\frac{2x-3}{2x+8}$
B. $\frac{2x-3}{-2x+6}$
C. $\frac{2x-3}{2x-8}$
D. $\frac{2x-3}{-2x+8}$
E. $\frac{2x-3}{-2x-8}$

48. Jika $f(x) = 3^{x-1}$ maka $f^{-1}(81) = \dots$

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

49. Selama hidupnya seperempat usia Sutisna dijalani sebagai anak, seperlinya sebagai pemuda, sepertingany sebagai orang dewasa dan 15 tahun 2 bulan sebagai kakek. Sutisna meninggal pada usia...

A. 55 tahun
B. 60 tahun
C. 70 tahun
D. 85 tahun
E. 90 tahun

50. Jumlah x dan y dari (x,y) yang memenuhi sistem persamaan

$$x - y = a$$

$$x^2 + 5x - y = 2$$

Adalah...

- A. -12
- B. -10
- C. -6
- D. 6
- E. 10

51. Sebelum ada kenaikan harga BBM, pengeluaran bensin Pak Budi adalah 10% dari pendapatan. Apabila harga BBM naik 30%, sedangkan semua pengeluaran lainnya dianggap tetap, maka pengeluaran bensin Pak Budi akan...

- A. Naik 30% dari pendapatan
- B. Naik 20% dari pendapatan
- C. Naik 13% dari pendapatan
- D. Naik 10% dari pendapatan
- E. Naik 3% dari pendapatan

52. Syarat agar dapat diterima di suatu perguruan tinggi adalah nilai tes matematika harus tidak kurang dari 7 dan tes bahasa Inggris tidak kurang dari 5, sedangkan jumlah nilai matematika dan bahasa Inggris tidak boleh kurang dari 13. Seorang siswa yang jumlah dua kali nilai matematika dan tiga kali nilai bahasa Inggrisnya sama dengan 30, maka siswa itu...

- A. Pasti ditolak
- B. Pasti diterima

- C. Diterima asal nilai matematika lebih dari 9

- D. Diterima asal nilai bahasa Inggris tidak kurang dari 5

- E. Diterima hanya nilai bahasa Inggris 6

53. Pesawat penumpang mempunyai tempat duduk 48 kursi. Setiap penumpang kelas utama boleh membawa bagasi 60 kg sedang kelas ekonomi 20 kg. Pesawat hanya dapat membawa bagasi 1440 kg. Harga tiket kelas utama Rp 150.000 dan kelas ekonomi Rp 100.000. Supaya pendapatan dari penjualan tiket pada saat pesawat penuh mencapai maksimum, jumlah tempat duduk kelas utama haruslah sebanyak...

- A. 12
- B. 20
- C. 24
- D. 26
- E. 30

54. Matriks B adalah invers matriks A, matriks D adalah invers matriks C dan $A.B.C = D$, maka yang merupakan matriks identitas (I) adalah...

- A. A^2
- B. B^2
- C. C^2
- D. D^2
- E. $A.C^2$

55. Jika

$$\begin{pmatrix} a-b & -b \\ 0 & 1 \end{pmatrix}^{-1} = \begin{pmatrix} -a & 1 \\ -a+2b & 1 \end{pmatrix}$$

maka $ab = \dots$

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

56. Jika M matriks berordo 2×2 sehingga $M \begin{pmatrix} 1 \\ -1 \end{pmatrix} = \begin{pmatrix} -1 \\ 5 \end{pmatrix}$ dan $M \begin{pmatrix} 2 \\ 1 \end{pmatrix} = \begin{pmatrix} 4 \\ 7 \end{pmatrix}$, maka $M^2 = \dots$

- A. $\begin{pmatrix} 1 & 2 \\ 4 & -1 \end{pmatrix}$
- B. $\begin{pmatrix} 9 & 0 \\ 0 & 9 \end{pmatrix}$
- C. $\begin{pmatrix} 9 & 0 \\ 0 & 7 \end{pmatrix}$
- D. $\begin{pmatrix} 7 & 0 \\ 0 & 9 \end{pmatrix}$
- E. $\begin{pmatrix} 7 & 0 \\ 0 & 7 \end{pmatrix}$

57. Diketahui matriks $A = \begin{pmatrix} 2 & 4 \\ 2b & 3c \end{pmatrix}$ dan $B = \begin{pmatrix} 2c - 3b & 2a + 1 \\ a & b + 7 \end{pmatrix}$. Jika B^T adalah transpose dari matriks B , maka nilai c yang memenuhi $A = 2B^T$ adalah...

- A. 2
- B. 3
- C. 5
- D. 8
- E. 10

58. Vektor \bar{w} merupakan vektor proyeksi tegak lurus vektor $(a, 1 - a, a)$ pada vektor $(-1, -1, 1)$. Jika panjang \bar{w} adalah

$\frac{2}{3}\sqrt{3}$, maka diantara nilai a berikut ini yang memenuhi adalah...

- A. -3
- B. -2
- C. 3
- D. 2
- E. 1

59. Vektor $\bar{x} = \begin{pmatrix} x_1 \\ x_2 \end{pmatrix}$ dapat diputar mengelilingi pusat koordinat O sejauh 90° dalam arah berlawanan dengan peraturan jarum jam. Hasilnya dicerminkan terhadap sumbu x , menghasilkan vektor $\bar{y} = \begin{pmatrix} y_1 \\ y_2 \end{pmatrix}$. Jika $\bar{x} = A\bar{y}$ maka...

- A. $\begin{pmatrix} 0 & 1 \\ 1 & 0 \end{pmatrix}$
- B. $\begin{pmatrix} 0 & -1 \\ -1 & 0 \end{pmatrix}$
- C. $\begin{pmatrix} 0 & -1 \\ 1 & 0 \end{pmatrix}$
- D. $\begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix}$
- E. $\begin{pmatrix} -1 & 0 \\ 0 & -1 \end{pmatrix}$

60. Diketahui A dan B adalah sudut lancip yang memenuhi $\tan(A + B) = 12$ dan $\tan A - B = 13$. Nilai $\tan A$ adalah...

- A. $\sqrt{2} + 1$
- B. $\sqrt{2} - 1$
- C. $-\sqrt{2} - 1$
- D. $\frac{1}{12}$

Soal Matematika USM STIS 2012

Waktu : 90 Menit

Petunjuk

- Di bawah setiap soal dicantumkan 5 kemungkinan jawaban masing masing diberi kode A, B, C, D atau E. Gunakan pensil 2B untuk menghitamkan lingkaran yang berisi kode jawaban yang saudara anggap benar pada lembar jawaban computer (LJK)
- Nilai Jawaban tiap soal adalah :
2 untuk jawaban benar
0 untuk tidak ada jawaban
-1 untuk jawaban salah
- Mengganti jawaban dilakukan dengan cara melingkari kode jawaban baru yang dipilih kemudian bubuhkan tanda silang di dalam lingkaran jawaban sebelumnya.
- Lembar jawaban tidak boleh kotor dan terlipat
- Hanya lembar jawaban yang dikumpulkan, sedangkan soal bisa dibawa pulang.

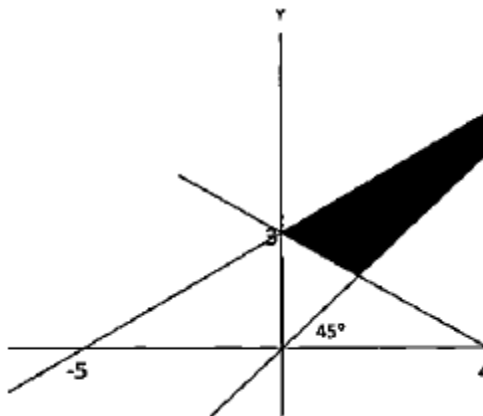
Selamat Mengerjakan

*Mencapai target dengan kejujuran
Adalah perilaku yang utama menuju kesuksesan*

1. Parabola $y = x^2 - 6x + 8$ digeser ke kanan sejauh a satuan searah dengan sumbu x dan digeser ke bawah sejauh $6a$ satuan. Jika parabola hasil pergeseran ini memotong di sumbu x di x_1 dan x_2 maka $\frac{1}{2}(x_1^2 + x_2^2)$ adalah...

- A. $a^2 - 12a + 10$
 B. $a^2 + 12a - 10$
 C. $a^2 + 12a + 10$
 D. $-a^2 + 12a + 10$
 E. $-a^2 - 12a - 10$

2. Jika daerah yang digelapkan pada diagram ini merupakan daerah penyelesaian untuk program linier dengan fungsi sasaran $f(x, y) = 2x + 2y$, maka nilai maksimum $f(x, y)$ adalah ...



- A. 6
 B. 21
 C. 30
 D. 32
 E. 42
3. Jika $f(x) + 2f\left(\frac{1}{x}\right) = 3x$ dan $x \neq 0$, maka penyelesaian untuk $f(x) = (-x)$ adalah ...

- A. $\sqrt{2}$
 B. $-\sqrt{2}$

- C. $\sqrt{2}$ atau $-\sqrt{2}$
 D. -2 atau 2
 E. 2

4. Nilai a yang memenuhi persamaan $\frac{\log(a^2 - x^2)}{\log a} - \log_a\left(1 - \left(\frac{x}{a}\right)^2\right) = 0$ adalah ...

- A. -1 atau 1
 B. -1
 C. 1
 D. -2 atau 2
 E. 2

5. Diketahui persamaan $x^3 - 7x + 6 = 0$. Jumlah dua akar persamaan yang paling minimum adalah ...

- A. -3
 B. -2
 C. 1
 D. 2
 E. 3

6. $f^{-1}(x)$ dan $g^{-1}(x)$ menyatakan invers dari fungsi $f(x)$ dan $g(x)$. Jika $h(x) = 2x + 1$ dan $f \circ g \circ h(x^2) = 8x^2 + 2$, maka nilai dari $g^{-1} \circ f^{-1}(2)$ adalah ...

- A. -1
 B. $-1/2$
 C. $1/2$
 D. 1
 E. 4

7. Fungsi kuadrat $y = ax^2 + bx + c$ mempunyai nilai minimum -4 pada saat $x = 1/2$. Jika fungsi kuadrat tersebut dibagi dengan $(x + 2)$, maka sisanya 21. Fungsi kuadrat tersebut adalah ...

- A. $y = -4x^2 - 4x + 3$
- B. $y = 4x^2 + 4x - 3$
- C. $y = 4x^2 - 4x - 3$
- D. $y = -4x^2 + 4x + 3$
- E. $y = -4x^2 - 4x - 3$

8. Himpunan penyelesaian dari pertidaksamaan $5^{4x-3} + 25^{3-2x} < 30$ adalah ...

- A. $\{x|5 < x < 25\}$
- B. $\{x|x < 25 \text{ atau } x > 25\}$
- C. $\{x|-\frac{5}{4} < x < -1\}$
- D. $\{x|1 < x < \frac{5}{4}\}$
- E. $\{x|x < 1 \text{ atau } x > \frac{5}{4}\}$

9. Bagilah bilangan 100 menjadi dua bagian, sehingga seperempat dari bilangan yang pertama 11 lebih besarnya dari sepertiga bilangan yang kedua. Kedua bilangan tersebut adalah ...

- A. 24 dan 76
- B. 22 dan 78
- C. 28 dan 72
- D. 20 dan 80
- E. 26 dan 74

10. Jika antara Jakarta-Bogor berjarak 60 km. Agung berangkat dari Jakarta mengendarai mobil dengan kecepatan 60 km/jam. Agung berangkat pada pukul 8.30 pagi. Prasetyo berangkat dari Bogor ke Jakarta mengendarai motor dengan kecepatan 30 km/jam. Prasetyo berangkat lebih awal 30 menit dari Agung. Keduanya akan bertemu pada jam ...

- A. 8.45
- B. 9.00
- C. 9.15
- D. 9.30
- E. 10.00

11. Akar-akar persamaan $x^3 + 2x^2 + 3x + 4 = 0$ adalah α , β , dan γ . Nilai $\frac{1}{\alpha} + \frac{1}{\beta} + \frac{1}{\gamma}$ dan $\alpha^2 + \beta^2 + \gamma^2$ berturut-turut adalah...

- A. $\frac{3}{4}$ dan -2
- B. $-\frac{3}{4}$ dan -2
- C. $\frac{3}{4}$ dan -2
- D. 2 dan $-\frac{3}{4}$
- E. 2 dan $\frac{3}{4}$

12. Jika $f(x) = 10^x$ dan $g(x) = \log_{10} x^2$ untuk $x > 0$, maka $f^{-1}(g(x)) = \dots$

- A. $\log_{10}(\log_{10} x^2)$
- B. $(\log_{10} x^2)^2$
- C. $2 \log 2x$
- D. $2 \log_{10}(\log_{10} x^2)$
- E. $2(\log_{10} x^2)^2$

13. $\int e^{ax} \sin bx \, dx = \dots$

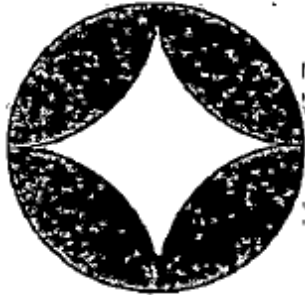
- A. $\frac{e^{ax}}{a^2+b^2}(a^2 \sin bx + b^2 \cos bx) + C$
- B. $\frac{e^{ax}}{a^2+b^2}(a^2 \sin bx - \cos bx) + C$
- C. $\frac{e^{ax}}{a+b}(a \sin bx + b \cos bx) + C$
- D. $\frac{e^{ax}}{a^2+b^2}(a \sin bx + b \cos bx) + C$
- E. $\frac{e^{ax}}{a^2-b^2}(a^2 \sin bx + b^2 \cos bx) + C$

14. Jika $f(x) = x^{x^2}$, maka $f'(2)$ adalah ...

- A. $64 (\ln 2 + 1)$
- B. $16(2 \ln 2 + 1)$
- C. $32 (\ln 2 + 1)$

- D. $32(2\ln 2 + 1)$
E. $16(\ln 2 + 2)$

15. Jika diameter lingkaran d cm, maka luas daerah yang digelapkan dalam gambar adalah ...



- A. $d^2(\frac{1}{2}\pi - 1)$
B. $d^2\pi$
C. $d^2(\frac{1}{2}\pi - 2)$
D. $d^2(\pi - 1)$
E. $d^2(2\pi - 1)$

16. Diketahui matriks $A = \begin{bmatrix} 1 & 2 \\ 2 & 1 \end{bmatrix}$ dan $I = \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$. Jika $(A - kI)$ adalah matriks yang singular, maka nilai k yang minimum adalah ...

- A. -3
B. -2
C. -1
D. 1
E. 3

17. Diketahui $\vec{a}, \vec{b}, \vec{c}$ adalah vector pada bidang, $\vec{b} = \vec{i} - 2\vec{j} + 2\vec{k}$, $\vec{b} \perp \vec{c}$ dan α sudut yang dibentuk oleh \vec{a} dan \vec{c} . Jika luas segitiga yang dibentuk oleh ujung-ujung vector \vec{a} , \vec{b} , dan \vec{c} adalah 6 satuan luas, maka $\cos \alpha$ adalah ...

- A. $\frac{3}{\sqrt{5}}$

- B. $\frac{4}{\sqrt{5}}$
C. $\frac{4}{5}$
D. $\frac{3}{5}$
E. $2\sqrt{5}$

18. Diketahui persamaan kuadrat $x^2 + (a - 1)x - 2 = 0$ memiliki akar-akar x_1 dan x_2 . Jika jumlah kuadrat kedua akar-akarnya sama dengan 5 dan α bilangan prima, maka α adalah ...

- A. 2
B. 3
C. 5
D. 7
E. 11

19. Penyelesaian dari pertidaksamaan $\frac{x^2 - 2x - 1}{x^2 + 2x + 1} < 0$ dan $\frac{x}{x-3} > 0$ adalah ...

- A. $1 - \sqrt{2} < x < 3$
B. $1 - \sqrt{2} < x < 0$
C. $-1 < x < 1 + \sqrt{2}$
D. $0 < x < 1 + \sqrt{2}$
E. $1 - \sqrt{2} < x < 1 + \sqrt{2}$

20. x_1 dan x_2 adalah akar-akar dari persamaan $(5^x - 2)(5^x - 4) = \log 1$. Jika $x_1 > x_2$ maka nilai $\left(\frac{1}{5}\right)^{3x_2 - 2x_1}$ adalah ...

- A. $-4 \log_5 2$
B. $-\log_5 2$
C. $\log_5 2$
D. $\log_5 25$
E. $\log_5 25$

21. Berikut ini adalah data penduduk suatu RT di kelurahan Pondok Bambu tahun 1985. Penduduk terbanyak terdapat

pada kelompok umur 20-24 tahun.

Kelompok Umur (tahun)	Jumlah Pendu (orang)
0-4	5
5-9	15
10-14	18
15-19	...
20-24	?
25-29	...
30-34	7

Jika modus umur penduduk = $19,5 + \frac{20}{7}$ tahun, jumlah penduduk pada kelompok umur 15-19 tahun lebih banyak 6 orang dari kelompok umur sebelumnya dan jumlah penduduk kelompok umur 25-29 tahun lebih banyak 18 orang dari kelompok umur sesudahnya, maka jumlah penduduk pada kelompok umur modus adalah ...

- A. 25
- B. 26
- C. 27
- D. 28
- E. 29

22. Rata-rata usia dari tiga sekawan yang telah lama bersahabat adalah 25 tahun, sedangkan median usianya adalah 18 tahun, dan jangkauan (range) usianya 15 tahun. Usia dari tiga sekawan yang paling tua adalah ...

- A. 40
- B. 36
- C. 35
- D. 22

E. 21

23. $x_1, x_2, x_3, \dots, x_N$ adalah nilai-nilai pengukuran dari tinggi badan mahasiswa STIS tingkat 1 Tahun Akademik 2011/2012. Dari hasil pengukuran diperoleh rata-rata tinggi badan 168 cm, dengan jangkauan (range) 30 cm. Jika semua hasil pengukuran $x_1, x_2, x_3, \dots, x_N$ dikalikan a dan ditambah β diperoleh nilai rata-rata tinggi badan yang baru yaitu sebesar 185 cm dengan jangkauan 40 cm, maka nilai a dan β berturut-turut adalah ...

- A. $\frac{4}{3}$ dan 39
- B. $-\frac{4}{3}$ dan 39
- C. 39 dan $-\frac{4}{3}$
- D. -39 dan $-\frac{4}{3}$
- E. $\frac{4}{3}$ dan -39

24. A dan B adalah dua kejadian yang saling lepas (saling asing), dimana $P(A) = \frac{2}{3}$ dan $P(A^c \cap B^c) = \frac{1}{5}$. Nilai $P(B)$ adalah ...

- A. $\frac{3}{5}$
- B. $\frac{2}{5}$
- C. $\frac{1}{15}$
- D. $\frac{3}{15}$
- E. $\frac{2}{15}$

25. Salah satu acara daam pagelaran pentas seni kampus STIS akan menampilkan drama musical modern dengan 3 orang pemain inti akan diseleksi oleh panitia. UKM Kesenian telah mempunyai 5 orang calon potensial untuk pemain inti

yang akan menjadi pemeran utama dan 2 orang pemeran pendukung. Banyaknya cara yang bisa dipilih oleh panitia adalah ...

- A. 10
- B. 20
- C. 30
- D. 50
- E. 60

26. Madin adalah seorang pedagang gerobak dorong dengan modal Rp 1.000.000,00 di Pasar Kebon Sayur. Sehari-hari Madin menjual buah jeruk dan manga, yang diperolehnya dari Pasar Jatinegara. Adapun kapasitas muatan gerobak dorong tersebut 120 kg. Keuntungan yang diperolehnya setiap hari sangat bervariasi, walaupun setiap hari dagangannya habis terjual. Madin sangat menginginkan keuntungan yang sama tiap hari dengan nilai keuntungan yang paling besar. Harga jeruk dan manga per kg di Pasar Jatinegara masing-masing Rp 10.000,00 dan Rp 7.500,00. Kemudian Madin menjual kembali, masing-masing dengan harga Rp 12.000,00 dan Rp 10.000,00. Keuntungan maksimum yang diperoleh adalah ...

- A. Rp 275.000,00
- B. Rp 280.000,00
- C. Rp 285.000,00
- D. Rp 290.000,00
- E. Rp 295.000,00

27. Nilai minimum dari fungsi $f(x, y) = 15x + 10y$ yang memenuhi syarat-syarat pertidaksamaan $x + y \geq 8$ di mana $x \geq 0$ dan $y \geq 0$ adalah ...

- A. 70
- B. 80
- C. 90
- D. 100
- E. 120

28. Nilai dari $\lim_{x \rightarrow 0} \frac{2x^2}{1 - \cos^2 2x}$ adalah ...

- A. 0
- B. $\frac{1}{5}$
- C. $\frac{2}{5}$
- D. $\frac{1}{2}$
- E. $\frac{1}{4}$

29. Jika matriks Q adalah invers matriks P, matriks S adalah invers matriks R dan $PQR=S$, maka yang merupakan matriks Identitas (I) adalah ...

- A. P dan Q
- B. P dan R
- C. P dan S
- D. Q dan R
- E. R dan S

30. Nilai $\lim_{x \rightarrow \infty} \sqrt{(3x-5)(x+2)} - \sqrt{3x^2 - 1}$ adalah ...

- A. $3 - \sqrt{3}$
- B. $3 + \sqrt{3}$
- C. $1 - \frac{1}{6}\sqrt{3}$
- D. $1 + \frac{1}{6}\sqrt{3}$

E. $3 - \frac{1}{6}\sqrt{3}$

31. Toha adalah seorang pengusaha layang-layang yang sehari-hari ya bekerja dibantu oleh istri dan anaknya. Biaya total per bulan yang dikeluarkan untuk memproduksi x layang-layang dinyatakan dengan $f(x) = 2x^2 + 500x + 5000$. Jika harga sebuah layang-layang Rp 4.500,00 maka keuntungan maksimum yang diperoleh Toha adalah

- A. Rp 1.987.000,00
B. Rp 1.990.000,00
C. Rp 1.992.000,00
D. Rp 1.995.000,00
E. Rp 2.000.000,00

32. Diketahui vektor $x_1 = \begin{bmatrix} 2 \\ -1 \\ 2 \end{bmatrix}$,
vektor $x_2 = \begin{bmatrix} 4 \\ 10 \\ -8 \end{bmatrix}$ dan vektor
($x_1 + ax_2$) tegak lurus pada
vektor x_1 . Nilai a adalah ...

- A. -2
B. -1
C. -1/2
D. 1/2
E. 1

33. Jika diketahui:

$$a + 3b + 2d = 2010$$

$$6a + 2b = 2000$$

$$6c + 3d = 999$$

maka $a + b + c + d = \dots$

- A. 619
B. 719
C. 819

- D. 919
E. 1019

34. Dari ketiga persamaan di bawah ini untuk $x, y, z > 0$

$$(x - 1)(y - 2) = 12$$

$$(y - 2)(z - 3) = 20$$

$$(z - 3)(x - 1) = 15$$

Maka nilai $x + 2y + 3z = \dots$

- A. 18
B. 22
C. 48
D. 40
E. 42

35. Bentuk sederhana dari $\frac{y^{-1}+xy^{-2}}{1-x^2y^{-2}}$ adalah ...

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

36. $\lim_{x \rightarrow 0} \frac{\sqrt{1+x}-1}{\sqrt[3]{1+x}-1}$ adalah ...

- A. 0
B. 1/3
C. 2/3
D. 1
E. 3/2

37. Diketahui prisma segilima beraturan ABCDE.FGHIJ. Jika panjang rusuk alas 6 cm dan tinggi prisma 10 cm, maka panjang diagonal AI adalah ...

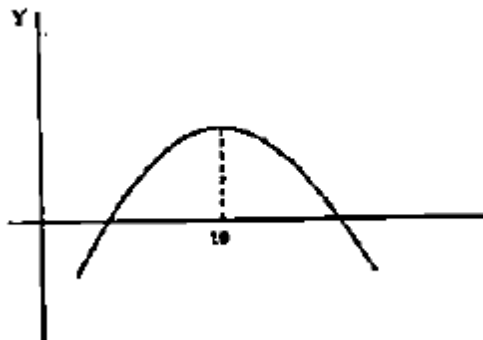
- A. $\sqrt{100 + 144 \sin^2 36}$
B. $\sqrt{144 + 100 \sin^2 36}$
C. $\sqrt{100 + 144 \sin 36}$

- D. $\sqrt{144 + 100 \cos 36}$
 E. $\sqrt{100 + 144 \cos 36}$

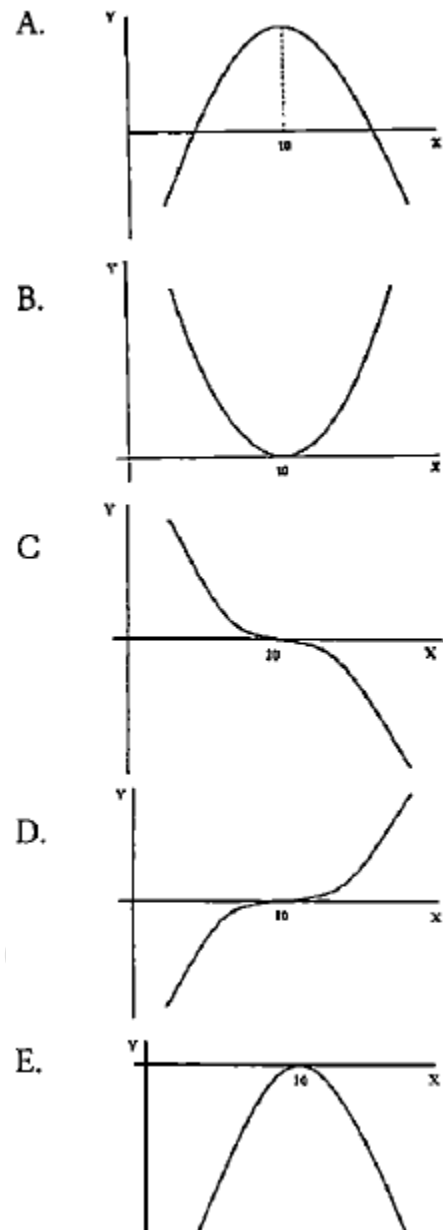
38. Daerah R terletak di kuadran I yang dibatasi oleh parabola $y = x^2$, parabola $y = 4x^2$, dan garis $y = 4$. Volume benda putar yang terbentuk apabila R diputar terhadap sumbu y adalah ...

- A. 3π
 B. 4π
 C. 6π
 D. 8π
 E. $\frac{8\pi}{3}$

39. Jika grafik suatu fungsi $y = f(x)$ yang mendatar sesaat untuk $x = 10$ adalah sebagai berikut:

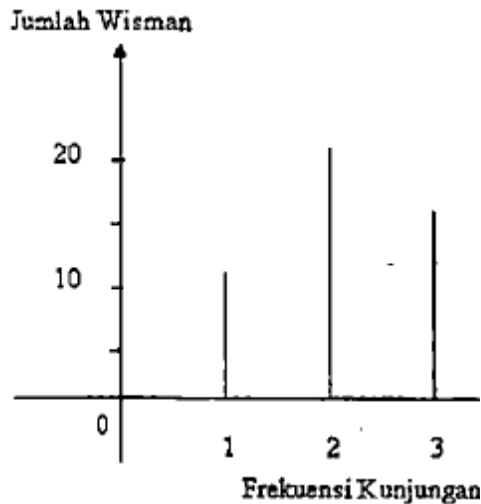


Maka grafik turunan dari $f(x)$ di sekitar $x = 10$ mempunyai kurva ...



40. Data di bawah ini menunjukkan sampel (contoh) wisatawan mancanegara (wisman) yang berkunjung ke Indonesia dalam suatu survei di Bandara Soekarno Hatta.

Pernyataan yang benar dari tiga ukuran statistik yang digunakan, yaitu rata-rata hitung, median dan modus dari frekuensi kunjungan wisman ke Indonesia adalah...

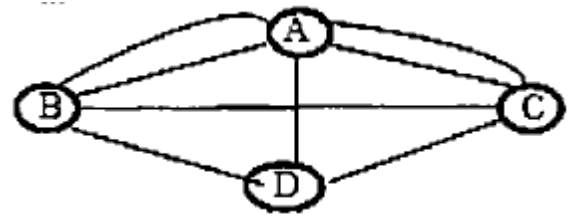


- A. Rata-rata hitung = Median = Modus
- B. Rata-rata hitung = Median
- C. Rata-rata hitung = Modus
- D. Median = Modus
- E. Ketiga ukuran statistik tidak ada yang sama

41. Sule berjalan kaki dengan kecepatan 4km/jam, setelah 20 km Sule berlari sejauh 60 km dalam waktu 3 jam. Kecepatan rata-rata Sule adalah ...

- A. 12 km/jam
- B. 11 km/jam
- C. 10 km/jam
- D. 9 km/jam
- E. 8 km/jam

42. Gambar di bawah ini menunjukkan lalu lintas jalan raya yang menghubungkan kota A, B, C dan D. Nyatakanlah dalam bentuk matriks banyaknya jalan yang menghubungkan masing-masing kota ...



- A. $\begin{bmatrix} 0 & 2 & 1 & 2 \\ 2 & 0 & 1 & 1 \\ 1 & 1 & 0 & 1 \\ 2 & 1 & 1 & 0 \end{bmatrix}$
- B. $\begin{bmatrix} 0 & 2 & 2 & 1 \\ 2 & 0 & 1 & 1 \\ 2 & 1 & 0 & 1 \\ 1 & 1 & 1 & 0 \end{bmatrix}$
- C. $\begin{bmatrix} 0 & 1 & 2 & 1 \\ 1 & 0 & 2 & 2 \\ 2 & 2 & 0 & 1 \\ 1 & 2 & 1 & 0 \end{bmatrix}$
- D. $\begin{bmatrix} 1 & 2 & 1 & 2 \\ 2 & 1 & 1 & 1 \\ 1 & 1 & 1 & 1 \\ 2 & 1 & 1 & 2 \end{bmatrix}$
- E. $\begin{bmatrix} 0 & 2 & 1 & 2 \\ 2 & 0 & 1 & 1 \\ 1 & 1 & 0 & 1 \\ 2 & 1 & 1 & 0 \end{bmatrix}$

43. $\int_{-2}^2 |x - 2| dx$ adalah ...

- A. 0
- B. 4
- C. 8
- D. 10
- E. 12

44. Bentuk sederhana dari

$$\frac{1}{\sqrt{1} + \sqrt{2}} + \frac{1}{\sqrt{2} + \sqrt{3}} + \frac{1}{\sqrt{3} + \sqrt{4}} + \dots + \frac{1}{\sqrt{39999} + \sqrt{40000}}$$

adalah ...

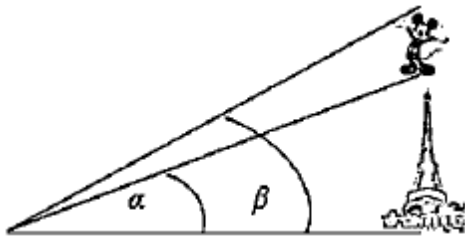
- A. 1/199
- B. 1/201
- C. 199
- D. 200
- E. 201

45. Volume benda putar yang terbentuk dari daerah R yang dibatasi oleh kurva $y = 1 - x^2$ dan sumbu x yang diputar mengelilingi sumbu x adalah...

- A. $\frac{15}{16}\pi$

- B. $\frac{16}{17}\pi$
- C. $\frac{16}{15}\pi$
- D. $\frac{8}{15}\pi$
- E. $\frac{8}{17}\pi$

46. Lya mencoba menentukan tinggi hiasan paatung Mickey Mouse pada puncak menara dengan cara mengukur sudut pandang dari suatu tempat sejauh x dari kaki menara. Misalkan sudut pandang α dan β seperti pada gambar, maka tinggi patung itu adalah ...



- A. $x(\tan \alpha - \tan \beta)$
- B. $x(\tan \beta - \tan \alpha)$
- C. $x(\tan \alpha + \tan \beta)$
- D. $x(\tan \alpha + \sin \beta)$
- E. $x(\sin \alpha - \sin \beta)$

47. Nilai x yang memenuhi pertidaksamaan $\sqrt[4]{\frac{1}{16^{2x}}} >$

$$\frac{32^{2x}}{4^{9x-16}} \sqrt[3]{8^{2x}} \text{ adalah ...}$$

- A. -10
- B. -8
- C. 8
- D. 9
- E. 10

48. Persamaan garis yang melalui titik potong garis $5x + 6y - 16 = 0$ dan $10x - 3y - 17 = 0$ serta tegak lurus dengan AB, di mana A titik (1,2) dan B titik (3,6) adalah ...

- A. $2x + y - 4 = 0$
- B. $2x + y + 4 = 0$
- C. $x + 2y + 4 = 0$
- D. $x - 2y - 4 = 0$
- E. $x + 2y - 4 = 0$

49. Diketahui tiga pertanyaan berikut:

X: Indonesia bukan anggota PBB

Y: Vitamin A tidak larut dalam lemak

Z: STIS adalah sekolah tinggi kedinasan

Pernyataan majemuk di bawah ini yang bernilai benar adalah ...

- A. $(X \vee \sim Y) \wedge (\sim Y \wedge \sim Z)$
- B. $(X \vee Y) \wedge (\sim Y \wedge Z)$
- C. $(X \wedge Z) \vee (Y \wedge Z)$
- D. $(X \vee \sim Y) \wedge (\sim Y \wedge Z)$
- E. $(Z \vee Y) \rightarrow (X \wedge \sim Z)$

50. Jumlah akar-akar dari persamaan $\frac{\sqrt{2x-5}-2}{\sqrt{x-3}-1} = 1$ adalah ...

- A. 6
- B. 9
- C. 10
- D. 12
- E. 13

51. Sebuah kolam ikan berbentuk persegi panjang. Jika lebar kolam ditambah 10 m dan panjangnya ditambah 5 m, maka luas kolam ikan tersebut bertambah 350 m^2 . Tetapi jika lebarnya dikurangi 5 m dan panjangnya ditambah 10 m luasnya akan berkurang 25 m^2 . Luas kolam ikan semula adalah ...

- A. 150 m^2
- B. 312 m^2
- C. 322 m^2
- D. 325 m^2
- E. 462 m^2

52. Seorang petani sedang menyemprot tanaman padinya dengan obat serangga. Reaksi terhadap obat serangga tersebut t jam setelah disemprotkan pada tanaman padi, yang dinyatakan sebagai bilangan tak negatif yang sama dengan $15t^2 - t^3$. Reaksi terkecil akan dicapai pada saat ...

- A. 25 jam sebelum reaksi habis
- B. 15 jam sebelum reaksi habis
- C. 10 jam sebelum reaksi habis
- D. 5 jam sebelum reaksi habis
- E. 0 jam sebelum reaksi habis

53. Jika di antara bilangan 4 dan 37 disisipkan 10 bilangan lainnya sehingga membentuk deret aritmetika, maka jumlah 6 suku pertama adalah ...

- A. 19
- B. 69
- C. 105
- D. 138
- E. 246

54. Nilai

$$\lim_{x \rightarrow y} \frac{\tan x - \tan y}{1 - \frac{x}{y} + \left(1 - \frac{x}{y}\right) \tan x \tan y} \text{ adalah ...}$$

- A. $-1/y$
- B. $1/y$
- C. 1
- D. y
- E. $-y$

55. Jika $f(x) = \ln \sqrt[3]{\frac{2-x}{x^2}}$, maka turunan pertama $f(x)$ terhadap x adalah ...

- A. $\frac{x^{\frac{2}{3}}}{(2-x)^{\frac{1}{3}}}$
- B. $\frac{x^{\frac{2}{3}}}{(2-x)^{\frac{1}{3}}}$
- C. $\frac{2(x-1)}{3x(2-x)}$
- D. $\frac{x-4}{3x(2-x)}$
- E. $\frac{x+4}{3x(2-x)}$

56. Jika $a^2 + b^2 = 1$ dan $c^2 + d^2 = 1$ maka pertidaksamaan yang memenuhi adalah ...

- A. $ac + bd \geq 2$
- B. $ac + bd \leq 1$
- C. $ac + bd \geq -2$
- D. $ac + bd \leq -1$
- E. $ac + bd > 0$

57. Seratus siswa dari SMA I dan SMA II Kota Batam mengikuti seleksi tes masuk STIS dengan skor rata-rata adalah 80. Banyaknya siswa SMA I yang mengikuti seleksi tersebut 50% lebih banyak dari siswa SMA II dan skor rata-rata siswa SMA I lebih tinggi 50% dari skor rata-rata siswa SMA II. Skor rata-rata SMA II adalah ...

- A. 900/15
- B. 900/13
- C. 800/15
- D. 800/14
- E. 800/13

58. Banyak bilangan antara 0 dan 500 yang disusun dari angka lima adalah ...

- A. 75
- B. 78
- C. 88
- D. 95
- E. 98

59. Jika

$$\left(\sqrt{7+2\sqrt{12}}\right)^x - \left(\sqrt{7-2\sqrt{12}}\right)^x = \frac{8}{3}$$

maka nilai x yang memenuhi adalah ...

- A. $\log_{(\sqrt{3}-2)} 3$
- B. $\log_{(\sqrt{3}+2)} 2$

- C. $\log_{(\sqrt{3}-2)} 2$
- D. $\log_{(\sqrt{3}+2)} 8$
- E. $\log_8 2$

60. Yusron memiliki 10 ekor bebek betina dan 5 ekor bebek jantan. Dia akan menjual 5 ekor bebek yang dimiliki. Peluang bahwa bebek yang dijual 3 ekor bebek betina adalah ...

- A. $\frac{200}{1001}$
- B. $\frac{300}{1001}$
- C. $\frac{400}{1001}$
- D. $\frac{400}{1000}$
- E. $\frac{200}{1000}$

fisher education

Soal Matematika USM STIS 2013

Waktu : 90 Menit

Petunjuk

- Di bawah setiap soal dicantumkan 5 kemungkinan jawaban masing masing diberi kode A, B, C, D atau E. Gunakan pensil 2B untuk menghitamkan lingkaran yang berisi kode jawaban yang saudara anggap benar pada lembar jawaban computer (LJK)
- Nilai Jawaban tiap soal adalah :
2 untuk jawaban benar
0 untuk tidak ada jawaban
-1 untuk jawaban salah
- Mengganti jawaban dilakukan dengan cara melingkari kode jawaban baru yang dipilih kemudian bubuhkan tanda silang di dalam lingkaran jawaban sebelumnya.
- Lembar jawaban tidak boleh kotor dan terlipat
- Hanya lembar jawaban yang dikumpulkan, sedangkan soal bisa dibawa pulang.

Selamat Mengerjakan

*Sifat gengsi merupakan awal pemicu
Kebohongan di dalam perkataan*

1. $(-15) + 5 \times 10 - 14 : (-2) = \dots$
 - A. 57
 - B. -57
 - C. 42
 - D. -42
 - E. -20
2. Jika $\frac{6x}{2y-1} = 3$ dengan x dan y bilangan asli, maka ...
 - A. $x > y$
 - B. $x < y$
 - C. $x = y$
 - D. $x = y - 3$
 - E. x dan y tidak dapat ditentukan hubungannya
3. Jika $\frac{6}{x} + \frac{3}{y} + \frac{4}{z} = 7, \frac{3}{x} + \frac{5}{y} + \frac{6}{z} = 9, \frac{3}{x} + \frac{4}{y} + \frac{2}{z} = 6$, maka nilai xyz adalah...
 - A. 4
 - B. 6
 - C. 10
 - D. 12
 - E. 16
4. Diketahui kandungan air dalam cengkih basah adalah 45% dari beratnya, maka berapa berat cengkih yang sudah dikeringkan dari 150 kwintal cengkih basah adalah ...
 - A. 67,5 kg
 - B. 82,5 kg
 - C. 6.750 kg
 - D. 8.250 kg
 - E. 8.750 kg
5. Berapakah nilai $a+b$ jika diketahui

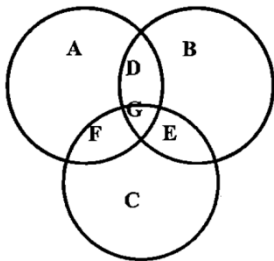
$$\sqrt{6 + \sqrt{6 + \sqrt{6 + \dots}}}$$
 dan

$$\sqrt{20 + \sqrt{20 + \sqrt{20 + \dots}}}$$
 - A. 1
 - B. 1
 - C. 8
 - D. 8
 - E. 14
6. Jika $\left(\frac{1}{a} + a\right)^2 = 100$, maka nilai dari $\left(\frac{1}{a} + a\right)^2 + \left(\frac{1}{a} - a\right)^2$ adalah ...
 - A. 192
 - B. 194
 - C. 196
 - D. 198
 - E. 200
7. Jika X bilangan yang menyatakan 12,34% dari 56,78, dan Y bilangan yang menyatakan 5,678% dari 123,4 maka ...
 - A. $X < Y$
 - B. $X > Y$
 - C. $X \neq Y$
 - D. $X = Y + 1$
 - E. $X = Y$
8. Seorang peserta ujian PMB STIS dapat menyelesaikan x soal dalam waktu $1/t$ jam. Banyak soal yang dapat diselesaikan peserta tersebut dalam waktu t jam adalah ...
 - A. $\frac{t}{x}$
 - B. $\frac{t^2}{x}$
 - C. xt
 - D. tx^2
 - E. xt^2
9. Jika $a < b$ dan $a^2 + b^2 = -4ab$, maka $\frac{b-a}{a+b}$ adalah ...
 - A. $\frac{1}{3}$
 - B. $\frac{1}{3}\sqrt{3}$
 - C. $\sqrt{3}$
 - D. 3
 - E. 4

10. Himpunan penyelesaian dari pertidaksamaan $|x| - x \leq 2$ adalah ...

A. $\{x | -1 \leq x \leq 0, x \in R\}$
 B. $\{x | x \geq -1, x \in R\}$
 C. $\{x | x \leq 0, x \in R\}$
 D. $\{x | x \in R\}$
 E. $\{\}$

11. Daerah A, B, dan C beririsan. Pernyataan di bawah ini yang benar adalah ...



A. Sebagian A adalah juga E
 B. Semua F juga B
 C. Sebagian C adalah D
 D. Semua G juga C
 E. Semua E adalah A

12. Dalam sebuah taman bermain, murid-murid dikelompokkan berdasarkan makanan yang disukai dan tidak disukai. 20% murid tidak suka makan sayuran dan buah. 40% murid suka sayuran. Jika jumlah murid dalam taman bermain tersebut adalah 45 dan murid yang suka makan buah dan sayuran ada 5 orang, maka jumlah murid yang suka makan buah adalah ...

A. 9
 B. 13
 C. 18
 D. 23
 E. 36

13. Sebuah bola jatuh dari ketinggian 10 m dan memantul kembali dengan ketinggian $\frac{3}{4}$ kali tinggi sebelumnya, begitu seterusnya sampai bola berhenti. Jumlah seluruh lintasan bola adalah ...

A. 30 m
 B. 40 m
 C. 70 m
 D. 75 m
 E. 80 m

14. Suatu seri angka terdiri dari: 2 3 4 4 8 6 10 7 14 9 16 10 20 12. Dua angka berikutnya adalah ...

A. 13, 22
 B. 24, 12
 C. 22, 8
 D. 22, 13
 E. 18, 14

15. Jika $A = \begin{bmatrix} 1 & 1 & 1 \\ p & q & r \\ p^3 & q^3 & r^3 \end{bmatrix}$, maka determinan matriks A adalah

A. $(p - q)(q - r)(r - p)$
 B. $(p + q)(q - r)(r - p)$
 C. $(p - q)(q - r)(r - p)(p - q - r)$
 D. $(p + q)(q - r)(r - p)(p + q + r)$
 E. $(p - q)(q - r)(r - p)(p + q + r)$

16. Jika sudut antara vector $\vec{a} = i - \sqrt{2}j - pk$ dan $\vec{b} = -i + \sqrt{2}j - pk$ adalah 60° maka $p = \dots$

A. $-\frac{1}{2}$ atau $\frac{1}{2}$
 B. -1 atau 1
 C. $-\sqrt{3}$ atau $\sqrt{3}$
 D. $-\sqrt{5}$ atau $\sqrt{5}$
 E. $-\frac{1}{2}\sqrt{5}$ atau $\frac{1}{2}\sqrt{5}$

17. Matriks B adalah invers dari matriks A. Matriks D adalah invers dari matriks C dan $ABC = D$. Maka yang merupakan matriks identitas (I) adalah ...

A. A^2
 B. B^2
 C. C^2
 D. D^2
 E. AC^2

18. Fungsi $f(x) = \sqrt{\frac{x^2-2x+1}{16-x^2}}$ terdefinisi untuk x yang memenuhi ...

A. $-1 < x < 4$
 B. $x < -4$ atau $x > 4$
 C. $x < -1$ atau $x > 1$
 D. $-4 < x < 4$
 E. $-1 < x < 1$

19. Jika sebuah fungsi dinyatakan sebagai $f(x) = C_4^5 \left(\frac{1}{4}\right)^x \left(\frac{3}{4}\right)^x$, maka nilai $f(2)$ adalah ...

A. $\frac{27}{256}$
 B. $\frac{256}{25}$
 C. $\frac{256}{135}$
 D. $\frac{135}{256}$

20. $\frac{\log x \sqrt{x} - \log y + \log \frac{x}{y^2}}{\log \frac{x}{y}} = \dots$

A. $\frac{1}{2} \log_y x$
 B. $\log_y x$
 C. $\frac{5}{2} \log_y y$
 D. $\frac{3}{2} \log_x y$
 E. $-\frac{1}{2} \log_x y$

21. Jika kurva $x = 2^{2y+1} - 5 \cdot 2^y + 2$ berpotongan dengan sumbu y, maka jarak kedua titik potongnya adalah ...

A. $\sqrt{2}$
 B. 1,5

C. 2
 D. 2,5
 E. 4

22. Jika $f(x) = 10^x$ dan $g(x) = {}^{10}\log x^2$ untuk $x > 0$, maka $f^{-1}(g(x)) = \dots$

A. ${}^{10}\log({}^{10}\log x^2)$
 B. $({}^{10}\log x^2)^2$
 C. $\frac{\log 10}{\log({}^{10}\log x^2)}$
 D. $2^{10}\log({}^{10}\log x^2)$
 E. $2({}^{10}\log x)^2$

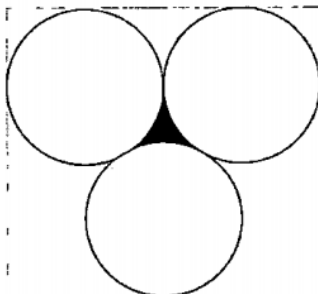
23. Diketahui $f(x) = 3x + 4$ dan $(f \circ g)(x + 1) = x^{2+2x-2}$. Nilai $g(2)$ adalah ...

A. $\frac{2}{3}$
 B. $\frac{3}{3}$
 C. $-\frac{1}{3}$
 D. $-\frac{3}{3}$
 E. $-\frac{5}{3}$

24. Jumlah dua bilangan adalah 67 dan selisihnya 13. Jika dua bilangan tersebut dibuat suatu pecahan dengan pembilangnya bilangan yang kecil, maka pecahan tersebut adalah ...

A. 67
 B. 54
 C. 40
 D. 35
 E. 27

25. Separuh peserta ujian PMB STIS gagal karena tidak lulus pada tahap ujian pertama. 300 orang peserta ujian lainnya gagal setelah tes psikotes, sehingga tinggal $\frac{2}{5}$ dari seluruh peserta ujian PMB STIS. Jumlah peserta ujian PMB STIS seluruhnya adalah ...

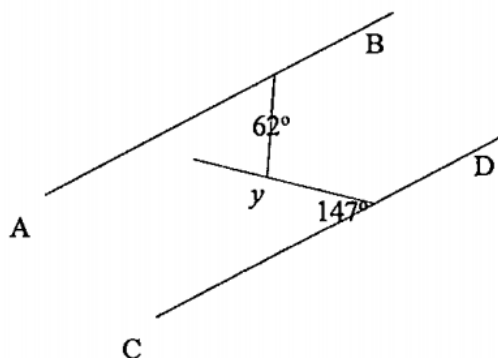
- A. 1200
B. 1500
C. 2700
D. 3000
E. 5000
26. Dengan persediaan kain batik 20 m dan kain polos 10 m, seorang penjahit akan membuat 2 model pakaian jadi, model A dan model B. Model A memerlukan 1 m kain batik dan 1,5 m kain polos. Model B memerlukan 2 m kain batik dan 0,5 m kain polos. Jika kedua model harus dibuat, maka jumlah maksimum pakaian yang bias dibuat adalah ... pakaian.
- A. 8
B. 10
C. 12
D. 16
E. 20
27. Jika $f(x) = ax^3 + 3bx^2 + (2a - b)x + 4$ dibagi dengan $(x - 1)$ sisanya 2. Nilai a dan b berturut-turut adalah ...
- A. $\frac{4}{3}$ dan 1
B. $\frac{3}{4}$ dan 1
C. 1 dan $\frac{4}{3}$
D. 1 dan $\frac{3}{4}$
E. $\frac{4}{3}$ dan 1
28. Jika suku banyak $f(x)$ dibagi $x - 1$ sisa 3 dan jika $f(x)$ dibagi $3x + 1$ sisa -1. Sisa pembagian jika $f(x)$ dibagi $(3x - 2x - 1)$ adalah ...
- A. 3
B. 2
C. $3x$
D. $3x + 1$
E. $\frac{3}{2}x + \frac{3}{2}$
29. Jika $\int_1^0 f(x)dx = 2$, $\int_0^5 f(x)dx = 1$, maka nilai $\int_5^1 f(x)dx$ adalah ...
- A. 3
B. 2
C. 1
D. 1
E. 3
30. Ditentukan $\tan \frac{A}{2} = t$, maka $\sin A = \dots$
- A. $\frac{t}{1-t^2}$
B. $\frac{2t}{1-t^2}$
C. $\frac{3t}{1-t^2}$
D. $\frac{4t}{1-t^2}$
E. $\frac{5t}{1-t^2}$
31. Jika tiga lingkaran berjari-jari 1 disusun seperti dalam gambar, maka luas daerah yang diarsir pada gambar di bawah ini adalah ...
- 
- A. $\frac{\pi}{2} - \sqrt{3}$
B. $\sqrt{3} + \frac{\pi}{2}$
C. $\pi - \sqrt{3}$
D. $\sqrt{3} - \frac{\pi}{2}$
E. $2 - \frac{\pi}{2}$
32. Segitiga ABC sama kaki, yaitu $AB = AC$. Segitiga tersebut memiliki keliling 32. Jika panjang garis tinggi dari A adalah 8, maka panjang AC adalah ...

- A. 10
- B. $11\frac{1}{3}$
- C. 12
- D. $13\frac{1}{3}$
- E. 20

33. Garis g dan h saling bersilangan. Garis g terletak pada bidang V dan bidang V sejajar dengan garis h. garis h terletak pada bidang W dan bidang W berpotongan dengan bidang V pada garis k. Pernyataan berikut yang benar adalah ...

- A. k sejajar g dan memotong h
- B. k memotong g dan h
- C. k dan h bersilangan
- D. k sejajar h dan memotong g
- E. k berimpit dengan g

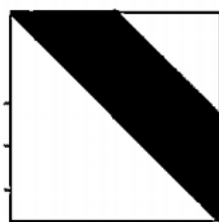
34. jika AB sejajar CD, maka nilai y adalah ...



- A. 90°
- B. 95°
- C. 97°
- D. 99°
- E. 103°

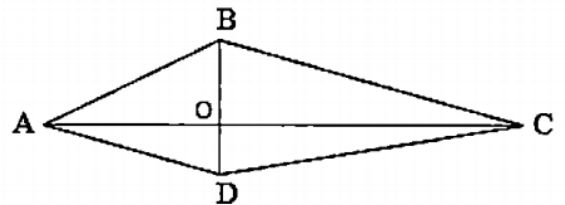
35. Perbandingan luas daerah yang berwarna gelap terhadap luas persegi dalam gambar ini adalah...

- A. 1:3
- B. 2:5
- C. 3:5
- D. 3:8



- E. 5:8

36. ABCD adalah segi empat dengan O adalah titik potong diagonal-diagonalnya: Misalkan luas daerah $\triangle ABD$ adalah 1, luas daerah $\triangle ABC$ adalah 3, dan luas daerah $\triangle ACD$ adalah 2. Maka luas daerah $\triangle BDC$ dan $\triangle ABO$ adalah ...



- A. 3 dan $\frac{1}{2}$
- B. 4 dan $\frac{1}{2}$
- C. 3 dan $\frac{3}{5}$
- D. 4 dan $\frac{3}{5}$
- E. 4 dan $\frac{2}{3}$

37. Pada kubus ABCD.EFGH yang mempunyai sisi 6 cm , jarak antara titik A ke garis HB adalah ..

- A. $6\sqrt{2}$
- B. $3\sqrt{2}$
- C. $2\sqrt{6}$
- D. $2\sqrt{3}$
- E. $3\sqrt{3}$

38. Pada kubus ABCD. EFGH dengan panjang rusuk a satuan, terdapat bola di luar kubus yang dinyatakan dengan B_1 dan bola di dalam

kubus yang dinyatakan dengan B2.
Perbandingan volume bola B1 dan B2 adalah ...

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

39. Koordinat titik pusat dan jari-jari lingkaran $4x^2 + 4y^2 + 4x - 12y + 1 = 0$ adalah ...

- A. (1,3) dan 1
- B. (-1,3) dan 1
- C. $(-\frac{1}{2}, \frac{3}{2})$ dan 1
- D. $(\frac{1}{2}, \frac{3}{2})$ dan $\frac{3}{2}$
- E. $(-\frac{1}{2}, \frac{3}{2})$ dan $\frac{3}{2}$

40. Lingkaran dengan persamaan $x^2 + y^2 - 6x + 4y - 3 = 0$ dicerminkan terhadap garis $x = -10$, kemudian digeser sejauh $(\frac{15}{4})$. Maka persamaan lingkaran hasilnya adalah ...

- A. $x^2 + y^2 + 16x - 4y + 58$
- B. $x^2 + y^2 - 16x - 4y + 58$
- C. $x^2 + y^2 + 16x + 4y + 58$
- D. $x^2 + y^2 + 16x + 48$
- E. $x^2 + y^2 - 16x + 48$

41. Suatu keluarga mempunyai 5 orang anak. Anak termuda berumur setengah dari anak tertua. Tiga anak lainnya berturut-turut, berumur lebih 2 tahun dari anak termuda, lebih 3 tahun dari anak termuda, dan kurang 5 tahun dari anak tertua. Bila rata-rata umur mereka adalah 14 tahun, maka umur anak tertua ...

- A. 18 tahun
- B. 20 tahun

- C. 22 tahun
- D. 24 tahun
- E. 26 tahun

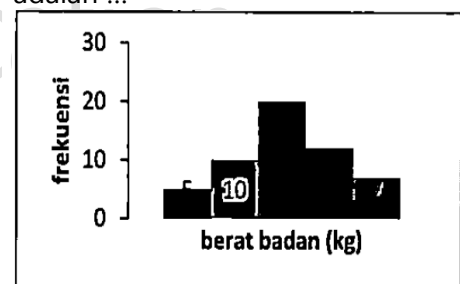
42. Diketahui data tinggi badan 10 siswa SMA adalah sebagai berikut,

165	160	170	158	163
165	155	170	160	160

Maka pernyataan yang memenuhi adalah ...

- A. Rata-rata = Median
- B. Rata-rata < Median
- C. Rata-rata = Modus
- D. Median = Modus
- E. Median > Modus

43. Kuartil pertama dari data yang disajikan dalam histogram berikut adalah ...



- A. $49,5 + (\frac{10}{18})$
- B. $49,5 + (\frac{2}{18})$
- C. $49,5 + (\frac{50}{18})$
- D. $49,5 - (\frac{2}{18})$
- E. $49,5 - (\frac{50}{18})$

44. Jika dari 200 siswa di sebuah tempat kursus dapat dikelompokkan sebagai berikut:

Tingkatan	Jenis Kelamin	
	Laki-laki	Perempuan
Kursus		
Level 1	38	45
Level 2	28	50

Level 3	22	17
---------	----	----

Jika akan dipilih seorang siswa secara acak, maka peluang siswa tersebut berjenis kelamin perempuan dan berasal dari level 2 adalah ...

- A. $\frac{14}{100}$
- B. $\frac{25}{100}$
- C. $\frac{28}{112}$
- D. $\frac{50}{112}$
- E. $\frac{56}{100}$

45. Jika C_r^n menyatakan banyaknya kombinasi r elemen dari n elemen dan $C_3^n = n$ maka C_r^{2n} adalah ...

- A. $2n$
- B. 2^n
- C. 20
- D. 28
- E. 56

46. Sebagai pemain catur internasional, dalam 9 kali pertandingan biasanya Utut hanya kalah 1 kali. Jika dalam turnamen utu harus bermain 3 kali, maka peluang Utut kalah dalam salah satu pertandingan adalah ...

- A. $\frac{64}{243}$
- B. $\frac{64}{81}$
- C. $\frac{8}{243}$
- D. $\frac{64}{729}$
- E. $\frac{1}{729}$

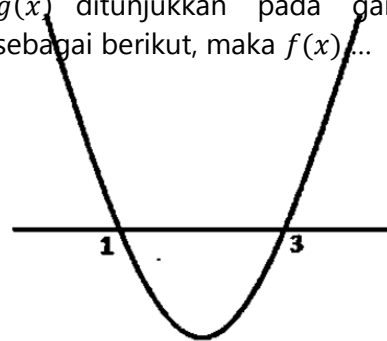
47. Nilai dari $\lim_{a \rightarrow b} \frac{(a\sqrt{a} - b\sqrt{b})}{\sqrt{a} - \sqrt{b}}$ adalah ...

- A. 0
- B. $3a$
- C. B
- D. $3b$
- E. \sim

48. $\lim_{x \rightarrow 0} \frac{2\sin^2 \frac{x}{2}}{x \sin x} = \dots$

- A. 0
- B. $\frac{1}{4}$
- C. $\frac{1}{2}$
- D. 2
- E. ∞

49. Grafik $g(x)$ merupakan fungsi turunan pertama $f(x)$, jika grafik $g(x)$ ditunjukkan pada gambar sebagai berikut, maka $f(x)$...



- A. Mencapai maksimum $x=3$
- B. Mencapai maksimum $x=1$
- C. Turun pada $1 < x < 3$
- D. Naik pada $x > 2$
- E. Memotong sumbu XX di titik $(1,0)$ dan $(3,0)$

50. Sebuah apartemen mempunyai 6 lantai. Salah satu lantai memiliki 3 unit. Lima lantai lainnya masing-masing mempunyai 4 unit. Jika A= tiga kali jumlah bangunan dan B= jumlah unit di dalam bangunan, maka ...

- A. A lebih besar daripada B
- B. A lebih kecil daripada B
- C. A sama dengan B
- D. $2A$ sama dengan B
- E. Hubungan antara A dan B tidak dapat ditentukan

51. Luas daerah antara kurva $y = (x + 1)^3$, garis $y = 1$, $x = -1$,

dan garis $x = 2$ dapat dinyatakan sebagai ...

- A. $\int_{-1}^2 (x+1)^3 dx - \int_{-1}^2 dx$
- B. $\int_{-1}^2 (x+1)^3 dx + \int_{-1}^2 dx$
- C. $\int_{-1}^0 dx - \int_0^2 dx - \int_{-1}^0 (x+1)^3 dx + \int_0^2 (x+1)^3 dx$
- D. $\int_{-1}^0 dx - \int_0^2 dx + \int_{-1}^0 (x+1)^3 dx - \int_0^2 (x+1)^3 dx$
- E. $\int_{-1}^2 dx - \int_{-1}^0 (x+1)^3 dx + \int_0^2 (x+1)^3 dx$

52. Hasil dari $\int x\sqrt{4x+1} dx$ adalah ...

- A. $-\frac{1}{60}(6x-1)(4x+1)^{\frac{3}{2}} + C$
- B. $\frac{1}{60}(6x-1)(4x+1)^{\frac{3}{2}} + C$
- C. $-\frac{4}{60}(3x+2)(4x+1)^{\frac{3}{2}} + C$
- D. $\frac{4}{60}(3x+2)(4x+1)^{\frac{3}{2}} + C$
- E. $\frac{1}{60}(3x+2)(4x+1)^{\frac{3}{2}} + C$

53. Empat orang kakak beradik mengajak sahabatnya yang baru dating dari luar kota menonton film horror di Bioskop X. Akhmad tidak mau duduk bersebelahan dengan perempuan yang bukan saudaranya. Tetapi dia juga tidak mau duduk di posisi paling pinggir. Aji hanya mau duduk bersebelahan dengan Bima. Silvi tidak mau duduk bersebelahan dengan Bima karena selalu mengganggu. Shinta tidak mau duduk di samping Aji, karena diam-diam Aji suka dengan Shinta, Aji selalu menggodanya. Posisi duduk di bioskop yang paling tepat adalah ...

- A. Shinta, Akhmad, Aji, Bima, Silvi
- B. Silvi, Akhmad, Aji, Bima, Shinta
- C. Silvi, Aji, Akhmad, Bima, Shinta
- D. Silvi, Bima, Aji, Akhmad, Shinta
- E. Silvi, Akhmad, Bima, Aji, Shinta

54. Nilai x yang menyebabkan pernyataan "jika $x^2 + x = 6$ maka $x^2 + 3x < 9$ ", bernilai salah adalah ...

- A. -2
- B. -3
- C. 2
- D. 3
- E. 6

Soal nomor 55-56 berdasarkan bacaan berikut:

Pembelian mesin produksi bagi sebuah perusahaan adalah suatu usaha untuk etao menjaga kualitas produknya. Perusahaan jamu Cap "Unyil" yang berdiri tahun 1997, juga melakukan hal tersebut. Perusahaan tersebut membeli mesin produksi setiap tahun, sebanyak 2 untuk tahun genap dan 3 untuk tahun ganjil. Setelah 4 tahun, semua mesin produksi sudah tergantikan dengan yang baru, dan diketahui fungsi jumlah produk cacat per tahun adalah seperenam dari usia mesin produksi.

55. Banyaknya mesin produksi pada saat perusahaan tersebut berdiri adalah ...

- A. 10
- B. 15
- C. 20
- D. 25
- E. 30

56. Banyaknya produk cacat per tahun yang dihasilkan dari 4 mesin yang berusia pakai 12 tahun dan 15 mesin yang berusia pakai 4 tahun adalah ...

- A. 4
- B. 8
- C. 12
- D. 18
- E. 60

Soal nomor 57-58 berdasarkan bacaan berikut:

Maira memiliki kebiasaan memaki baju berwarna berbeda dalam jangka waktu satu minggu dengan aturan main sebagai berikut :

- Salah satu hari ia memakai baju putih
- Baju ungu dipakai dua hari setelah baju hijau
- Hari Selasa Maira tidak memakai baju biru
- Maira memakai baju kuning pada saat ia sedang senang
- Pada hari di awal minggu ia mengenakan baju hijau
- Maira mendapatkan hadiah special dari kakanya pada hari Kamis.
- Baju pink dipakai dua hari setelah baju kuning
- Pada hari sebelum Senin, Maira memakai baju merah

57. Pada hari Jum'at, Maira mengenakan baju berwarna...

- A. Biru
- B. Kuning
- C. Pink
- D. Merah
- E. Putih

58. Maira mengenakan baju ngu pada hari ...

60. Semester tercepat yang dapat digunakan oleh mahasiswa untuk mengambil mata kuliah F adalah semester ...

- A. Rabu
- B. Senin
- C. Jum'at
- D. Minggu
- E. Sabtu

Soal nomor 59-60 berdasarkan bacaan berikut:

Setiap mahasiswa di perguruan tinggi ABC harus mengambil 8 mata kuliah wajib, yaitu F, G, H, J, K, L, M, dan N. Seluruh mahasiswa mengambil satu mata kuliah secara berurutan setiap semesternya, dan tidak ada mata kuliah yang diulang. Jadwal pengambilan kedelapan mata kuliah tersebut dibatasi oleh syarat-syarat sebagai berikut:

- N selalu diambil di semester pertama
- F harus diambil segera setelah mengambil mata kuliah G
- H harus diambil sebelum mengambil mata kuliah F
- J dan M harus dipisahkan oleh dua semester yang berurutan

59. Urutan jadwal berikut yang memenuhi persyaratan-persyaratan di atas untuk mahasiswa semester dua hingga semester delapan adalah ...

- A. J,H,G,F,M,K,L
- B. J,H,F,M,K,L,G
- C. G,J,F,H,M,K,L
- D. M,H,L,J,G,F,K
- E. M,K,L,J,G,F,H

- A. Dua
- B. Tiga
- C. Empat
- D. Lima
- E. Enam

fisher education

Soal Matematika USM STIS 2014

Waktu : 90 Menit

Petunjuk

- Di bawah setiap soal dicantumkan 5 kemungkinan jawaban masing masing diberi kode A, B, C, D atau E. Gunakan pensil 2B untuk menghitamkan lingkaran yang berisi kode jawaban yang saudara anggap benar pada lembar jawaban computer (LJK)
- Nilai Jawaban tiap soal adalah :
2 untuk jawaban benar
0 untuk tidak ada jawaban
-1 untuk jawaban salah
- Mengganti jawaban dilakukan dengan cara melingkari kode jawaban baru yang dipilih kemudian bubuhkan tanda silang di dalam lingkaran jawaban sebelumnya.
- Lembar jawaban tidak boleh kotor dan terlipat
- Hanya lembar jawaban yang dikumpulkan, sedangkan soal bisa dibawa pulang.

Selamat Mengerjakan

Sebagaimana sejarah mengajarkan, masa depan bukan untuk mereka yang malas-malasan

1. Banyaknya bilangan bulat dari 1 samapai 47 yang habis dibagi oleh 3 atau 5 adalah ...
 - A. 6
 - B. 9
 - C. 15
 - D. 21
 - E. 24
2. Bentuk sederhana dari $\frac{\sqrt{15}}{\sqrt{16}-\sqrt{6}}$ adalah...
 - A. $\frac{5}{4}\sqrt{10} + \frac{3}{4}\sqrt{6}$
 - B. $\frac{5}{4}\sqrt{6} - \frac{3}{4}\sqrt{10}$
 - C. $\frac{5}{4}\sqrt{6} + \frac{3}{4}\sqrt{10}$
 - D. $\frac{3}{4}\sqrt{10} - \frac{5}{4}\sqrt{10}$
 - E. $\frac{3}{4}\sqrt{10} - \frac{5}{4}\sqrt{6}$
3. $\frac{(2^{n+2})^2 - 2^2 \cdot 2^{2n}}{2^{n+2} \cdot 2^n} =$
 - A. 0
 - B. 1
 - C. 2
 - D. 3
 - E. 4
4. Perbandingan usia Ani dan Budi adalah 4:5. Perbandingan usia Ani dan Cipi adalah 1:3. Perbandingan usia Dudi dan Cipi 2:3. Perbandingan usia Dudi dan Erni adalah 1:2. Jika usia Erni 16 tahun maka usia Ani adalah ... tahun.
 - A. 4
 - B. 8
 - C. 10
 - D. 12
 - E. 16
5. Himpunan penyelesaian $9^{6x+5} < 243^{x^2-5x+14}$ adalah...
 - A. $x < -5$ atau $x > -\frac{12}{5}$
 - B. $x < -\frac{12}{5}$ atau $x > -5$
 - C. $12/5 < x < 5$
 - D. $-5 < x < -\frac{12}{5}$
 - E. $-5 < x < 12/5$
6. Diketahui himpunan $A = \{x \mid x \text{ adalah bilangan prima } < 91\}$ dan $B = \{x \mid x \text{ adalah bilangan ganjil } < 10\}$, maka elemen $A-B$ adalah...
 - A. 1
 - B. 2
 - C. 37
 - D. 53
 - E. 91
7. Diketahui kejadian A dan B adalah dua kejadian saling bebas. Jika $P(A) = 1/3$ dan $P(A^C \cup B^C) = 7/9$ maka $P(A^C \cap B^C)$ adalah...
 - A. 2/9
 - B. 4/9
 - C. 5/9
 - D. 1/3
 - E. 2/3

8. Dari 500 siswa yang diterima di STIS diketahui 297 siswa berminat untuk masuk ke Jurusan Stastistik, 60 siswa berminat di Jurusan Statistika dan Komputasi Statistik, sedangkan 3 diantaranya tidak berminta di kedua-duanya. Maka, proporsi siswa yang tidak berminat masuk Jurusan Komputasi Statistik adalah...
- A. $5/2$
 B. $7/25$
 C. $9/25$
 D. $10/25$
 E. $12/25$
9. Keluarga besar Kusumo Projo terbentuk dari berbagai macam daerah di antaranya Jawa, Sunda, dan Padang. Hal ini ternyata memengaruhi selera makan mereka di mana 18 orang menyukai masakan Padang , 15 orang menyukai masakan Sunda, 23 orang menyukai masakan Jawa. Empat orang menyukai semua masakan. Ada 1 orang yang hanya menyukai masakan Jawa dan Sunda, 2 orang hanya menyukai masakan Padang dan Sunda. Jika jumlah keluarga besar Kusumo Projo ada 40 orang dan setiap orang menyukai salah satu dari ketiga jenis tersebut, maka yang menyukai masakan Jawa dan Padang adalah...
- A. 5
 B. 7
 C. 9
 D. 10
 E. 13
10. Tiga bilangan membentuk barisan aritmatika. Jika suku kedua dikurangi 2 maka terbentuk suatu barisan geometri dengan hasil kali ketiga bilangan tersebut adalah 27. Jumlah ketiga bilangan barisan aritmatika tersebut adalah...
- A. 8
 B. 10
 C. 12
 D. 15
 E. 18
11. Jika $A = \begin{bmatrix} x & 3 \\ x-1 & 2x-1 \end{bmatrix}$ dan $\det A = 27$ maka jumlah semua nilai x yang memenuhi adalah...
- A. -3
 B. -1
 C. 1
 D. 2
 E. 4
12. Jika $A^{-1} = \begin{bmatrix} -5 & 3 \\ 2 & -1 \end{bmatrix}$ dan $B = \begin{bmatrix} 2 & 4 \\ 3 & 5 \end{bmatrix}$, maka nilai dari $\det (\frac{1}{2}ABt)$ adalah...
- A. -1
 B. $-\frac{1}{2}$
 C. $\frac{1}{2}$

- D. 1
E. 2

13. Diketahui $\begin{bmatrix} 8p & 4 \\ 16q & 9r \end{bmatrix} - \begin{bmatrix} p & -6 \\ 2q & 5r \end{bmatrix} = \begin{bmatrix} 1 & 2 \\ -2 & 3 \end{bmatrix} - \begin{bmatrix} r & p \\ 3r & 2p \end{bmatrix}$ Maka nilai dari $p+2q+3r$ adalah ...

- A. 5
B. 6
C. 8
D. 9
E. 10

14. Jika diketahui matriks $A = \begin{bmatrix} 4 & 7 \\ 4 & 9 \end{bmatrix}$ dan D adalah $|A^{-1}|$, maka nilai $2D$ adalah...

- A. $1/8$
B. $1/4$
C. $1/2$
D. 1
E. 2

15. Jika diketahui $|\vec{a}| = \sqrt{6}, (\vec{a} - \vec{b}) \cdot (\vec{a} + \vec{b}) = 3$, maka besar sudut antara \vec{a} dan \vec{b} adalah...

- A. $\frac{\pi}{3}$
B. $\frac{\pi}{4}$
C. $\frac{\pi}{6}$
D. $\frac{\pi}{2}$
E. $\frac{2\pi}{3}$

16. Diketahui fungsi $f(x) = 2x^2 - 5x + 2$ dan jika $f(a+3) = 27$, maka $\frac{1}{2}a^2 + 3a + 3 =$

- A. $-\frac{13}{8}$
B. $-\frac{11}{8}$
C. $13/8$
D. $11/8$
E. $22/8$

17. Jika grafik fungsi $f(x) = x^2 - px + 5$ menyinggung garis $1 - 2x - y = 0$ maka nilai p yang memenuhi adalah...

- A. -2
B. -4
C. -6
D. 2
E. 4

18. ${}^b\log \frac{1}{a} \cdot {}^c\log \frac{1}{b^2} \cdot {}^a\log \frac{1}{c^3} =$

- A. $-6 \log abc$
B. -1
C. -3
D. -6

19. Jika $(f \circ g)(x) = 4x^2 + 8x - 3$ dan $g^{-1}(x) = \frac{x}{2} - 2$, maka $f^{-1}(x) =$

- A. $x^2 - 4x - 3$
B. $2 + \sqrt{x - 7}$
C. $2 + \sqrt{x + 7}$
D. $2 + \sqrt{x + 1}$
E. $2 + \sqrt{x - 1}$

20. Harga tiket masuk ke ruangan pameran buku untuk pelajar Rp5.000,00 dan untuk umum Rp10.000,00. Pada hari Minggu terjual 600 tiket dengan hasil penjualan Rp4.250.000,00. Banyaknya tiket masuk untuk pelajar dan umum yang terjual masing-masing adalah...

- A. 150 dan 450
- B. 250 dan 350
- C. 350 dan 450
- D. 450 dan 150
- E. 300 dan 300

21. Diketahui sebuah persamaan yang dinyatakan sebagai $x = a + bx + cy$ dan diketahui masing-masing nilai (x,y,z) adalah $(2,5,3)$, $(7,8,12)$ dan $(0,0,7)$ maka nilai $a+b+c$ adalah...

- A. 2
- B. 7
- C. 8
- D. 9
- E. 12

22. Suatu perusahaan memproduksi barang dengan 2 model yang dikerjakan dengan 2 mesin yaitu mesin A dan mesin B. Produk model I dikerjakan oleh mesin A selama 2 jam dan mesin B selama 1 jam. Produk model II dikerjakan oleh mesin A selama 1 jam dan mesin B selama 5 jam. Waktu kerja mesin A dan B berturut-turut

adalah 14 jam per hari dan 15 jam per hari. Keuntungan penjualan produk model I sebesar Rp50.000,00 per unit dan model II Rp40.000,00 per unit. Keuntungan maksimum per hari yang dapat diperoleh perusahaan tersebut adalah...

- A. Rp150.000,00
- B. Rp250.000,00
- C. Rp300.000,00
- D. Rp330.000,00
- E. Rp360.000,00

23. Jika $x^3 - 4x^2 - 11x + a$ habis dibagi $(x - 5)$, maka juga habis dibagi...

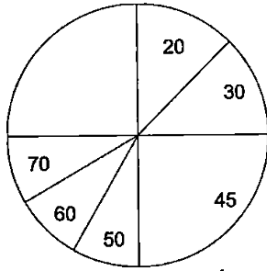
- A. $x+1$
- B. $x+2$
- C. $x+3$
- D. $x-1$
- E. $x-3$

24. Luas segienam beraturan yang kelilingnya 48 cm adalah...

- A. $16\sqrt{3}$
- B. $32\sqrt{3}$
- C. $48\sqrt{3}$
- D. $64\sqrt{3}$
- E. $96\sqrt{3}$

25. Pada persegi ABCD, dibuat $\frac{1}{4}$ lingkaran dengan pusat titik C, dengan busur EF. Besar sudut OFD adalah...

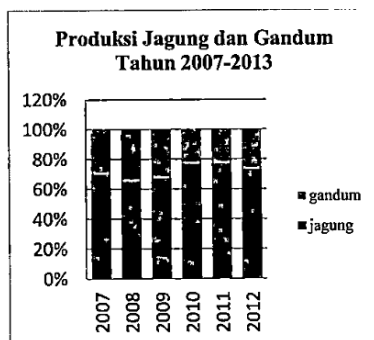
- A. 60°
 B. 67.5°
 C. 75°
 D. 112.5°
 E. 135°
26. Diketahui lingkaran $x^2 + y^2 + 8x + 6y + 9 = 0$ mempunyai jari-jari 4 dan menyinggung sumbu Y. Maka pusat lingkaran tersebut adalah...
- A. (4,-6)
 B. (-4,6)
 C. (-4,-6)
 D. (-4,3)
 E. (4,-3)
27. Siska telah mengikuti tes sebanyak n kali dan memperoleh nilai rata-rata sebesar 80. Agar nilai rata-ratanya menjadi 82, maka nilai yang harus diperoleh Siska pada tes selanjutnya adalah...
- A. $n + 80$
 B. $n + 82$
 C. $n + 84$
 D. $2n + 80$
 E. $2n + 82$
28. Grafik dibawah ini menunjukkan hasil survey makanan favorit terhadap remaja. Persentase responden yang menyukai pizza adalah...
- A. 20%
 B. 24%
- C. 25%
 D. 30%
 E. 60%
29. Jika jangkauan (range) dari data terurut : $x - 1, 2x - 1, 4x - 1, 5x - 3, 4x - 3, 7x + 3$ adalah 16, maka mediannya adalah...
- A. 6.5
 B. 7
 C. 7.5
 D. 8
 E. 8.5
30. Rata-rata modal awal dari usaha di sector informal pada Kabupaten LT dan Kabupaten LS adalah sebesar 3.35 juta rupiah. Jika rata-rata modal awal pada Kabupaten LS yang terdiri dari 42 jenis usaha adalah 3.5 juta rupiah dan Kabupaten LT terdiri dari 38 jenis usaha, maka rata-rata modal awalnya adalah...
- A. 3 juta rupiah
 B. 3.12 juta rupiah
 C. 3.18 juta rupiah
 D. 3.21 juta rupiah
 E. 3.26 juta rupiah
31. Data kategori upah (dalam ribuan rupiah) per minggu buruh di suatu pabrik disajikan dalam diagram lingkaran berikut ini:



Jika ternyata rata-rata upah per minggu adalah Rp100.000,00 maka bagian yang diarsir menyatakan banyaknya buruh yang menerima upah perhari sebesar...

- A. Rp 80.000,00
- B. Rp145.000,00
- C. Rp 175.000,00
- D. Rp 220.000,00
- E. Rp 270.000,00

32. Pada gambar berikut ini menyajikan presentase produksi jagung dan gandum di suatu wilayah:



Pernyataan yang benar untuk modus produksi jagung dan median produksi gandum terdapat pada...

- A. tahun 2010 dan tahun 2007
- B. tahun 2010 dan tahun 2011
- C. tahun 2011 dan tahun 2007

- D. tahun 2011 dan tahun 2010
- E. tahun 2011 dan tahun 2012

33. Dalam suatu pertandingan persahabatan seorang pemain sepakbola memperoleh 3 kali kesempatan untuk melakukan tendangan pinalti yang dijaga oleh penjaga gawang dari klub sepakbola ternama. Peluang pemain sepakbola tersebut membuat gol dalam sekali tendangan adalah 0.6, maka persentase untuk membuat 2 gol adalah...

- A. 9.6%
- B. 24%
- C. 36%
- D. 43.2%
- E. 72%

34. $x + y + z = 3$ dan x, y, z adalah bilangan cacah. Banyaknya penyelesaian persamaan tersebut adalah...

- A. 9
- B. 10
- C. 15
- D. 20
- E. 32

35. Jika C_r^n menyatakan kombinasi r elemen dari n elemen dan $C_3^n = 2n$, maka $C_3^{2n} =$

- A. 336

- B. 312
- C. 288
- D. 120
- E. 56

36. Pada ruang tunggu suatu Rumah Sakit Umum Daerah terdapat 40 kursi yang tersusun dalam 5 baris dengan setiap baris terdiri 8 kursi. Jika seorang ibu dan anaknya duduk di ruang tersebut, maka banyaknya cara agar duduk dalam satu baris adalah...

- A. 80
- B. 100
- C. 140
- D. 160
- E. 280

37. Diketahui bahwa pengangguran terdidik tamatan S1 adalah separuh dari tamatan S1 yang bekerja, dan 75% yang bekerja tersebut adalah perempuan. Sedangkan perbandingan tamatan S1 yang berjenis kelamin perempuan dengan laki-laki adalah 3:2. Jika jumlah tamatan S1 ada sebanyak 150 maka kemungkinan bahwa diantara tamatan S1 yang berjenis kelamin perempuan ternyata menganggur adalah...

- A. 1/10
- B. 3/10
- C. 1/6

- D. 3/5
- E. 1/3

$$38. \lim_{x \rightarrow 5} \frac{(\sqrt{x+4}) - (\sqrt{14-x})}{x^2 - 2x - 15} =$$

- A. 1/24
- B. tidak terdefinisi
- C. 0
- D. 1
- E. 1/5

$$39. \text{Nilai dari } \lim_{x \rightarrow 3} \left(\frac{2}{x-3} - \frac{12}{x^2-9} \right) =$$

- A. 1/6
- B. 3/10
- C. 1
- D. 3
- E. 6

$$40. \lim_{c \rightarrow 0} \frac{\frac{1}{y+c} - \frac{1}{y}}{c} =$$

- A. $-1/y$
- B. $1/y$
- C. $-1/y^2$
- D. $1/y^2$
- E. y

$$41. \text{Jika } f\left(2 + \frac{1}{3}x\right) = 4 - 2x + x^2, \text{ maka } f'(1) = \dots$$

- A. -24
- B. -8
- C. 0
- D. 3
- E. 19

42. Jika diketahui $f(x) = 3x^4 + 4x^3 - x^2 + 2x + 5$, maka $\lim_{b \rightarrow 0} \left(\frac{f(a+b) - f(a)}{b} \right)$ adalah

- A. $2 - 2x + 12x^2 + 12x^3$
- B. $2 + 2b + 12b^2 - 12b^3$
- C. $2 - 2b + 12b^2 + 12b^3$
- D. $2 - 2a + 12a^2 + 12a^3$
- E. $2 + 2a + 2a^2 - 12a^3$

43. Jika diketahui $f(x)$ Selembar karton berbentuk persegi panjang dengan lebar 4 dm dan panjang 8 dm akan dibuat kotak tanpa tutup. Pada keempat pojok karton dipotong persegi dengan sisi n cm. Ukuran n tersebut agar volume maksimum adalah...

- A. $\frac{2+2\sqrt{3}}{6}$
- B. $\frac{2-2\sqrt{3}}{6}$
- C. $2 + \frac{2\sqrt{3}}{3}$
- D. $2 - \frac{2\sqrt{3}}{3}$
- E. $2 + 2\sqrt{3}$

44. Luas daerah kuadran I yang dibatasi oleh $y = 4 - x^2$, $y = 3x$ dan $y = 0$ dapat dinyatakan sebagai...

- A. $\int_0^1 (4 - x^2 - 3x) dx$
- B. $\int_0^2 (4 - x^2 - 3x) dx$
- C. $\int_0^2 (3x - 4 + x^2) dx$
- D. $\int_0^1 3x dx - \int_1^2 (4 - x^2) dx$
- E. $\int_0^1 3x dx - \int_1^2 (x^2 - 4) dx$

45. Jika R adalah daerah yang dibatasi oleh kurva $y = x^3$, garis $y = 1$, $x = 0$ dan $x = 2$, maka luas daerah R adalah...

- A. -2
- B. 2
- C. $5/2$
- D. $7/2$
- E. $11/2$

46. Jika $\int_a^{3a} f(x) dx = k$, maka $\int_a^{2a} f(5a - 2x) dx =$

- A. $-2k$
- B. $-k/2$
- C. $k/2$
- D. k
- E. $2k$

47. $\int_{-1}^3 \frac{x}{5-x^2} dx$ adalah

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

48. Penarikan kesimpulan yang sah dari argument berikut ini adalah :

$\sim p \rightarrow \sim q$
 $\sim q \rightarrow r$
 ...

- A. $p \wedge r$

- B. $p \vee r$
- C. $\sim p \wedge r$
- D. $p \rightarrow r$
- E. $p \rightarrow \sim r$

49. Ingkaran dari "Beberapa jenis ikan tidak bernafas dengan insang" adalah...

- A. Beberapa jenis ikan bernafas dengan insang
- B. Semua jenis ikan tidak bernafas dengan insang
- C. Semua jenis ikan bernafas dengan insang
- D. Ada jenis ikan yang tidak bernafas dengan insang
- E. Ada jenis ikan yang bernafas dengan insang

50. Rina berbohong pada hari Senin, Selasa, dan Rabu, selain itu tidak. Tomi berbohong hanya pada hari Kamis, Jumat, dan Sabtu. Pada suatu hari Rina berkata: "Kemarin adalah hari dimana saya berbohong" dan Tomi menimpali "Kemarin juga merupakan hari saya berbohong." Mereka berdua dapat menyatakan hal itu pada hari...

- A. Senin
- B. Selasa
- C. Rabu
- D. Kamis
- E. Jumat

51. Bilangan yang bila dibagi Sembilan bersisa 2 adalah...

- A. 983451
- B. 124678
- C. 345465
- D. 967734
- E. 748154

52. Jika 10% dari s adalah 0.5p dan 5% dari s adalah q, maka perbandingan nilai (p-q) dan s adalah...

- A. 5 : 100
- B. 12.5 : 100
- C. 15 : 100
- D. 17.5 : 100
- E. 20 : 100

53. Jika $0 < ab < 1$ dan $a > 0$, maka ungkapan berikut yang pasti benar adalah...

- A. $b < 1$
- B. $b < a$
- C. $0 < b < 1/a$
- D. $1/a < b < 1$
- E. $0 < b < 1$

54. 1 dari 125 adalah ...persen

- A. 0.8%
- B. 1/125%
- C. 8%
- D. 7.5%
- E. 8.5%

55. $\sqrt{\left(3 + \frac{2}{3}\right) + \left(\frac{1}{3} - 3\right)} =$

- A. 1/15
- B. 1/3
- C. $\frac{1}{3}\sqrt{3}$
- D. 1
- E. 3

56. Diketahui jarak antara kota M dengan kota N sejauh 301 km dan tingkat konsumsi avtur untuk pesawat adalah 14 kg/km, maka banyak avtur yang dibutuhkan untuk menempuh perjalanan tersebut adalah...

- A. 18.5 kg
- B. 19.5 kg
- C. 20.5 kg
- D. 21.5 kg
- E. 22.5 kg

57. Gisel, Mora dan Tora naik bus yang berhenti di enam tempat berbeda yaitu TA, TB, TC, TD, TE, dan TF. Masing-masing orang turun di tempat yang berbeda dan tidak naik bus itu kembali. Informasi lainnya yang berkaitan dengan aktivitas ini adalah sebagai berikut: apabila ada yang turun di TB, maka tidak ada yang turun di TD. Satu diantara mereka turun di TA. Mora tidak turun di TF. Tora tidak turun di TB maupun TF. Baik Gisel, Mora, maupun Tora masing-masing turun di...

- A. TA, TB, TE
- B. TA, TB, TD
- C. TC, TA, TE
- D. TD, TF, TE
- E. tidak ada pilihan jawaban yang benar

58. Berdasarkan informasi soal no.57, bila Gisel turun di TE, maka Tora mungkin turun di...

- A. TB
- B. TC
- C. TD
- D. TF
- E. Pilihan jawaban A dan C benar

59. Jika $2p = 3q$, $q = 4r$, $3r = 2s$, dan $2s = t$, maka...

- A. $p = 2t$
- B. $2p = t$
- C. $p = 2s$
- D. $2p = s$
- E. $q = 2t$

60. Berat badan Raihan 2 kali Irfan. Berat badan Irfan adalah 60% berat badan Naufal. Brian mempunyai berat badan 50% berat badan Faiz. Berat badan Faiz 190% berat badan Raihan. Jika berat badan Naufal 25 kg, maka berat badan Brian adalah...kg

- A. 28
- B. 28.5

- C. 29
- D. 29.5

fisher education

Soal Matematika USM STIS 2015

Waktu : 90 Menit

Petunjuk

- Di bawah setiap soal dicantumkan 5 kemungkinan jawaban masing masing diberi kode A, B, C, D atau E. Gunakan pensil 2B untuk menghitamkan lingkaran yang berisi kode jawaban yang saudara anggap benar pada lembar jawaban computer (LJK)
- Nilai Jawaban tiap soal adalah :
2 untuk jawaban benar
0 untuk tidak ada jawaban
-1 untuk jawaban salah
- Mengganti jawaban dilakukan dengan cara melingkari kode jawaban baru yang dipilih kemudian bubuhkan tanda silang di dalam lingkaran jawaban sebelumnya.
- Lembar jawaban tidak boleh kotor dan terlipat
- Hanya lembar jawaban yang dikumpulkan, sedangkan soal bisa dibawa pulang.

Selamat Mengerjakan

Cita-cita pada akhirnya harus diputuskan, bahkan terkadang dipaksakan. Kemudian kerjakan, hai anak muda!

1. Jika $2 < x < 5$ dan $3 < y < 7$, maka bilangan bulat terbesar dari $x + y$ adalah...

A. 8
B. 9
C. 10
D. 11
E. 12

2. Hasil dari $8\frac{1}{3} : 6,25 + \frac{10}{3} \times 2\frac{10}{25}$ adalah ...

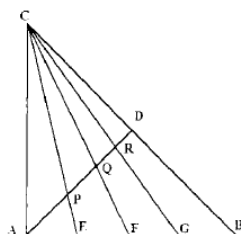
A. 4
B. 8
C. 8,33
D. 8,67
E. 9,33

3. Jika $(7^a)(7^b) = \frac{7^c}{7^d}$. nilai d dinyatakan dalam a, b, c adalah..

A. $\frac{c}{ab}$
B. $c - a - b$
C. $a + b - c$
D. $c - ab$
E. $\frac{c}{a+b}$

4. Segitiga siku-siku di A dan D pertengahan BC. Titik F membagi dua sama panjang sisi AB, sedangkan titik E dan G berturut-turut membagi AF dan FB menjadi dua bagian yang sama panjang. Garis AD memotong garis-garis hubung CE, CF, dan CG berturut-turut di titik P, Q, dan R. Nilai PQ : PR adalah ...

A. 7 : 12
B. 5 : 7



C. 5 : 12
D. 2 : 8
E. 5 : 8

5. Himpunan penyelesaian $\frac{(x-1)(x+1)}{(x-1)(x+2)} \geq 0$ adalah...

A. $\{x | -2 < x < -1\}$
B. $\{x | x \leq -2\} \cup \{x | x \geq -1\}$
C. $\{x | -2 < x < -1\} \cup \{x | x > 1\}$
D. $\{x | x < -2\} \cup \{x | -1 \leq x < 1\} \cup \{x | x > 1\}$
E. $\{x | x < -2\} \cup \{x | x \geq -1\} \cup \{x | x \neq 1\}$

6. Diketahui 25 siswa lulusan SMA mengikuti ujian masuk perguruan tinggi. Lima belas Orang mendaftar UI, 5 orang mendaftar ITB, 10 orang mendaftar STIS. Yang mendaftar ITB juga mendaftar STIS, tapi tidak mendaftar UI karena ujian dilaksanakan pada waktu yang sama. Jika yang mendaftar UI dan STIS sebanyak 4 orang, maka banyaknya siswa yang tidak mengikuti ujian ketiga perguruan tinggi tersebut adalah...

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

7. Jika $A = \{\text{kelipatan 3 yang kurang dari 25}\}$ dan $B = \{\text{kelipatan 4 yang kurang dari 25}\}$. Dan semestanya adalah

himpunan bilangan bulat, maka $A^c \cap B = \dots$

- A. {12}
- B. {12,24}
- C. {4, 8, 16, 20}
- D. {3, 6, 9, 12, 15, 18, 21, 24}
- E. {3, 4, 6, 8, 9, 12, 15, 16, 18, 20, 21, 24}

8. Suatu segitiga siku-siku, panjang masing-masing sisinya membentuk barisan aritmatika. Jika panjang sisi terpendek segitiga siku-siku adalah 24 cm, maka panjang sisi miringnya adalah ... cm

- A. 28
- B. 32
- C. 36
- D. 40
- E. 44

9. Diketahui vektor-vektor

$$\vec{a} = \begin{pmatrix} 3 \\ 1 \\ -1 \end{pmatrix}, \vec{b} = \begin{pmatrix} -1 \\ 2 \\ 1 \end{pmatrix}, \vec{c} = \begin{pmatrix} 2 \\ 3 \\ 1 \\ 3 \\ 0 \end{pmatrix}.$$

pernyataan berikut yang benar adalah...

- A. \vec{a} dan \vec{b} membentuk sudut tegak lurus
- B. \vec{a} dan \vec{b} membentuk sudut lancip
- C. \vec{a} dan \vec{c} membentuk sudut tumpul
- D. \vec{b} dan \vec{c} membentuk sudut tegak lurus
- E. \vec{b} dan \vec{c} membentuk sudut lancip

10. Diketahui $A = \begin{bmatrix} 3 & 1 \\ 2 & x \end{bmatrix}$, $B = \begin{bmatrix} 7 & y \\ -x & 1 \end{bmatrix}$, $C = \begin{bmatrix} -1 & 2 \\ 5 & 1 \end{bmatrix}$. Jika $2A - B = C$, maka $xy = \dots$

- A. -1
- B. 0
- C. 1
- D. 2
- E. 4

11. Diketahui matriks $A = \begin{bmatrix} 4 & -1 \\ 2 & 1 \end{bmatrix}$.

Jika matriks $(A - k I)$ adalah matriks singular, maka nilai k yang memenuhi adalah...

- A. 2 atau 3
- B. -2 atau 3
- C. 2 atau -3
- D. -2 atau -3
- E. -2 atau 0

12. Diketahui persegi panjang ABCD dengan $\|\vec{AC}\| = 13$, $\|\vec{BC}\| = 5$. Jika $\vec{AC} = \vec{v}$ dan $\vec{AB} = \vec{w}$, maka $\vec{v} \cdot \vec{w} = \dots$

- A. 25
- B. 60
- C. 65
- D. 144

13. Matriks yang mempunyai determinan matriks yang sama dengan determinan matriks

$$\begin{bmatrix} 1 & 0 & 1 \\ -1 & 2 & 3 \\ 2 & 0 & 4 \end{bmatrix} \text{ adalah...}$$

A. $\begin{bmatrix} 1 & -2 & 3 \\ 2 & 0 & 4 \\ 1 & 0 & 1 \end{bmatrix}$

B. $\begin{bmatrix} -1 & 2 & 3 \\ 1 & 0 & 1 \\ -2 & 0 & -4 \end{bmatrix}$

C. $\begin{bmatrix} 1 & 0 & 1 \\ 3 & 2 & -1 \\ 4 & 0 & 2 \end{bmatrix}$

D. $\begin{bmatrix} 1 & 0 & 2 \\ 3 & 1 & 4 \\ 4 & 0 & 4 \end{bmatrix}$

E. $\begin{bmatrix} 1 & 0 & 1 \\ -1 & 2 & 3 \\ 2 & 0 & 4 \end{bmatrix}$

14. Jika grafik fungsi $f(x) = x^2 + 3mx + 3m$ diatas grafik fungsi $g(x) = mx^2 + 3x$, maka ...

A. $m < 1$

B. $m < \frac{3}{7}$

C. $\frac{3}{7} < m < 1$

D. $1 < m < \frac{7}{3}$

E. $m > 1$

15. jika $f(x) = \frac{x}{a} \left[1 - \frac{b^2}{x^2} \right] + \frac{x}{b} \left[1 - \frac{a^2}{x^2} \right]$, maka $f(a+b)$ adalah...

A. -3

B. 3

C. $\frac{b}{a+b}$

D. $\frac{a}{a+b}$

E. $\frac{a-b}{a}$

16. Jika diketahui $x = \log a$, $y = \log b$ dan $z = \log c$. maka bentuk sederhana dari $\log \left(\frac{a}{b^2} \sqrt{c} \right)$ dalam x , y , dan z adalah ...

A. $\log \left(\frac{x}{y^2} \sqrt{z} \right)$

B. $\log x - \log y^2 + \log \sqrt{z}$

C. $\frac{x}{y^2} \sqrt{z}$

D. $x - 2y + \frac{1}{2}z$

E. $x - y^2 + \sqrt{z}$

17. Penyelesaian persamaan $6^{3+2x} - 15(6^{1+x}) + 6 = 0$ adalah...

A. $1 - \log_2 6$

B. $-1 - \log_2 6$

C. $1 + \log_2 6$

D. $-1 - \log_6 2$

E. $1 + \log_6 2$

18. Diketahui $f(x) = \frac{x^2-1}{x+1}$. Jika $f^{-1}(x)$ adalah invers dari fungsi $f(x)$, maka $f^{-1}(x) = \dots$

A. $x+1$

B. $x-1$

C. $x+1, x \neq -1$

D. $x-1, x \neq -1$

E. $x+1, x \neq 1$

19. diketahui $f(x) = x^2 - x + 3$. jika $(g \circ f)(x) = 3x^2 - 3x + 4$, maka $g(2-x)$ adalah...

A. $1 - 3x$

B. $-1 + 3x$

C. $1 + 3x$

D. $11 + 3x$

E. $-11 + 3x$

20. Dalam sebuah toko buah-buahan seorang pembeli membayar parcel yang terdiri dari $\frac{1}{2}$ kg anggur dan 1 kg jeruk dengan harga Rp. 100.000,-. Di toko yang sama sebuah parcel yang berisi $\frac{3}{4}$ kg anggur dan $\frac{3}{4}$ kg jeruk dihargai Rp. 120.000,-. Harga sebuah parcel yang

terdiri dari $\frac{2}{3}$ kg anggur dan $1\frac{1}{2}$ kg jeruk adalah...

- A. Rp. 60.000,-
- B. Rp. 80.000,-
- C. Rp. 100.000,-
- D. Rp. 120.000,-
- E. Rp. 140.000,-

21. Diketahui

persamaan:

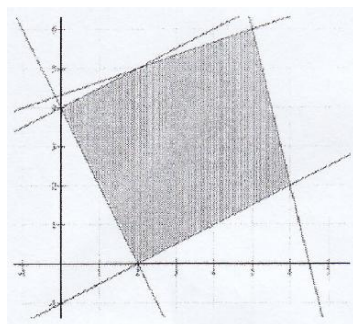
$$\begin{cases} (x-1)(y-2) = 12 \\ (y-2)(z-3) = 20 \\ (z-3)(x-1) = 15 \end{cases}, \text{ dan}$$

$x, y, z > 0$. Nilai $\frac{xyz}{6} = \dots$

- A. 18
- B. 24
- C. 32
- D. 48
- E. 64

22. Daerah yang diarsir seperti pada gambar di bawah ini adalah himpunan penyelesaian suatu system persamaan linier (SPL). Nilai maksimum dari SPL ini dengan fungsi objektif $2x + 5y$ adalah ...

- A. 24
- B. 29
- C. 35
- D. 40
- E. 42



23. Suku banyak $f(x)$ bila dibagi $(x-4)$ bersisa -12, bila dibagi $(x+2)$ bersisa 18. Jika $f(x)$ dibagi $x^2 - 2x - 8$, maka sisanya adalah ...

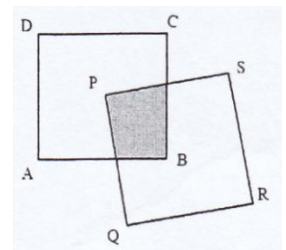
- A. $-x - 8$
- B. $-x + 16$
- C. $-5x + 18$
- D. $5x + 28$
- E. $5x - 32$

24. Diketahui $\sin \alpha + \cos \alpha = 1$ dan $b \sin \alpha - \cos \alpha = 1$, maka ab adalah ...

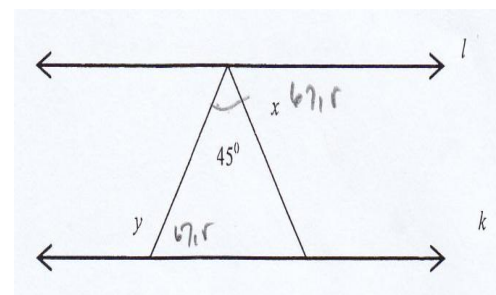
- A. -1
- B. 1
- C. $\sin^2 \alpha$
- D. $\cos^2 \alpha$
- E. $\sin \alpha \cos \alpha$

25. Bujursangkar ABCD dan PQRS berukuran sama yaitu 8 cm x 8 cm. P adalah pusat bujursangkar ABCD. Maka luas daerah yang diarsir adalah ...

- A. 16 cm^2
- B. 18 cm^2
- C. 20 cm^2
- D. 24 cm^2
- E. 32 cm^2



26. Diketahui k dan l adalah dua garis yang parallel seperti tampak pada gambar. Besar sudut $y - x$ adalah ...



- A. 0°
- B. 30°

- C. 45°
- D. 60°
- E. 90°

27. Suatu prisma segitiga sama sisi di dalamnya terdapat 3 tabung tegak yang bersinggungan dan juga menyinggung sisi-sisi prisma. Jika tinggi prisma 3 cm dan volume sebuah tabung tegak adalah $3\pi \text{ cm}^3$, maka jumlah luas sisi tegak prisma adalah ...

- A. $2 + 2\sqrt{3}$
- B. $6 + 6\sqrt{3}$
- C. $9 + 9\sqrt{3}$
- D. $12 + 12\sqrt{3}$
- E. $18 + 18\sqrt{3}$

28. Persamaan garis singgung lingkaran $x^2 + y^2 + 6x - 4y - 87 = 0$ di titik (5,8) adalah ...

- A. $4x + 3y - 44 = 0$
- B. $4x + 3y - 32 = 0$
- C. $4x + 3y - 68 = 0$
- D. $3x + 4y - 32 = 0$
- E. $3x + 4y - 68 = 0$

29. Jika nilai matematika 24 orang siswa kelas 3 SMA adalah sebagai berikut,

5	6	7	8	9	8	7	6	8	7	8	8
0	0	5	0	0	5	0	0	5	5	0	5
7	6	7	7	8	5	5	7	7	8	6	9
0	0	5	5	0	0	0	5	0	5	0	0

Maka rata-rata nilai dari 25% siswa dengan nilai terindah adalah ...

- A. 50
- B. 55

- C. 60
- D. 70
- E. 75

30. Sekumpulan data mempunyai rata-rata 14 dan jangkauan 6. Jika setiap nilai data dikurangi dengan p, kemudian hasilnya dibagi dengan q menghasilkan data baru dengan rata-rata 4 dan jangkauan 2, maka nilai p dan 1 masing-masing adalah ...

- A. 2 dan 3
- B. 3 dan 3
- C. 3 dan 4
- D. 2 dan 4
- E. 1 dan 4

31. Suatu keluarga memiliki 5 orang anak. Anak termuda berumur $\frac{1}{2}$ dari umur anak yang tertua. Sedangkan tiga anak yang lain berturut-turut, berumur lebih 2 tahun dari yang termuda, lebih 4 tahun dari yang termuda, dan kurang tiga tahun dari yang tertua. Bila rata-rata umur mereka adalah 17,4 tahun, maka umur anak ketiga adalah ... tahun

- A. 13
- B. 14
- C. 15
- D. 16
- E. 17

32. Pada hari Kamis, 20 dari 25 orang siswa di kelas IPA mengikuti ujian matematika, dan nilai rata-rata ke-20 siswa tersebut adalah 80. Lalu pada

hari Jum'at, 5 siswa lainnya mengikuti ujian matematika susulan, dan nilai rata-rata ke-5 siswa tersebut adalah 90. Rata-rata hitung untuk kelas tersebut secara keseluruhan adalah ...

- A. 72
- B. 82
- C. 85
- D. 88
- E. 92

33. Maira berencana mengikuti les tambahan matematika, bahasa inggris, dan melukis. Hari minggu Maira gunakan khusus untuk les berenang. Banyaknya cara menyusun jadwal les tambahan tersebut dalam seminggu dengan syarat dalam sehari tidak boleh lebih dari satu kali les adalah ...

- A. 20
- B. 35
- C. 120
- D. 210
- E. 840

34. Dua anggota klub sains harus dipilih untuk mewakili sekolah dalam suatu kompetisi. Empat anggota mahasiswa tingkat IV, 3 anggota mahasiswa tingkat III, 2 anggota mahasiswa tingkat II, dan 5 anggota mahasiswa tingkat I. Jika dua wakil dipilih secara acak, maka peluang bahwa pasangan akan terdiri dari satu mahasiswa tingkat I dan satu mahasiswa tingkat IV adalah ...

- A. $\frac{1}{2}$
- B. $\frac{9}{14}$
- C. $\frac{10}{91}$
- D. $\frac{14}{91}$
- E. $\frac{20}{91}$

35. Banyaknya bilangan yang terdiri dari 3 angka yang dapat dibentuk dari angka-angka 1,2,3,4, dan 5 dengan tidak ada angka yang berulang dan lebih besar dari 300 adalah ...

- A. 24
- B. 32
- C. 36
- D. 40
- E. 48

36. Diketahui $\lim_{x \rightarrow a} f(x) = L$. Pernyataan yang pasti salah adalah ...

- A. $f(x) = L$
- B. $f(x) \neq L$
- C. $x = a$
- D. $x < a$
- E. $x > a$

37. $\lim_{x \rightarrow 0} \frac{\cos 4x - 1}{x \tan 2x} = \dots$

- A. -4
- B. -2
- C. 0
- D. 2
- E. 4

38. $\lim_{x \rightarrow \infty} \sqrt{x^2 + 7x} + 3 - x = \dots$

- A. 0
- B. 3

- C. $11/2$
- D. $13/2$
- E. $+\infty$

39. Seorang pengrajin kayu membuat sebuah kotak tanpa tutup dengan alas persegi. Luas permukaan kotak $1m^2$. Agar diperoleh volume maksimum, maka tinggi kotak adalah ...

- A. $\frac{1}{4}\sqrt{3}$
- B. $\frac{3}{4}\sqrt{3}$
- C. $\frac{2}{3}\sqrt{3}$
- D. $\frac{1}{6}\sqrt{3}$
- E. $\frac{1}{4}\sqrt{\frac{1}{3}}$

40. Diketahui $(x) = \sqrt[3]{\sqrt[5]{\sqrt[3]{\sqrt[4]{\sqrt{x^{360}}}}}}$.
jika $f^n(x)$ adalah fungsi turunan kedua, maka $f^n(1)$ adalah ...

- A. $-\frac{1}{4}$
- B. $-\frac{1}{2}$
- C. 0
- D. $\frac{1}{4}$
- E. $\frac{1}{2}$

41. Grafik $h(x)$ merupakan fungsi turunan pertama $f(x)$, jika grafik $h(x)$ ditunjukkan pada gambar di bawah ini, maka $f(x)$...

- A. Mencapai maksimum di $x = 3$
- B. Mencapai minimum di $x = 1$
- C. Turun pada $1 < x < 3$
- D. Naik pada $x > 2$

E. Memotong sumbu-x di titik $(1,0)$ dan $(3,0)$

42. Nilai $\int_{-2}^2 \sqrt{4-x^2} dx$ adalah ...

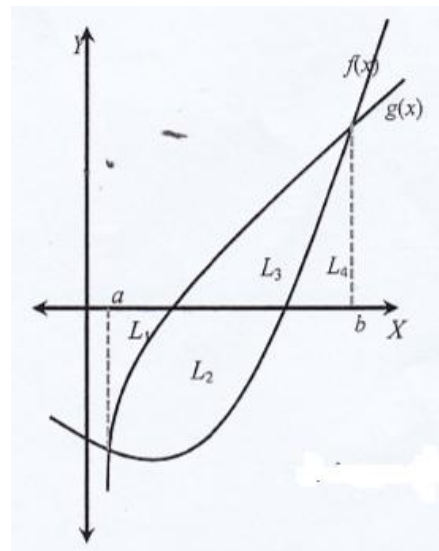
- A. 0
- B. π
- C. 2π
- D. 3π
- E. 4π

43. Jika $\frac{d}{dx}g(x) = f(x)$ dimana $f(x)$ kontinu dari a sampai b , maka $\int_a^b f(x) \cdot g(x) dx = \dots$

- A. 0
- B. $f(b) - f(a)$
- C. $g(b) - g(a)$
- D. $\frac{[f(b)]^2 - [f(a)]^2}{2}$
- E. $\frac{[g(b)]^2 - [g(a)]^2}{2}$

44. Diketahui grafik dari fungsi $f(x)$ dan $g(x)$ adalah seperti gambar dibawah ini. Jika $L = \int_a^b \{f(x) - g(x)\} dx$, maka $L = \dots$

- A. $L_1 + L_2 - L_3 - L_4$
- B. $-L_1 - L_2 + L_3 + L_4$
- C. $-L_2 + L_3$
- D. $L_2 + L_3$
- E. $-L_2 - L_3$



45. Nilai x yang menyebabkan pernyataan "jika $x^2 - x = 6$, maka $x^2 - 2x < 5$ " bernilai salah adalah ...

- A. -3
- B. -2
- C. 0
- D. 3
- E. 5

46. Diberikan premis-premis sebagai berikut :

Premis 1 : jika harga BBM naik maka ongkos transportasi naik.

Premis 2 : jika ongkos transportasi naik maka semua harga bahan pokok naik.

Ingkaran dari kesimpulan diatas adalah...

- A. Harga BBM naik dan ada harga bahan pokok tidak naik.
- B. Jika semua harga bahan pokok naik maka harga BBM naik.
- C. Ongkos transportasi naik atau ada harga bahan pokok yang naik.
- D. Jika harga BBM naik maka sebagian harga bahan pokok naik.
- E. Harga BBM tidak naik dan ada harga bahan pokok yang tidak naik.

Soal berikut untuk pertanyaan no 47-48

Setelah melakukan *study tour*, 5 orang siswa SMA diminta untuk melakukan presentasi. Lima orang siswa tersebut adalah

Adam, Boni, Citra, Dewi, dan Ema. Setiap siswa akan presentasi satu kali dengan aturan sebagai berikut,

- Citra akan maju pada urutan ketiga atau keempat.
- Dewi akan maju sebelum Citra.
- Ema akan maju tepat setelah Dewi.
- Adam akan menjadi pembicara ketiga setelah Dewi.

47. Dari urutan berikut yang memenuhi persyaratan adalah...

- A. Dewi, Boni, Citra, Adam, Ema
- B. Dewi, Boni, Citra, Ema, Adam
- C. Dewi, Ema, Citra, Adam, Boni
- D. Dewi, Boni, Adam, Citra, Ema
- E. Dewi, Ema, Adam, Citra, Boni

48. Pernyataan berikut yang mungkin benar adalah...

- A. Adam akan maju pada urutan pertama
- B. Adam akan maju pada urutan kelima
- C. Boni akan maju pada urutan kedua
- D. Boni akan maju pada urutan ketiga
- E. Ema akan maju pada urutan pertama

49. Dalam suatu barisan bilangan, $a_1 = 1, a_2 = 1$ dan suku ke- n adalah $a_n = a_{n-1} + a_{n-2}$, maka a_6 adalah ...

- A. 1
- B. 3
- C. 5
- D. 8
- E. 10

50. Sebuah persegi panjang dibagi menjadi 3 persegi panjang baru. Kemudian salah satu dari 3 persegi panjang baru tersebut dibagi lagi menjadi 3 persegi panjang, dan seterusnya, sampai sebanyak n kali pembagian. Jika $n = 100$, maka jumlah seluruh persegi panjang adalah ... buah.

- A. 191
- B. 201
- C. 203
- D. 213
- E. 241

51. Misalkan ABC dan CBA menyatakan dua bilangan tiga digit, dengan A , B , dan C dapat bernilai 0, 1, ..., 9 dan berbeda satu sama lain. Jika $ABC - CBA = 198$ dan $A > C$, maka banyak pasangan angka yang memenuhi aturan itu adalah ...

- A. 8
- B. 9
- C. 45
- D. 56
- E. 81

Soal berikut untuk pertanyaan no. 52 – 53

Raihan dan Maira setiap pergi ke sekolah diberikan uang saku oleh ibunya. Uang saku Raihan 3 kali lebih banyak dari uang

saku Maira. Jika Maira mendapatkan uang Rp. 10.000,- dari raihan, maka dia akan mempunyai uang saku 3 kali lebih banyak dari Raihan.

52. Besarnya uang saku Raihan adalah ...

- A. Rp.5.000,-
- B. Rp.7.500,-
- C. Rp.10.000,-
- D. Rp.12.500,-
- E. Rp.15.000,-

53. Besarnya uang saku yang dikeluarkan ibu setiap hari adalah ...

- A. Rp. 12.500,-
- B. Rp. 15.000,-
- C. Rp. 17.500,-
- D. Rp. 20.000,-
- E. Rp. 22.500,-

Soal berikut untuk pertanyaan no. 54-55

Siang hari pak Budi dapat membaca buku sebanyak 100 halaman dengan kecepatan 60 halaman per jam. Sementara di sore hari, ketika kondisinya mulai letih Pak Budi membaca 100 halaman buku dengan kecepatan 40 halaman per jam.

54. Rata –rata kecepatan pak Budi untuk membaca buku dalam sehari adalah ...

- A. 40 halaman per jam
- B. 48 halaman per jam

- C. 50 halaman per jam
D. 54 halaman per jam
E. 60 halaman per jam
55. Waktu yang dihabiskan pak Budi untuk membaca dalam sehari adalah ...
- A. 200 menit
B. 220 menit
C. 225 menit
D. 240 menit
E. 250 menit
56. $10^{25} - 25 = A$. Jumlah angka-angka penyusun bilangan A adalah ...
- A. 210
B. 219
C. 228
D. 275
E. 282
57. Jika n bilangan bulat positif, maka hasil dari $\left(1 - \frac{1}{2}\right)\left(1 - \frac{1}{3}\right)\left(1 - \frac{1}{4}\right) \dots \left(1 - \frac{1}{n}\right)$ adalah ...
- A. $\frac{1}{n}$
B. $\frac{n-1}{n}$
C. $\frac{1}{n+1}$
D. $\frac{2}{n(n-1)}$
E. $\frac{2}{n}$
58. Diketahui 3 sendok teh = 1 sendok makan, 16 sendok makan = 1 cangkir, 8 sendok sayur = 1 cangkir. Jika 2 sendok sayur = x sendok the, maka $x =$...
- A. 1,5
B. 6
C. 10
D. 12
E. 14
59. Seekor burung berkicau setiap 14 menit dan sebuah bel berbunyi setiap 12 menit. Jika burung dan bel berbunyi bersama-sama pada pukul 12 siang, maka mereka berbunyi bersama-sama lagi pada pukul ...
- A. 12.42
B. 13.24
C. 13.54
D. 14.24
E. 14.48
60. Sisa dari 3^{100} dibagi 5 adalah ...
- A. 0
B. 1
C. 2
D. 3
E. 4

Soal Matematika USM STIS 2016

Waktu Pengerjaan : 90 Menit

- Nilai Jawaban tiap soal adalah :
2 untuk jawaban benar
0 untuk tidak ada jawaban
-1 untuk jawaban salah

Selamat Mengerjakan

fisher education

*Yang kita tahu hanyalah setetes air,
Yang tidak kita ketahui sejumlah lautan*

- Banyaknya bilangan bulat yang memenuhi $|x| \leq 2\pi$ adalah ...
 A. 10 D. 13
 B. 11 E. Lebih dari 13
 C. 12
- Bentuk pecahan dari $0,3846846846\dots$ adalah ...
 A. $\frac{3846}{9999}$ C. $\frac{3846}{9990}$ E.
 $\frac{3847}{10000}$
 B. $\frac{3846}{10000}$ D. $\frac{3843}{9990}$
 C. $\frac{3846}{9990}$
- Jika $\frac{1}{(32)^{(a+b)}} = 16^{(a-2b)}$, maka pernyataan berikut yang benar adalah ...
 A. $b = -2a$ D. $a = b + 2$
 B. $a = -3b$ E. $a - b = 3$
 C. $b = 3a$
- Suatu tanjakan yang dilalui pergi (jalan menaik) dan pulang (jalan menurun) dibutuhkan waktu 28 menit dengan kecepatan 55 m/menit dan pulang 85 m/menit. Maka panjang tanjakan tersebut adalah ...
 A. 770 C. 1190 E.
 1870
 B. 935 D. 1510
- Diketahui pertidaksamaan $\frac{a}{b} \times c > c \times d$, dimana a, b, c dan d adalah anggota himpunan bilangan riil. Pernyataan yang paling tepat adalah ...
 A. $\frac{a}{b} > d$
 B. $a \times c > b \times c \times d$
 C. $a > b \times d$
 D. Pilihan A s.d C benar semua
 E. Pilihan A s.d C belum pasti benar
- Jika x, y dan $2x + \frac{y}{2}$ tidak sama dengan 0, maka $\left[(2x)^{-1} + \left(\frac{y}{2}\right)^{-1}\right] \left(2x + \frac{y}{2}\right)^{-1} = \dots$
 A. xy C. $\frac{1}{y}$ E. $\frac{2}{xy}$
 B. $2xy$ D. $\frac{1}{2xy}$
- Himpunan yang jumlah anggota atau elemennya berhingga adalah ...
 A. Himpunan bilangan genap
 B. Himpunan bilangan riil kurang dari 10
 C. Himpunan bilangan prima kurang dari 100
 D. Himpunan bilangan rasional yang lebih dari 0 dan kurang dari 10
 E. Himpunan bilangan riil yang lebih dari 0 dan kurang dari 10
- Tiga bilangan membentuk suatu deret geometric naik. Jika jumlahnya 26 dan hasil kalinya 216, maka suku ketiga dari deret tersebut adalah ...
 A. 2 C. 8 E. 18
 B. 6 D. 12
- Diberikan beberapa pernyataan:
 (i) $0 \in \emptyset$
 (ii) $\{0\} \subset \emptyset$
 (iii) $\{0\} \in \{0\}$
 (iv) $\{\emptyset\} \subset \{0, \emptyset\}$
 (v) $\emptyset \in \{0\}$
 Dari kelima pernyataan diatas, yang benar adalah ...
 A. (i) dan (ii)

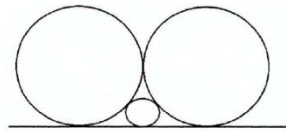
- B. (i), (ii), dan (iii)
 C. (ii), (iii), dan (iv)
 D. (iii), (iv), dan (v)
 E. (iv) dan (v)
10. Diketahui $ax + by = c$ dan $dx + ey = f$, dengan a, b, c, d, e, f merupakan suku-suku yang berurutan dari suatu barisan aritmatika dengan selisih $\neq 0$. Maka nilai x dan y adalah ...
 A. $x = 0, y = 1$ D.
 $x = 2, y = -1$
 B. $x = 2, y = 1$ E. $x =$
 $-1, y = -2$
 C. $x = -1, y = 2$
11. Suatu matriks dengan ordo $m \times n$ (umlah baris m dan kolom n) dikalikan dengan matriks lain yang berordo $p \times r$, kemudian hasilnya dikalikan lagi dengan matriks berordo 4×5 sehingga hasil akhirnya merupakan matriks persegi. Pernyataan yang pasti salah adalah ...
 A. Matriks $m \times n$ adalah matriks persegi
 B. Matriks $p \times r$ adalah matriks persegi
 C. $p = 4$
 D. $n = 4$
 E. $m = 4$
12. Jika α bilangan bulat, matriks $\begin{bmatrix} \alpha & 1 & 2 \\ 2 & 1 & \alpha \\ \alpha & -3 & 4 \end{bmatrix}$ tidak mempunyai invers untuk nilai α ...
 A. $-5/2$ C. 0 E. 2
 B. -2 D. 1
13. Himpunan $A = \{1, 2, 3, 4\}$. Sedangkan R adalah suatu relasi dari himpunan A ke himpunan A . Relasi R yang merupakan fungsi adalah ...
 A. $R = \{(2, 1), (2, 2), (3, 4), (4, 1)\}$
 B. $R = \{(1, 1), (2, 2), (3, 3)\}$
 C. $R = \{(3, 1), (4, 2), (2, 1), (1, 2)\}$
 D. $R = \{(1, 3), (2, 2), (3, 1), (4, 4), (4, 1)\}$
 E. $R = \{(2, 3), (4, 1)\}$
14. Jika ${}^a \log b = p$, ${}^b \log c = q$, ${}^c \log d = r$, maka ${}^{abc} \log bcd =$...
 A. $p + q + r$ D. $\frac{q(1+p+pr)}{1+p(q+1)}$
 B. pqr E. $\frac{p(1+q+qr)}{1+p(q+1)}$
 C. $\frac{p+q+r}{pqr}$
15. Di tiki buku "Keluarga", Ahmad membeli 3 buku, 2 pulpen, dan 3 pensil dengan harga Rp47.000,-. Adnan membeli 2 buku, 3 pulpen, dan 1 pensil dengan harga Rp34.000,-. Diah membeli 3 buku dan 1 pensil dengan harga Rp39.000,-. Jika Asmuni membeli 4 pulpen dan 2 pensil maka ia harus membayar ...
 A. Rp5000,- D.
 Rp15.000,-
 B. Rp11.000,- E.
 Rp17.500,-
 C. Rp13.000,-
16. Jika $f(x) = \frac{1}{2x+1}$ dan $(f \circ g)(x) = \frac{x}{2x+3}$, maka $g(x)$ sama dengan ...
 A. $\frac{3}{2} - \frac{2}{3x}$ D. $\frac{1}{2} + \frac{3}{2x}$
 B. $\frac{1}{2} + \frac{2}{3x}$ E. $\frac{3}{2} - \frac{1}{2x}$
 C. $\frac{3}{2} - \frac{2}{x}$
17. Pada suatu hari, Hana pergi berbelanja buah papaya, melon dan durian. Harga per buah papaya 11 ribu, melon 22 ribu dan

durian 23 ribu rupiah. Apabila total yang harus dibayar adalah sebesar 515 ribu rupiah maka banyaknya durian yang mungkin dibeli Hana adalah ...

- A. 8 C. 10 E. 12
B. 9 D. 11

18. Jika dua lingkaran besar mempunyai jari-jari yang sama yaitu 4 cm, maka jari-jari lingkaran yang kecil adalah ...

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



19. Suku banyak $2x^3 - 4x^2 + ax + b$ dibagi $(2x + 4)$ sisanya 1 dan jika dibagi $(x - 1)$ sisanya 10. Nilai dari $b - a = \dots$
- A. -12 C. 11 E. 26
B. -11 D. 19

20. Segitiga ABC adalah segitiga siku-siku dengan panjang sisi a, b dan c seperti pada gambar di bawah. Jika sudut ADB adalah 90° maka panjang garis BD adalah ...

- A. $\frac{2ab}{c}$ D. $\frac{ab}{\sqrt{a^2+b^2}}$
B. $\frac{2bc}{a}$ E. $\frac{ab}{\sqrt{c^2-a^2}}$
C. $\sqrt{b^2 - a^2}$

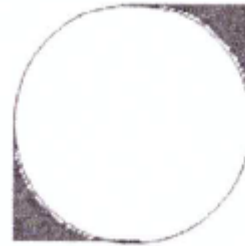
21. Volume prisma segienam beraturan yang panjang setiap rusuknya 6 cm adalah ... cm^3

- A. $54\sqrt{3}$ D. $216\sqrt{3}$
B. $81\sqrt{3}$ E. $324\sqrt{3}$
C. $162\sqrt{3}$

22. Panjang diagonal sumbu mayor dari elips yang memiliki persamaan $y^2 = 9 - \frac{(x-2)^2}{4}$ adalah...

- A. 6 C. 12 E. 36
B. 9 D. 18

23. Jika luas daerah yang diarsir adalah $(4-\pi) \text{ cm}^2$, maka keliling lingkaran tersebut adalah...



- A. $4\sqrt{2} + \sqrt{2}\pi$ D. $2\sqrt{2}\pi$
B. $4\sqrt{2} + 2\pi$ E. $4\sqrt{2}\pi$
C. $\sqrt{2}\pi$

24. Diketahui data: $x_1, x_2, x_3, \dots, x_{10}$. jika tiap nilai data ditambah 10, maka :

1. Rata-rata akan bertambah 10
2. jangkauan akan bertambah 10
3. jangkauan kuartil akan tetap
4. median akan tetap

Pernyataan yang benar adalah...

- A. 1, 2 dan 3 D. 4 saja
B. 1 dan 3 E. 1,2,3, dan 4
C. 2 dan 4

25. Keluarga pak mardi mempunyai 5 orang anak. Anak termuda berumur $\frac{1}{2}$ dari umur anak tertua. Anak keempat dan ketiga berturut-turut berumur 3 dan 5 tahun lebih tua dari yang termuda. Sedangkan anak kedua berumur 3 tahun lebih muda dari anak tertua. Bila rata-rata umur mereka adalah 15, umur anak tertua adalah...

- A. 18 tahun C. 22 tahun E. 26 tahun
B. 20 tahun D. 24 tahun

26. Nilai rata-rata ulangan matematika kelas A adalah \bar{x}_A dan kelas B adalah \bar{x}_B . Setelah kedua kelas digabung, nilai rata-ratanya adalah \bar{x} . jika $\bar{x}_A : \bar{x}_B = 10 : 9$ dan $\bar{x} : \bar{x}_B = 85 : 81$ maka perbandingan banyaknya siswa di kelas A dan B adalah...
- A. 3 : 5 C. 5 : 3 E. 8 : 9
B. 5 : 4 D. 4 : 5

27. Data berikut adalah berat badan sekelompok siswa dalam suatu kelas.

Berat badan (KG)	Frekuensi
46-50	5
51-55	20
56-60	k
61-65	26
66-70	7

Jika median berat badan adalah 58,5 kg maka nilai k adalah...

- A. 40 C. 44 E. 48
B. 42 D. 46
28. Dari angka-angka 2, 3, 4, 5, 6, 7, 8, dan 9 hendak dibuat bilangan yang terdiri atas tiga angka yang berbeda, yang lebih kecil dari 840 tetapi lebih besar dari 630. Banyaknya bilangan yang memenuhi ketentuan tersebut adalah...
- A. 105 C. 92 E. 84
B. 96 D. 90

29. Banyaknya bilangan ganjil yang terdiri dari 3 angka berbeda yang disusun dari 2,3,5,6,7 dan 8 adalah...

- A. 24 C. 40 E. 120
B. 28 D. 60

30. A, B, C, D, dan E akan berfoto bersama secara berdampingan. Peluang A dan B tidak bersebelahan adalah ...

- A. $\frac{1}{5}$ C. $\frac{3}{5}$ E. $\frac{2}{3}$
B. $\frac{2}{5}$ D. $\frac{1}{3}$

31. Dalam sebuah keranjang A yang berisi 5 buah mangga, 2 buah mangga diantaranya busuk. Dalam keranjang B yang berisi 6 buah apel, 1 diantaranya busuk. Ibu menghendaki 2 buah mangga dan 2 buah apel yang baik. Peluangnya adalah...

- A. $\frac{1}{5}$ C. $\frac{3}{5}$ E. $\frac{1}{3}$
B. $\frac{1}{10}$ D. $\frac{3}{10}$

32. $\lim_{x \rightarrow 8} \frac{\sqrt[3]{x^2} - 2\sqrt[3]{x}}{x-8} = \dots$

- A. $\frac{1}{2}$ C. $\frac{1}{4}$ E. $\frac{1}{8}$
B. $\frac{1}{3}$ D. $\frac{1}{6}$

33. $\lim_{p \rightarrow q} \frac{p\sqrt{p} - q\sqrt{q}}{\sqrt{p} - \sqrt{q}} = \dots$

- A. P C. 2q E. 3q
B. q D. 3p

34. Jika $f(x) = \sqrt{2 + \sqrt{2 + \sqrt{x}}}$, maka turunan dari f(x) adalah...

A. $\frac{1}{8} \sqrt{2 + \sqrt{2 + \sqrt{x}}} \cdot \sqrt{2 + \sqrt{x}} \cdot \sqrt{x}$

- B. $8\sqrt{2+\sqrt{2+\sqrt{x}}}\cdot\sqrt{2+\sqrt{x}}\cdot\sqrt{x}$
 C. $\frac{1}{8\sqrt{2+\sqrt{2+\sqrt{x}}}\cdot\sqrt{2+\sqrt{x}}\cdot\sqrt{x}}$
 D. $\frac{1}{\sqrt{2+\sqrt{2+\sqrt{x}}}\cdot\sqrt{2+\sqrt{x}}\cdot\sqrt{x}}$
 E. $\frac{8}{\sqrt{2+\sqrt{2+\sqrt{x}}}\cdot\sqrt{2+\sqrt{x}}\cdot\sqrt{x}}$
35. $f(x) = a_n x^n + a_{n-1} x^{n-1} + \dots + a_3 x^3 + a_2 x^2 + a_1 x^1 + a_0$, dengan a_0, a_1, \dots, a_n adalah anggota himpunan bilangan riil dan $a_n \neq 0$. Jika P menyatakan permutasi dan C menyatakan kombinasi, maka turunan ke-n dari $f(x)$ adalah...
- A. $a_n P(n, 1)$ D. $a_n C(n, n-1)$
 B. $a_n C(n, 1)$ E. $a_n C(n, n)$
 C. $a_n P(n, n-1)$
36. Fungsi $y = 2x + 3\sqrt[3]{x^2}$ dalam interval $x \in [-2, 2]$ maka fungsi akan mencapai minimum pada nilai $x =$...
- A. -2 D. 1
 B. -1 E. 2
 C. 0
37. Jika $f''(x) = x + x \cos x$ dan memenuhi $f(0) = 1$ dan $f'(0) = 2$, maka $f(x) =$...
- A. $\frac{1}{6}x^3 - x \cos x + 2 \sin x + 2$
 B. $\frac{1}{6}x^3 - x \cos x + 2 \sin x - 2$
 C. $\frac{1}{6}x^3 + x \cos x - 2 \sin x - 2$
 D. $\frac{1}{6}x^3 + x \cos x + 2$
 E. $\frac{1}{6}x^3 + x \cos x - 2$
38. $\int_{-1}^3 |x-2| dx = \dots$
- A. -4 C. 1 E. 5
 B. 0 D. 3
39. Fungsi $f(x)$ dapat diintegrasikan pada selang $a \leq x \leq b$, maka ...
- A. $\int_a^b f(x) dx = f(b) - f(a)$
 B. $\int_a^b 2f(x) dx = 2f(b-a)$
 C. $\int_a^b f(x) dx + \int_b^a f(x) dx = 2 \int_a^b f(x) dx$
 D. $\int_a^b f(x) dx - \int_b^a f(x) dx = 0$
 E. $\int_a^b f(x) dx + \int_b^a f(x) dx = 0$
40. Luas daerah di kuadran IV yang dibatasi oleh kurva $y^2 = x$, sumbu x , dan garis $x - y - 2 = 0$ dinyatakan...
- A. $\int_0^1 \sqrt{x} dx + \int_1^2 (2-x) dx$
 B. $\int_0^1 \sqrt{x} dx + \int_1^2 (x-2) dx$
 C. $\int_0^2 \sqrt{x} + (x-2) dx$
 D. $\int_{-1}^0 \sqrt{x} + (2-x) dx$
 E. $\int_0^2 \sqrt{x} dx + \int_2^4 (2-x) dx$
41. Ingkaran pernyataan : "Jika semua buruh berdemonstrasi, maka ada pabrik yang tutup" adalah ...
- A. Semua buruh berdemonstrasi dan semua pabrik beroperasi.
 B. Jika ada pabrik yang tutup, maka semua buruh berdemonstrasi.
 C. Ada buruh yang berdemonstrasi namun tidak ada pabrik yang tutup.
 D. Jika tidak ada pabrik yang tutup, maka ada buruh yang tidak berdemonstrasi.
 E. Semua buruh berdemonstrasi namun semua pabrik tidak tutup.
42. Ada sebuah pulau yang hanya dihuni oleh 2 jenis manusia, ksatria dan penjahat. Ksatria selalu

mengatakan kebenaran dan penjahat selalu mengatakan kebohongan. Suatu hari Anda datang berkunjung dan bertemu dengan 2 orang penduduk pulau tersebut yaitu X dan Y. Si X berkata, "Y adalah ksatria", dan Y berkata, "X dan saya merupakan jenis yang berbeda".

Pernyataan yang benar dibawah ini adalah ...

- A. X dan Y penjahat
- B. X penjahat dan Y ksatria
- C. X ksatria dan Y penjahat
- D. X dan Y ksatria
- E. Belum bisa ditentukan jenisnya

43. Diberikan premis-premis sebagai berikut :

Premis 1 : Jika hari hujan, maka Ayah memakai jas hujan.

Premis 2 : Jika Ayah memakai jas hujan, maka Ayah pergi ke kantor.

Ingkaran dari kesimpulan diatas adalah...

- A. Jika hari hujan, maka Ayah pergi ke kantor.
- B. Ayah memakai jas hujan atau Ayah tidak pergi ke kantor.
- C. Jika hari hujan, maka Ayah tidak pergi ke kantor.
- D. Hari hujan dan Ayah tidak pergi ke kantor.
- E. Jika Ayah pergi ke kantor, maka hari hujan.

44. Kontraposisi dari pernyataan "Jika semua warga negara Indonesia membayar pajak maka

pembangunan dapat berjalan lancar" adalah ...

- A. Jika tidak semua warga negara membayar pajak maka pembangunan tidak berjalan lancar.
- B. Jika pembangunan tidak berjalan lancar maka ada warga negara yang tidak membayar pajak.
- C. Jika semua warga negara Indonesia membayar pajak maka pembangunan tidak berjalan lancar.
- D. Jika pembangunan berjalan lancar maka tidak semua warga Indonesia membayar pajak.
- E. Jika pembangunan tidak berjalan lancar maka semua warga negara tidak membayar pajak.

45. Diketahui barisan bilangan sebagai berikut : 0, 1, 1, 2, 3, Suku-8 dari barisan bilangan tersebut adalah ...

- A. 6
- B. 8
- C. 10
- D. 13
- E. 15

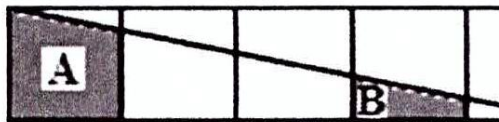
46. Tujuh orang anggota sebuah klub diskusi bersepakat untuk berdiskusi setiap hari pada saat makan siang di restoran dengan meja bundar. Mereka memutuskan untuk duduk sedemikian rupa sehingga setiap anggota memiliki tetangga duduk yang berbeda setiap makan siang. Mereka dapat melakukan hal ini selama ... hari berturut-turut.

- A. 3
- B. 4
- C. 5
- D. 6
- E. 7

47. Fais memiliki 3 buah bola tenis dan 3 kotak penyimpanan bola tenis yang masing-masing kotak dapat menyimpan 10 buah bola tenis, maka banyak cara menyimpan 3 buah bola tenis dan 3 kotak tersebut adalah ... cara.

A. 5 C. 12 E. 20
B. 10 D. 15

48. Jika setiap persegi dari gambar dibawah memiliki luas yang sama, perbandingan luas area yang diarsir, yaitu luas A : luas B adalah ...



A. 2 : 1 D. 5 : 2
B. 3 : 1 E. 5 : 3
C. 3 : 2

49. Disebuah perusahaan konveksi ada pesanan membuat 12 lusin jaket. Jika Ade bekerja sendiri, maka dia dapat menyelesaikannya dalam 18 hari, sedangkan Tenti dalam 24 hari. Setelah mereka berdua mengerjakan pesanan tersebut seama 6 hari, maka banyak pesanan jaket yang belum diselesaikan adalah ... potong.

A. 36 C. 60 E. 84
B. 48 D. 72

50. Sebuah kantong berisi sejumlah kelereng, Gisel mengambil sepertiganya, kemudian mengambil lagi 2 kelereng. Mora mengambil lagi setengah dari sisa

kelereng dikantong namun meletakkan kembali 3 kelereng ke kantong tersebut. Josua mengambil dua perlima dari kelereng yang masih tersisa dan mengambil lagi 2 kelereng. Jika kelereng yang tersisa dikantong sebanyak 4 buah, maka banyaknya kelereng mula-mula adalah...

A. 12 C. 24 E. 36
B. 48 D. 30

51. Suatu tempat fotokopi mempunyai 2 buah mesin, masing-masing berkapasitas 4 rim/jam dan 2 rim/jam. Jika pada suatu hari total waktu kerja kedua mesin tersebut 10 jam dan menghasilkan 34 rim, maka selisih waktu kerja dari kedua mesin tersebut adalah ... jam.

A. 3 C. 5 E. 7
B. 4 D. 6

52. Seorang pengembara menempuh jarak 96 km dalam 10 jam. Pertama-tama dia melakukan perjalanan dengan bersepeda. Karena lelah dia melanjutkan perjalanan dengan menumpang delman. Laju bersepeda 12 km/jam, sedangkan laju delman hanya setengah dari laju bersepeda. Selisih antara jarak tempuh menggunakan sepeda dengan jarak tempuh menggunakan delman adalah ... km.

A. 24 C. 40 E. 60
B. 36 D. 48

53. Harga komputer dinaikkan dua puluh persen dari harga sebelumnya. Persentase penurunan harga agar komputer kembali seperti semula adalah...

- A. 12,5 % D. 20 %
- B. 14,28 % E. 25 %
- C. 16,67 %

Untuk soal nomor 54 dan 55

Enam mahasiswa STIS Doni, Dono, Dini, Joni, Jono, Jeni sedang mengantri di depan lift untuk menuju ruang kuliah.

- Joni ada dibelakang Jeni.
- Dono ada didepan Dini.
- Dono ada didepan joni, dan hanya dipisah oleh 2 mahasiswa lainnya.
- Dini hanya bisa diurutan keempat atau yang paling belakang.

54. Mahasiswa STIS yang mungkin antri dibelakang Dini adalah ...

- A. Joni, Jono, dan Jeni
- B. Hanya Jono
- C. Joni, Jono, dan Doni
- D. Hanya Joni
- E. Semua pilihan jawaban salah

55. Jika Doni ada diurutan kelima, maka pernyataan yang mungkin benar adalah ...

- A. Dini antri urutan paling depan
- B. Jono antri urutan ke-2
- C. Dono antri urutan ke-3
- D. Joni antri urutan ke-2
- E. Semua pilihan jawaban salah

56. Pak Agus membagikan tanah warisan kepada 5 orang anak laki-lakinya dengan bagian yang sama besar. Anak sulung Pak Agus

mengelola $\frac{1}{3}$ bagian tanah warisannya menjadi kolam lele dan $\frac{1}{4}$ bagian tanah warisannya menjadi kebun jeruk. Sedangkan setengah bagian dari sisa tanahnya dijadikan rumah tempat tinggal. Jika luas tanah yang akan dijadikan rumah tempat tinggal oleh anak sulung Pak Agus adalah 150 m^2 maka luas tanah warisan Pak Agus seluruhnya adalah ... m^2 .

- A. 1500 C. 3000 E. 4000
- B. 1800 D. 3600

57. Tiga orang sahabat yaitu Adi, Beti, dan Candra memiliki usia yang sama. Ayah mereka mulai bekerja pada usia 25 tahun diperusahaan yang sama. Perusahaan tersebut mengharuskan pegawai yang usianya 60 tahun untuk pensiun.

- Tahun ini usia ayah Adi tiga kali usia Adi.
- Tahun ini usia ibu beti tiga kali usia Beti, tiga tahun lebih muda daripada ayah Beti.
- Tiga tahun lalu, perbandingan antara usia Candra dan usia ayah Candra sama dengan perbandingan antara usia Adi dan ayah Adi pada tahun ini.
- Tahun ini ayah Adi memasuki masa pensiun.

Urutan ketiga anak tersebut berdasarkan usia ayahnya dari usia termuda adalah ...

- A. Adi, Beti, Candra
- B. Beti, Candra, Adi
- C. Candra, Adi, Beti

- D. Beti, Adi, Candra
- E. Candra, Beti, Adi

58. Alva yang tinggal di Jakarta dan Bryan yang tinggal di Surabaya bersama berkunjung ke Lombok tempat tinggal Chiara. Alva berangkat naik kereta api dari Jakarta jam 5.40 WIB sampai Surabaya jam 18.20 WIB untuk bertemu Bryan. Mereka berdua naik pesawat menuju Lombok berangkat jam 20.10 WIB dari Surabaya sampai Lombok jam 22.40 WITA. Lama total perjalanan Alva adalah ...
- A. 13 jam
 - B. 14 jam 10 menit
 - C. 15 jam 10 menit
 - D. 16 jam
 - E. 16 jam 10 menit

59. Nilai yang paling mendekati bentuk pecahan berikut $\frac{2^n \cdot 2^{n+2}}{(2^{n+2})^2 - 2^2 \cdot 2^{2n}}$ adalah
- A. 0,25
 - B. 0,33
 - C. 0,50
 - D. 1,33
 - E. 1,50

60. Setiap NANG adalah NENG. Ada lima NENG yang juga NONG. Tidak ada NANG yang NONG. Jika banyaknya NENG adalah 15 dan tiga diantaranya tidak NANG dan tidak NONG, maka banyaknya NANG adalah ...
- A. 3
 - B. 5
 - C. 7
 - D. 10
 - E. 12

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Mata Uji Bahasa Inggris

Soal Bahasa Inggris USM STIS 2007

Waktu : 60 Menit

Petunjuk

- Di bawah setiap soal dicantumkan 5 kemungkinan jawaban masing masing diberi kode A, B, C, D atau E. Gunakan pensil 2B untuk menghitamkan lingkaran yang berisi kode jawaban yang saudara anggap benar pada lembar jawaban computer (LJK)
- Nilai Jawaban tiap soal adalah :
2 untuk jawaban benar
0 untuk tidak ada jawaban
-1 untuk jawaban salah
- Mengganti jawaban dilakukan dengan cara melingkari kode jawaban baru yang dipilih kemudian bubuhkan tanda silang di dalam lingkaran jawaban sebelumnya.
- Lembar jawaban tidak boleh kotor dan terlipat
- Hanya lembar jawaban yang dikumpulkan, sedangkan soal bisa dibawa pulang.

Selamat Mengerjakan

*Tidak ada satupun kesia-siaan
Bagi manusia yang terus mempelajari ilmu pengetahuan*

Direction :

The Prolem consist of four sections. Four word phrases, marked A, B, C, dan D given beneath each sentence. You are to choose the one word or phrase. Section 1 : to complete each sentence(no : 1 -25) : Section 2 : To Find each synonym of the underlined word (no : 26-45). Secstion 3 : To analyze each problem of the underlined word (no : 46 – 50). Section 4 : To Answer each question (no : 51 – 60).

Section 1 : Structure and Written Expression

1. If I a student at STIS, I would finish my study on time.
A. Am accepted
B. Were accepted
C. Was accepted
D. Would accepted
2. Ita has kept her mother outside for hours.
A. Wait
B. To Wait
C. Waiting
D. Waited
3. You'd better a job now if you don't want miss the opportunity
A. Get
B. To get
C. Getting
D. Got
4. "What did yo dou last night?"
A. The boy asked the girl what she was doing the previous night
B. The boy asked the girl what she did the previous night
C. The boy asked the girl what she has done the previous night
D. The boy asked the girl what she had done the previous night
5. The doctor has known the girl from breast cancer.
A. Suffer
B. To suffer
C. Suffering
D. Suffered
6. Did you meet the girl was chosen in Indonesian Idols
A. Who
B. Whom
C. What
D. Which
7. If you want to in running your bussinee, you must have full support of our employees.
A. Success
B. Succeed
C. Successful
D. Successfully
8. Everybody knows that he has shown great loyalty to the company. Therefore, he a big sum of money at the next anniversary of the company.

- A. Rewards
B. Is rewarding
C. Will be rewarded
D. Will reward
9. Rudi : " Why did you quit the job, Jack?"
Jack : "I If the pay had been better.
- A. Would stay
B. Would have stayed
C. Had stayed
D. Would had stayed
10. debate and discussion, opposing ideas are presented in attempt to persuade people.
A. Both
B. Although both
C. That both
D. In both
11. John Neter, , specialized in opinion polls and business surveys.
A. Whose statistician
B. A statistician who
C. A statistician
D. As a statistician he
12. Over centuries, various theories have been advanced
A. The origin of alphabetic writing is explained
B. Of explaining the origin of alphabetic writing
C. The explanation of the origin of alphabetic writing
D. To explain the origin of alphabetic writing
13. The girl desires as long as she is at her room.
A. Not be disturbed
B. Not to be disturbed
C. Be not disturbed
D. To be not disturbed
14. The man is very busy and lets his mobile phone very often.
A. Ring
B. To ring
C. Ringing
D. Rung
15. Next week is That we can take a trip out of Jakarta.
A. Such a beautiful holiday
B. Such a holiday beautiful
C. Beautiful such holiday
D. Such a beautiful holiday
16. I am sure that she is not the girl in charge of the sales department. But now, she :
A. Acts as if she were the sales manager
B. Is acting as if she was the sales manager
C. Would act as if she was the sales manager
D. Acts if she is the sales manager
17. a common belief, fright or excitement causes the

flesh of young game fowl to turn different color.

- A. Is according to
- B. Ahile according to
- C. That is according to
- D. According to

18. A planetarium is a special kind of education facility
The teaching astronomy.

- A. To devoted
- B. Devoted to
- C. Which devotes
- D. To devote to

19. that modern corn may be a hybrid of teosinte and other wild species that no longer exist.

- A. Now is thought
- B. The tought
- C. It is thought
- D. Thinking

20. Public transportation in most of the nation is expanding
the use of subways and busess is declining in some metropolitan areas.

- A. Nevertheless
- B. Despite
- C. Concequently
- D. Although

21. Some bees make the characteristic monotonous noise known as buzzing.
.....

- A. But their wings are vibrated rapidly
- B. The vibration of their wings is rapid
- C. By vibrating their wings rapidly
- D. And their wings rapidly vibrating

22. Pencils are available

- A. In many degrees of hardness
- B. Are many degrees of hardness
- C. Hardness in many degrees
- D. Many degrees have hardness

23. Sonic booms cannot hurt people, they may damage buildings and breaks windows.

- A. As
- B. But
- C. Or
- D. What

24. are shaped like teardrops in untrue.

- A. That there are raindrop
- B. That Raindrops
- C. Raindrops that
- D. Raindrops

25. The javelin used in competition must be between 260 and 270 centimeters

- A. In length
- B. Whose length

- C. It is long
- D. Lengthily

Section 2 : Vocabulary

26. I am afraid that this border raid is prelude to more serious attacks.
- A. End
 - B. Introduction
 - C. Result
 - D. Influence
27. This area has been preserved in all its pristine wildness.
- A. Modern
 - B. Sophisticated
 - C. Primitive
 - D. Old
28. The *Titanic* lies buried its aqueous tomb.
- A. Watery
 - B. Glorious
 - C. Subterranean
 - D. Unknown
29. His explanation was lucid and to the point.
- A. Short
 - B. Believable
 - C. Clear
 - D. Understandable
30. Lava, purnice, and other igneous rocks are found in great abundance around Mount Merapi near Magelang.
- A. Coral
 - B. Volcanic
 - C. Hard
 - D. Huge
31. We can overlook the foibles of our friends, no one is perfect.
- A. Strength
 - B. Dumd
 - C. Weakness
 - D. Bravery
32. The country boy gawked at the skyscrapes and neon lights of big city.
- A. Scared
 - B. Stared foolishly
 - C. Admired
 - D. Climbed
33. His that was knocked askew by the wind.
- A. Awry
 - B. Out of shape
 - C. Off
 - D. On the ground
34. Scientists measure the microscopic distances between atoms in microns
- A. Visible
 - B. Tiny
 - C. Small
 - D. Short
35. Because of the gravitational pull of the sun, the earth and the other planet maintain an orbit around the sun.

- A. Source
B. Force
C. Push
D. Attractiveness
36. The meat must be chopped before it can be used in that recipe.
- A. Stewed
B. Cut
C. Bought
D. Cooked
37. Mendel's formula explains the appearance of hybrids and pure species in breeding.
- A. Origin
B. Natural
C. Mongrel
D. Descent
38. To educate a child perfectly requires profounder thought, greater wisdom, than to govern a state.
- A. Longer
B. Less
C. Simpler
D. Deeper
39. The head best leaves to the heart what the heart alone divines.
- A. Describes
B. Analyze
C. Guesses
D. Develops
40. Boredom shortens life, and bereaves the days of the light.
- A. Robs
B. Empowers
C. Takes
D. Delivers
41. To be a favorite of an ignorant multitude, a man must descend to their level.
- A. Crowd
B. Youth
C. Student
D. World
42. Perseverance led to his success.
- A. Precaution
B. Testimony
C. Rectitude
D. Persistence
43. A complex sentence must contain a subordinate clause.
- A. Dependent
B. Nominative
C. Main
D. Adverbial
44. Your chances of being elected mayor are rather remote.
- A. Control
B. Unlikely
C. Automatic
D. Good
45. Most of the wounded passengers were quickly removed from the aircraft.

- A. Deceased
- B. Unconscious
- C. Injured
- D. Distress

- A. 3 %
- B. 4 %
- C. 5 %
- D. 6 %

Section 3 : Analytical reading

46. If the length of rectangle is increased by 20 %, and the width of the same rectangle is decreased by 20 %, then the area of the rectangle

- A. Decreased by 20 %
- B. Decreases by 4 %
- C. Is unchanged
- D. Increased by 4 %

47. In a survey of a town, it was found that 65 % of the people polled watched the news on television, 40 % read a newspaper, and 25 % read a newspaper and watched the news on television. What percent of the people surveyed neither watched the news on television nor read a newspaper?

- A. 5 %
- B. 10 %
- C. 15 %
- D. 20 %

48. A screwdriver and a hammer currently have the same price. If the price of a screwdriver by 5 % and the price of hammer goes up by 3%, by what percent will the cost of 3 screwdriver and 3 hammers rise?

49. There are 220 questions on a 3-hours examination. Among these questions are 50 mathematics problems. It is suggested that twice as much time be allowed for each mathematics problem as for each of the other questions. How many minutes should be spent on the mathematics problems.

- A. 60
- B. 72
- C. 100
- D. 120

50. A sport jacket marked \$48 is offered at a discount of 25 % during a storewide. At this reduced price the dealer makes a profit of 20 % on the cost. The cost to the dealer is

- A. \$30
- B. \$32
- C. \$36
- D. \$40

Section 4 : Reading Comprehension

Question 51-52 refer to the following passage

The rattles with which a rattlesnake warn of its presence are formed by loosely interlocking hollow rings of hard skins, which make a

buzzing sound when its tail shaken. As a baby, the snake begins to form its rattles from the button at the very tip of its tail. Thereafter, each time it sheds its skin, a new ring is formed. Popular belief holds that a snake's age can be told by counting the rings, but this idea is fallacious. In fact, a snake may lose its old skin as often as four times a year. Also, rattles tend to wear or break off with time.

51. A rattlesnake's rattles are made of

- A. Skin
- B. Bone
- C. Wood
- D. Muscle

52. How often does a rattlesnake shed its skin?

- A. Once every four years
- B. Up to four years
- C. Once every four months
- D. Four times more often than other snakes

Question 53-55 refer to the following passage

The Mediterranean climate is little suited to stock-breeding; only sheep and goats can make use of the extensive feeding grounds with their meager rainfall.

53. The Mediterranean climate is described as

- A. Humid
- B. Extremely cold
- C. Rainy
- D. Generally climate

54. The Mediterranean area is

- A. Good for raising all varieties of animals
- B. Poor for raising animals
- C. Suitable for some animals, but not for sheep and goats
- D. Well suited to breeding animals

55. According to these sentences animal feeding grounds in Mediterranean are

- A. Severely limited in size
- B. Very steep and rocky
- C. Large, but not very good for grazing
- D. Large, but very swampy

Question 56-57 refer to the following passage

An observer sitting on a beach can make at least an intelligent guess whether the surf spilling out onto the sand before him has been produced by a gale close offshore or by a distant storm.

56. Surf must be

- A. Distant storm
- B. Wave action near the shore
- C. Wave action far out in the ocean
- D. Small rocks and seashells

57. A gale is probably

- A. A very strong wind
- B. A breeze
- C. A tidal wave
- D. An island

Question 58-60 refer to the following passage

The normal daytime retreats of bats are rooms of caves, but individuals commonly live in dry, dark room of buildings. Males are usually solitary, but females, especially when they are young, gather colonies. The bats do not hide in crevices but, when not hibernating, hang from the open roof of caves or buildings where they can see, and escape from, any intruder. In the dormant condition, which the bats assume when the air temperature is low, the body temperature is drops; and they cling with thumbs and toes to some vertical walls, with their

- C. To hibernate
- D. To lower their body temperature

ears closely coiled to conserve body heat.

58. Young female bats

- A. Hide in crevices
- B. Like to live in groups
- C. Prefer the dry, dark rooms of buildings
- D. Hibernate until maturity

59. When the weather turns cold

- A. The bats move to the rooms of buildings
- B. The bats gather in colonies
- C. The bats coil their ears
- D. The bats hide in crevices

60. Bats often hang from the open roof of caves and buildings

- A. To keep warm
- B. To see and escape from intruders

Soal Bahasa Inggris USM STIS 2008

Waktu : 60 Menit

Petunjuk

- Di bawah setiap soal dicantumkan 5 kemungkinan jawaban masing masing diberi kode A, B, C, D atau E. Gunakan pensil 2B untuk menghitamkan lingkaran yang berisi kode jawaban yang saudara anggap benar pada lembar jawaban computer (LJK)
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2 untuk jawaban benar
0 untuk tidak ada jawaban
-1 untuk jawaban salah
- Mengganti jawaban dilakukan dengan cara melingkari kode jawaban baru yang dipilih kemudian bubuhkan tanda silang di dalam lingkaran jawaban sebelumnya.
- Lembar jawaban tidak boleh kotor dan terlipat
- Hanya lembar jawaban yang dikumpulkan, sedangkan soal bisa dibawa pulang.

Selamat Mengerjakan

Kejujuran adalah pintu menuju kesuksesan

Section 1: Structure and Written Expression

1. X: "Do you often go to the restaurant?"
Y: "No, it _____ quite a long time since I went to the restaurant with my friends."

A. Has been
B. Would be
C. Is
D. Was
2. X: "The hotel is suffering a great loss."
Y: "Yes, only ten percent of its rooms _____"

A. Occupies
B. Occupied
C. Is occupied
D. Are occupied
3. The students are collecting money, food, and clothes for the people whose houses were destroyed in the fire last week.

A. Who
B. Whose
C. Whom
D. Which
4. X: "Do you think I can wear my necklace?"
Y: "I _____ wouldn't advise jewelry in difficult time like this."

A. Wear
B. To wear
C. To be wearing
D. Wearing
5. He told me a lot about the Philippines. He _____ there for a long time before moving here.

A. Must have lived
B. Might be living
C. Ought to have lived
D. Would have lived
6. The workers _____ that their wages were not missed, went on strike.

A. Knew
B. Were knowing
C. Realizing
D. Realized
7. The Williams have finally _____ the trip to the beach because of being too afraid of big waves.

A. Called up
B. Called off
C. Called upon
D. Called for
8. The more you practice speaking English, _____ you do it.

A. The well
B. The best
C. The better
D. The good
9. _____ That Tim was a bad driver, I wouldn't have lent him my car.

A. Had I realized
B. If I realized
C. Would I realized

- D. I had realized
10. John was very sorry he didn't know the answer, but he really wished he .
- A. Knows
B. Knew
C. Has known
D. Had known
11. He put out the light. Then, he locked the door. Those sentences can be joined as follows;
- A. When he locked the door, he put out the light
B. He had put out the light before he locked the door
C. He put out the light after he locked the door
12. ____ Didi Petet a good doctor is his ability to play the role of different characters so well.
- A. That makes
B. Whether
C. What makes
D. In order to make
13. Having completed all the assignments that teacher gave, I decided _____ here the next vacation.
- A. staying
B. to stay
C. stay
D. I stay
14. _____, and neither does she.
- A. I do my homework
B. She always does her homework
C. She hasn't done homework
D. I don't do my homework
15. X: "This cake is delicious. Did you make it yourself?"
Y: "No, I didn't. _____"
A. I baked it myself
B. Lucy asked me to bake it
C. It was I who baked it
D. I had Lucy baked it
16. They have worked hard to prevent excessive government spending, protect environment, and .
- A. Provide quality education
B. The provision of quality education
C. Providing quality education
D. For providing quality education
17. She _____ the shoes for five minutes when one of the heels came off.
- A. Was only wearing
B. Had been only wearing
C. Has only been wearing
D. Only wore
18. Hoping to get a better income, .
- A. Budi was offered a job in Macau
B. A new post in Medan was accepted by Budi
C. Budi accepted an offer to work in Medan

- D. A company offered Budi a job in Medan
19. "Haryanto started learning to play chess when he was only five years old and won his first national chess competition when he was ten."
This means that Haryanto to play chess very well by the time he was 10 years old.
- A. Had learned
B. Was learning
C. Would learn
D. Has learned
20. All the student have to come on time, and _____.
A. The teacher has too
B. So has the teacher
C. The teacher does
D. So does the teacher
21. We always avoid _____to the zoo on Sundays because it is too crowded.
A. Going
B. Go
C. to go
D. to be going
22. _____She is not interested in classical music, she decided not to go to the concert.
A. Therefore
B. Since
C. In spite of
D. However
23. There was so much noise next door. Our neighbors _____from their vacation.
A. Should have returned
B. Would have returned
C. Must have returned
D. Ought to be returned
24. The Military Academy at West Point _____on the west bank of the Hudson River, north of New York City.
A. Located
B. Is located
C. Which is located
D. Whose location is
25. The definitions from 'gram calories' or 'calories' are _____for most engineering work.
A. Accurate as enough
B. Enough accurate
C. As accurate enough
D. Accurate enough
26. He asked, "What do you intend to do after you graduate?"
Two days ago he asked me _____.
A. What I intended to do after I graduate
B. What I intended to do after I graduated
C. What did I intend to do after I graduated
D. What do I intend to do after I graduated
27. I have lost the piece of paper .

- A. I wrote Ida's address on it.
- B. That I wrote Ida's address on it.
- C. Ida's address I wrote on it
- D. On which I wrote Ida's address

28. X: "The result of the English exam is very good."

Y: "It is due to the newly teaching method."

- A. Implemented
- B. Implementing
- C. Implement
- D. To be implemented

29. Although one of his ships has succeeded in sailing all the way back to Spain past the Cape of good Hope, Magellan never completed the first circumnavigation of the world, and .

- A. Most of his crew didn't
- B. Neither most of his crew did
- C. Neither did most of his crew
- D. Most of his crew didn't also

30. X: "Are you sure that nuclear power is our only hope for the future?"

Y: "Oh, yes. ____."

- A. That would be nice
- B. I can't say for certain
- C. I can't complain about it
- D. There is no doubt about it

Section II. Reading Comprehension
(Read this passage to answer no 31-32)

Scientists and doctors say that about 34 million Americans are too fat. Why is this? One cause is the kind of food Americans like 'fast food'. These fast food (such as hamburger and ice cream) often have fattening things in them. Another cause is the way Americans eat. They often eat little snacks between regular meals. These extra foods add extra fat on the body. A third cause is not enough exercise. Americans like driving anywhere, instead of walking. They often have machines to do a lot of work. Some Americans are also too heavy because of health problems. But for most of those 34 million Americans, the problem is the Americans lifestyle.

31. The passage tells us about ____.

- A. What Americans eat
- B. Health problems in America
- C. The American lifestyle
- D. Why many Americans are too fat

32. From the passage we may conclude that ____.

- A. High tech machines are an advantage to the health of Americans
- B. Snacks are included in the regular meals of Americans
- C. Many Americans are fat because of the way they live
- D. Eating little snacks is the cause of major health problems

(Read this passage to answer no 33-34)

Television is the most popular form of entertainment in any household. People of all ages use this medium to entertain themselves for an average of four hours a day. Thus, television has had tremendous influence of its viewers, especially children. Scientists now say that children can be adversely affected by constant watching television. This is due to fact that they participate less in physical activities, spend less time reading and studying, and see a word of a violence that can affect their own feelings of security.

33. The passage tells us about ____.

- A. The bad effect of television on children
- B. Television, the best entertainer in our lives
- C. Scientists' research on the popularity of television
- D. Viewers' tremendous influences on television

34. ".....that children can be adversely affected by constant watching television" means that____.

- A. Children are not interested in violent scene
- B. Television makes children reluctant to study
- C. Children are encouraged to read a lot
- D. Television influences children to do physical exercise

(Read this passage to answer no 35-40)

Application for admission to the Graduate School at this university must be made on forms provided by the Director of Admissions. An applicant whose undergraduate work was done at another institution should request that two copies of undergraduate transcripts and degrees be sent directly to the Dean of Graduate School. Both the application and the transcripts must be on file at least one month prior to the registration date, and must be accompanied by a nonrefundable ten-dollar check or money order to cover the cost of processing the application.

An undergraduate student of this university who has senior status and is within ten credits hours of completing all requirements for graduation may register for graduate work with the recommendation of the chairperson of the department and the approval of the Dean of the Graduate School.

Students who have already been admitted to the Graduate School but were not enrolled during the previous semester should reapply for admission using a special short form available in the office of the Graduate School. It is not necessary for student who have previously been denied admission to resubmit transcripts. However, new application form must accompany all requests for reconsideration.

35. What is the author's main point?

- A. How to register for graduate coursework
 - B. How to obtain senior status
 - C. How to apply to the Graduate School
 - D. How to make application for graduation
36. Where would this passage most probably be found?
- A. In a university catalog
 - B. In a travel folder
 - C. In a newspaper
 - D. In a text book
37. According to this passage, where would a student secure application forms for admission to the university?
- A. From the chairperson of the department
 - B. From the Dean of the Graduate School
 - C. From the institution where the undergraduate work was done
 - D. From the Director of Admissions
38. What special rule applies to undergraduate students?
- A. They may not register for graduate work
 - B. They may receive special permission to register for graduate work
 - C. They must pass an examination in order to register for graduate work
 - D. They may register for graduate work at any time
39. Which of the following documents must be on file thirty days before the registration date?
- A. Two copies of recommendations from former professors
 - B. A written approval of the Dean of the graduate School
 - C. One set of transcripts and an English proficiency score
 - D. Two copies of undergraduate courses and grades, an application form, and an application fee
40. Students who have already been admitted to the Graduate School
- A. Must reapply if they have not been registered at the university during the previous semester
 - B. Never need to apply for readmission
 - C. Must reapply every semester
 - D. Must reapply hours of graduation
- (Read this passage to answer no 41-46)**
- Although most universities in the United States are on a semester system, which offers classes in the fall and spring, some schools observe a quarter system comprised of fall, winter, spring, and summer quarters. The academic year, September to June, is divided into three quarters of eleven weeks each beginning in September, January, and March; the summer quarter, June to August is composed of shorter sessions of varying length. Students may take advantage of the opportunity to study year round by enrolling in all four quarters. Most

students begin their programs in the fall quarter, but they may enter at beginning of any of the other quarters.

41. Which of the following would be the best title for this passage?

- A. Universities in the United States
- B. The Academics System
- C. The quarter System
- D. The semester System

42. How many terms are there in quarter system?

- A. four regular terms and one summer terms
- B. three regular terms and one summer terms
- C. two regular terms and two summer terms
- D. one regular terms and four summer terms

43. When is the academic year?

- A. September to June
- B. June to August
- C. August to June
- D. September to August

44. A semester system _____.

- A. has eleven-week sessions
- B. is not very popular in the united States
- C. gives students the opportunity to study year round
- D. has two major sessions a year

45. When may studnets begin studying in a school that uses a quarter system?

- A. September
- B. Summer semester only
- C. At the beginning of any quarter
- D. At the beginning of the academics year

46. Where would this passage most probably be found?

- A. In a college catalog for a university in the United States
- B. In a general guide to colleges and universities in the United States
- C. In an American newspaper
- D. In a dictionary published in the United States

(Read this passage to answer no 47-48)

Tornadoes occur throughout the world, but for reasons that scientist are not fully able recognize, the great majority occur in the United States. Approximately 700 tornadoes a year occur within the US, and this comprises three-quarters of the worldwide total. Most of the tornadoes take place in the Midwest and the southern states that border the Gulf of Mexico. The most devastating tornado on record occurred on March 18, 1925, in the state of Missouri, Illinois, and Indiana. Travelling at an average speed of 60 miles per hour, the winds at the center of the storm swirled around at considerably more than 200 miles per hour. A total of 689 people died, and countless more were injured, at the hands of this killer storm.

47. Which of the following is, according to the passage, NOT well understood by scientist.

- A. Why tornadoes mostly occur in the US
- B. Why 700 tornadoes occur annually
- C. Why the Gulf of Mexico is the source of tornadoes
- D. Why tornadoes average speed is 60 miles per hour

48. According to the passage, which of the following statements is TRUE about tornadoes.

- A. The cause of great majority of tornadoes is known
- B. Missouri, Illinois and Indiana are the states free from tornadoes
- C. There are less than 700 tornadoes happening in the whole world
- D. More than 689 people were victims of tornadoes happening in 1925

(Read this passage to answer no 47-48)

Libraries contain both fiction and nonfiction books. For example, Sir Thomas More's book "Utopia" a story about an unreal island where everything is perfect, would be in the fiction collection. On the other hand, a book which gives facts about a real island would be in the nonfiction collection.

49. A book in the fiction collection of a library will contain ____.

- A. True facts
- B. Information about islands
- C. A story which is unreal
- D. Only perfect things

Section III. Vocabulary

50. I want to buy a car, but I could not afford it. The underlined word means:

- A. Know
- B. Listen to
- C. Pay for
- D. Find

51. Most of your sentences are too long. You need to abbreviate them to make your idea clearer.

- A. Lengthen
- B. Shorten
- C. Extend
- D. Draw out

52. To be effective, a sales letter must, with every sentence, take into account the needs and desire of its readers.

- A. Consider
- B. Weigh
- C. Reflect
- D. Describe

53. The rumor has widely spread among the people in the city.

- A. Permeated
- B. Allotted
- C. Flown
- D. Extended

54. Your office is big and spacious.

- A. Vacant
- B. Roomy
- C. Lavish
- D. Modern

55. Ms. Rini taught a class of intractable children.

- A. Obedient
- B. Uncontrollable
- C. Very ugly
- D. Willing to work

56. OPEC correctly forecast that cutbacks in quantity demanded would be small.

- A. Think
- B. Produce
- C. Anticipate
- D. Reduce

57. Rupiah is used as a tool of exchange in our beloved country.

- A. A means

- B. An organ
- C. An equipment
- D. A share

58. She believes that teaching is a noble profession.

- A. Promotion
- B. Vocation
- C. Task
- D. Appointment

59. In the scale of preference, essential commodities come first.

- A. Most important
- B. Elastic
- C. Additional
- D. Particular

60. One of the goals of European community is to agree on a single currency by 1999.

- A. Arguments
- B. Obstacles
- C. Objectives
- D. Complication

Soal Bahasa Inggris USM STIS 2009

Waktu : 60 Menit

Petunjuk

- Di bawah setiap soal dicantumkan 5 kemungkinan jawaban masing masing diberi kode A, B, C, D atau E. Gunakan pensil 2B untuk menghitamkan lingkaran yang berisi kode jawaban yang saudara anggap benar pada lembar jawaban computer (LJK)
- Nilai Jawaban tiap soal adalah :
2 untuk jawaban benar
0 untuk tidak ada jawaban
-1 untuk jawaban salah
- Mengganti jawaban dilakukan dengan cara melingkari kode jawaban baru yang dipilih kemudian bubuhkan tanda silang di dalam lingkaran jawaban sebelumnya.
- Lembar jawaban tidak boleh kotor dan terlipat
- Hanya lembar jawaban yang dikumpulkan, sedangkan soal bisa dibawa pulang.

Selamat Mengerjakan

*Di balik kesulitan, pasti terdapat kemudahan
Di balik kesusahan, pasti terdapat kebahagiaan*

Direction :

The problem consist of four section. Four words or phrases, marked A, B, C, and D given beneath each sentence. You are to choose the one word or phrase. Section 1 : to complete each sentence (no : 1-25); section 2 : to find each synonym of the underlined word (no : 26-45); section 3 : to analyze each problem of the underlined word (no: 46-50); section 4: to answer each question (no: 51-60).

1. Indonesia ____ more than 13.000 islands.

A. Is
B. Have
C. Although
D. Which
E. Has

2. "Why don't you ask your sister to come along with us to the movie?"

"I did, but she ____ stay at home."

A. Used to
B. Would rather
C. Can
D. Could
E. Might

3. ____ three people have died of cholera, the old people of the village refused to get an injection against it.

A. However
B. In spite of
C. Since
D. Although

E. Despite

4. "Harry arrived home very late last night, but he said he went straight home from work."

"He must ____ in a traffic jam."

A. Caught
B. Be catching
C. Have caught
D. Be caught
E. Have been caught

5. The dishes we had for lunch were all delicious, ____?

A. Did'nt they
B. Had'nt they
C. Were they
D. Were'nt they
E. Had they

6. "____"
"Neither does she."

A. I also sew my own clothes.
B. I don't sew my own clothes.
C. She can not sew her own clothes.
D. Nor do I sew my own clothes.
E. Does she sew her own clothes?

7. Statistics denotes a discipline, the art and the science of ____ from the particular to the general.

A. Making inferencing
B. Makes inferencing
C. Making inference
D. Makes inference

- E. Making description
8. Do you know that the moment some amazing experiments ____ by the university research biologist?
- A. Are being carried out
 - B. Carried out
 - C. To carry out
 - D. Be carry out
 - E. To be carry out
9. The way professor Andi teaches English not only keeps the students' interest ____
- A. And also increases their motivation
 - B. but also increasing their motivation
 - C. And he also increases their motivation
 - D. And also to increase their motivation
 - E. but also increases their motivation
10. The student are collecting money, food, and clothes for the people ____ house were destroyed in the fire last week.
- A. Whose
 - B. Who
 - C. Whom
 - D. That
 - E. Which
11. The student missed the lesson because he was day dreaming. He wished he had paid attention to the lesson. It means that students ____
- A. Had paid attention to the lesson
 - B. Doesn't miss the lesson
 - C. Didn't pay attention to the lesson
 - D. Doesn't pay attention to the lesson
 - E. Didn't miss the lesson
12. "This English text on Biology is too difficult to read."
"Well, You'd better ____.
- A. Translate it
 - B. Have it translated
 - C. Be translating it
 - D. Have translated it
 - E. To translate
13. A ray of light ____ the center of a thin lens keeps its original direction.
- A. Is passed through
 - B. Passes through
 - C. Passed through
 - D. Has passed through
 - E. Passing through
14. If he ____ more confident during in the interview, he might have got the job he wanted.
- A. Were
 - B. Would be
 - C. Could have been
 - D. Had been
 - E. Was being

15. My father said, "Don't waste your money on cigarettes."
This means ____

- A. My father told me that he didn't waste my money on cigarettes.
- B. My father asked me if I had wasted my money on cigarettes.
- C. My father allowed me to waste my money on cigarettes.
- D. My father said that I didn't waste my money on cigarettes.
- E. My father advised me not to waste my money on cigarettes.

16. Careless dumping of ____ waste into ciliwung river has caused serious water pollution.

- A. Industrial
- B. Industry
- C. Industrialist
- D. Industrialized
- E. Industrialize

17. Coding of data is a technique used to reduce the amount of work ____ in the calculation of statistics.

- A. Requiring
- B. Is required
- C. To be required
- D. To require
- E. Required

18. We allowed the children to watch their favourite TV

program yesterday, only after they ____ doing their school assignment.

- A. Were finishing
- B. Have finished
- C. Had finished
- D. Would finish
- E. Would have finished

19. Having sent his letter of application, ____.

- A. The company was expected to send a quick reply
- B. A quick reply was expected from the company
- C. They expected the company to send a quick reply
- D. Bimo expected to get a quick reply
- E. It was expected that the company would send a quick reply

20. He hasn't got enough experience ____ principle of our school.

- A. Promoted
- B. To be promoted
- C. To be promoting
- D. Be promoted
- E. Will be promoted

21. The president director agreed that performance of the company has not been good for the last few years. In fact, its organization ____ now for improvement.

- A. Is being restructured

- B. To be restructured
C. Is restructuring
D. Is to restructure
E. Being restructured
22. I couldn't find the museum you told me about. I ____ the wrong bus.
- A. Should have taken
B. Should take
C. Would have taken
D. Ought to take
E. Must have taken
23. The articles on this newspaper, ____ are about educational system in Indonesia, are written by a well-known linguist.
- A. Which of most
B. In which
C. Of which
D. Most of which
E. That most
24. I asked Bob ____.
- A. Where did he come from?
B. Where was he coming from
C. Where he came from
D. Weather he came from
E. Where was he from
25. "Now that she has grown up, my niece has her old dresses lengthened."
This means that ____
- A. My niece asked somebody to lengthen her old dresses
B. My niece has lengthened her old dresses
C. My niece has to lengthen her old dresses
D. My niece has been told to lengthen her old dresses
E. My niece has been asked by someone to lengthen her old dresses
26. "If the plane had taken off on time, we wouldn't have been late for the opening of the seminar."
This means that we were late because the flight ____.
- A. Has to be delayed
B. Was delayed
C. Was going to be delayed
D. Had not been delayed
E. Was not delayed
27. No single factor explains why ____ vary so greatly among individuals.
- A. The affected aging
B. The effects of aging
C. Aging has an effect
D. The aging effect
E. Aging effects
28. Andrea Hirata is an author ____ for his evocative and memorable vision of frontier prairie life.
- A. Whom readers
B. The praise of readers
C. Whom readers praise
D. Whom praising
E. Whose readers are praised

29. Researchers have long debated about ____ moon titan contains hydrocarbon oceans or lakes.
- Saturn's
 - Wheater it is Saturn's
 - Wheater Saturn is a
 - Wheater Saturn's
 - What Saturn's
30. The president ____ the election by a landslide.
- Win
 - He win
 - Won
 - He won
 - Winner
31. Eight percent of the people eligible to vote are between 18 and 21. In election, 85% of those eligible to vote who were between 18 and 21 actually vote. In that election, people between 18 and 21 who actually voted were what percent of those people eligible to vote?
- 6,4
 - 6,8
 - 4,2
 - 8
 - 8,5
32. If n and p are both odd numbers, which of the following numbers must be even number?
- $n + p + 1$
 - np
 - $np + 2$
 - $n + p$
 - $2n + p$
33. A cab driver's income consist of his salary and tips. His salary is \$50 a week. During one week his tips were $\frac{5}{4}$ of his salary. What fraction of his income for the week came from tips.
- $\frac{1}{2}$
 - $\frac{4}{9}$
 - $\frac{5}{4}$
 - $\frac{5}{8}$
 - $\frac{5}{9}$
34. A sports jacket marked \$50 is offered at a discount of 20 percent during a storewide sale. At this reduced price the dealer makes a profit of 25 percent on the cost. The cost to dealer is
- \$30
 - \$31
 - \$32
 - \$38
 - \$40
35. A bus uses one gallon of gasoline to travel 15 miles. After a tune-up, the bus travels, 15% father on one gallon. How many gallon of gasoline (to nearest tenth) will it take for the bus to travel 150 miles after a tune-up?
- 8,5
 - 9,0
 - 8,9
 - 8,7
 - 10,0

36. If the length of rectangle is increased by 10% and the width of the same rectangle is decreased by 10%, then the area of rectangle

- A. Decreases by 1%
- B. Decreases by 20%
- C. Is unchanged
- D. Increases by 10%
- E. Increases by 5%

37. A box contain 12 poles and 7 pieces of net. Each piece of net weighs 0,2 pounds; each pole weighs 1,1 pounds. The box contents weight 16,25 pounds. How does the empty box weigh?

- A. 1,2 pounds
- B. 6,15 pounds
- C. 2,75 pounds
- D. 1,65 pounds
- E. 16 pounds

38. How much simple interest will \$2000 earn in 18 months at an annual rate of 6%?

- A. \$120
- B. \$180
- C. \$216
- D. \$1800
- E. \$2160

39. If the radius of circle is increased by 6%, then the area of the circle is increased by

- A. 0,36%
- B. 3,6%
- C. 12,36%

- D. 6%
- E. 36%

40. A screwdriver and a hammer currently have the same price. If the price of a screwdriver rises by 5% and the price of a hammer goes up by 5%, by what percent will the cost of 2 screwdrivers and 3 hammers rise?

- A. 5%
- B. 10%
- C. 15%
- D. 20%
- E. 25%

Question 41-45 refer to the following passage

Professor Unyil visited Mr. And Mrs. Ucrit who lived on the other side of town. After a good dinner and a play of chess he said "I'm going to walk home now". Mrs Ucrit looked out the window and said, "But it is raining outside. Please stay here tonight". She went and prepared the guest room for him. After a few minutes, she came back to living room, but the professor was not there.

Mr. And Mrs. Ucrit waited for more than 30 minutes, and then they started to go to bed. But then somebody knocked at the door of the house. It was professor. He was very wet. Mr. And Mrs. Ucrit were very surprised to see him. They said, "You are here!". "Yes" the

professor answered. "I went home to get my pajamas".

41. The following statements are true, except

- A. Mrs. Ucrist asked Professor Unyil to spend the night at her house
- B. Professor Unyil went home to take his pajamas
- C. Professor Unyil lived next to Mr. and Mrs. Ucrist house
- D. Mr. and Mrs. Ucrist were relieved to see professor Unyil at the back door of the house
- E. Professor Unyil went home on foot

42. After reading the text, we can conclude that Professor Unyil is a _____ person,

- A. Foolish
- B. Humble
- C. Generous
- D. Selfish
- E. Very smart

43. The type of the text is a _____

- A. Procedure
- B. Recount
- C. Narrative
- D. Report
- E. Spoof

44. The last paragraph of the text is called the _____

- A. Twist
- B. Conclusion

- C. Complication
- D. Orientation
- E. Recommendation

45. The communication purpose of the text is _____

- A. To explain why something occurs
- B. To describe the participants in the story
- C. To persuade the readers that something is the case
- D. To retell events for the purpose of information something
- E. To retell events with humorous twist

Answers the question:

The invention of the phonograph happened quite by accident. Thomas Edison moved to Menlo Park, New Jersey, in 1876, where he established an industrial research laboratory. There, Edison was working on a carbon telephone transmitter to improve the existing Bell telephone System. In that laboratory a year later, Edison invented the phonograph while he was trying to improve a telegraph repeater. He attached a telephone diaphragm to the needle repeater; in this way, he was able to reproduce a recording that could be played back. After he made some improvements to the machine, he tested it. He recited "Mary Had A Little Lamb" into the

machine and played his voice back to a very surprised audience.

46. What is the best title for the paragraph?

- A. Thomas Edison's Inventions
- B. A surprise Invention
- C. Improvements in the Telephone and Telegraph
- D. The History of Menlo Park
- E. Mary had a little lamb

47. According to the passage, the invention of the phonograph

- A. Was Edison's principal project
- B. Was surprising to no one
- C. Took many years
- D. Was quite unplanned
- E. Was to astonished audience

48. In what year did the invention of the phonograph occur?

- A. 1876
- B. 1878
- C. 1877
- D. 1879
- E. the article doesn't say

49. According to the passage, how was the phonograph made?

- A. With a telephone needle and a recorder
- B. From a recording of a telegraph
- C. With only a telegraph repeater

D. with attachment of a telephone diaphragm

E. From a combination of telephone and telegraph parts

50. According to the passage, how did Edison test his new invention?

- A. He read a children's rhyme.
- B. He made improvements to the machine.
- C. He used a carbon transmitter.
- D. He reproduced the audience's voice.
- E. he used a telegraph transmitter.

50. According to the passage, how did the people feel when they heard Edison's rendition of "Mary Had a Little Lamb"?

- A. perplexed
- B. amazed
- C. aggravated
- D. detached
- E. Astonished

Question 52-55 refer to the following passage

But the success of science, both its intellectual excitement and its practical application, depends upon the self-correcting character of science. There must be a way of testing any valid idea. It must be possible to reproduce any valid experiment. The character or beliefs of the scientists are irrelevant; all that matters is whether the evidence supports his contention.

Arguments from authority simply do not count; too many authorities have been mistaken too often. I would like to see these very effective scientific modes of thought communicated by the schools and the media; and it would certainly be an astonishment and delight to see them introduced into politics. Scientists have been known to change their minds completely and publicly when presented with new evidence or new arguments. I cannot recall the last time a politician displayed a similar openness and willingness to change.

52. What does the passage mainly discuss?

- A. The rewards of intellectual excitement
- B. Practical application of an abstract theory
- C. Some similarities between politics and science
- D. An important characteristic of science
- E. Intellectual excitement of the science

53. What did the paragraph preceding the passage most probably discuss?

- A. Self-correction
- B. The achievements of science
- C. The scientific community
- D. Faulty information
- E. The origin of science

54. According to the passage, if a scientist repeats an experiment several times and does not produce similar results each time, the experiment must be

- A. Extremely complex
- B. Incorrectly recorded
- C. Scientific
- D. Stopped
- E. Invalid

55. According to the passage, which of the following is the most essential to scientist's work?

- A. Character
- B. Beliefs
- C. Evidence
- D. Theory
- E. Authority

Question 56-60 refer to the following passage

The first synthetic plastic was a thermosetting resin called ebonite, patented in 1843. Plastics are divided into two broad categories, thermosets and thermoplastics. The thermosets are material that, once heated, take on a permanent form that can not be changed by reheating, while thermoplastics repeatedly soften on heating and harden on cooling.

Much of the early work on plastics was on thermosets, and it may have been this limitation that prevented them from becoming highly acceptable materials. Another reason is that they were looked upon as substitute for existing materials, rather than as new materials requiring new

ideas in design and usage. Part of this "substitute" outlook still survives, with people disparaging plastics as second rate materials. However, with the major advances in formulation and use of plastics since the second world war, this attitude is now passing out of fashion.

56. What does the passage mainly discuss?

- A. The importance of plastics in the second world war
- B. Various uses for plastics
- C. The early history of synthetic plastics
- D. People's attitude toward new materials
- E. The use of plastics in the second world war

57. According to the passage, materials which can repeatedly be softened and hardened are called

- A. Materials
- B. Ebonites
- C. Thermosets
- D. Substitutes
- E. Thermoplastics

58. According to the passage, why may plastics not have been widely accepted at first?

- A. Initial research was on plastics with limited utility
- B. A world war caused plastics to be in short supply
- C. Existing plastics were not sufficiently heat resistant
- D. Some researchers felt that plastics were dangerous
- E. During the second world war, plastics were broadly used

59. Which of the following would be least useful if it were made from a thermoplastics?

- A. A vase for flowers
- B. A doorknob
- C. A table
- D. A coffee cup
- E. A chair

60. The paragraph following the passage most probably discuss

- A. The characteristics of plastics made in early 1800's
- B. The greater acceptance of plastics since the second world war
- C. The reason some people consider plastics inferior to other materials
- D. The absence of plastics from the world of fashion
- E. The differences between thermosets and thermoplastics

Soal Bahasa Inggris USM STIS 2010

Waktu : 60 Menit

Petunjuk

- Di bawah setiap soal dicantumkan 5 kemungkinan jawaban masing masing diberi kode A, B, C, D atau E. Gunakan pensil 2B untuk menghitamkan lingkaran yang berisi kode jawaban yang saudara anggap benar pada lembar jawaban computer (LJK)
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2 untuk jawaban benar
0 untuk tidak ada jawaban
-1 untuk jawaban salah
- Mengganti jawaban dilakukan dengan cara melingkari kode jawaban baru yang dipilih kemudian bubuhkan tanda silang di dalam lingkaran jawaban sebelumnya.
- Lembar jawaban tidak boleh kotor dan terlipat
- Hanya lembar jawaban yang dikumpulkan, sedangkan soal bisa dibawa pulang.

Selamat Mengerjakan

*Jangan senang bila dipuji
Jangan sakit hati bila dicela*

Direction:

The problem consist of four sections. Five words or phrases, marked A, B, C, D, and E, are given beneath each sentence. You are to choose the one word or phrase. Section 1: To answer each question (No: 1-10); Section 2: To complete each sentence (No: 11-35); Section 3: To find each synonym the underlined words (No: 36-50); Section 4: To analyze each problem (No:51-60)

Section 1: Reading Comprehension

Question 1-3 refer to following passage

When used for studies of learning and memory, the Octopus is more interesting subject than the squid. Unlike the free-swimming squid, which relies exclusively on its eyes to guide it to tasty fish or crab, the octopus often feeds off the bottom of the sea. It use not only its eyes but its tentacles to identify a likely meal. The brain of the octopus has two separate memory-storage areas-one for visual memories and one for tactile memories.

1. How does the squid find its food?
 - A. Both by sight and by touch
 - B. By touch only
 - C. By sight only
 - D. By tentacles only
 - E. In onone of the ways described above
2. The passage is mainly about

- A. A new way of feeding fish
 - B. Biological differences between two animals
 - C. How to go deep-sea fishing
 - D. A warning to deep-sea divers
 - E. How to squid getting food
3. According to the passage, which of the following can describe the octopus?
 - A. Its brain is simpler than that of the squid
 - B. It can't loo and touch at the same time
 - C. Its brain does not function very well
 - D. The memory of what it has seen and touched is contained in separate areas
 - E. Its brain used for visual memories only

Question 4-6 refer to the following passage

Economic expansion continued in May. Government reports showed gains in industrial production, personal income, and housing starts. Housing construction, however, remained sluggish, mainly because the cost of new homes has risen much faster than average incomes, but housing starts did show a small increase over those of April

4. The author's clais concerning economic expansion seem to be based on

- A. Government data in three the areas
 - B. Government budgetary reports
 - C. The author's own research
 - D. The author's personal insight
 - E. Industrial reports
5. According to the passage, housing construction is recovering slowly because
- A. The cost of a new home is higher than the government's price guide lines
 - B. New homes are being built at a faster rate than needed
 - C. New homes are selling faster than anticipated
 - D. Personal income are growing faster than new home prices
 - E. Prices of new homes have been going up faster than increases in people's incomes
6. According to the passage, which of the following is true of housing starts?
- A. They were slightly higher in May than in April
 - B. They were the same as in previous month
 - C. They were much lower in May than in April
 - D. They were slightly lower in May than in April
 - E. They were much higher in May than in April

Question 7-10 refer to the following passage

When, during the first quarter of the twentieth century echo sounding was developed to allow ships while under way to record the depth of the bottom, probably no one suspected that it would also provide a means of learning something about deep-sea life. But operators of the new instruments soon discovered that the sound waves, directed downward from the ship like a beam of light, were reflected back from any solid object they met. Answering echoes were returned from intermediate depths, presumably from school of fish, whales, or submarines; then a second echo was received from the bottom.

7. The author writes about something that happened during which of the following periods of time?
- A. 1800-1850
 - B. 1850-1900
 - C. 1900-1925
 - D. 1925-1950
 - E. 1950-1975
8. Had did operators send down into the water?
- A. Beams of flight
 - B. Small, solid object
 - C. New instruments
 - D. Solid objects
 - E. Sound waves
9. Which of the following enterprise would most likely be

interested in using the instruments mentioned?

- A. Sports equipment
- B. Sound-recording studios
- C. Sound instrument businesses
- D. Commercial fishing businesses
- E. Shipbuilding yards

10. For what purpose was the instrument originally designed?

- A. Communicating with dives
- B. Recording ocean depths
- C. Locating deep-sea life
- D. Building schools for fish
- E. Detecting submarines

11. The ... are conducting research on juvenile delinquency.

- A. Statistic
- B. Statistics
- C. Statisticians
- D. Statistician
- E. Statistical

12. "Several hotels in region are closing down." That's because tourism itself ... since last year."

- A. is declining
- B. had declining
- C. was declining
- D. has been declining
- E. declined

13. He asked me where I had purchased that raincoat. The directed speech of this statement is...

- A. Where had you purchased this raincoat?
- B. Where did you purchase this raincoat?
- C. Where would you purchase this raincoat?
- D. Where are purchasing this raincoat?
- E. Where were you purchasing this raincoat?

14. He had died before his latest book...

- A. has been published
- B. were published
- C. had been published
- D. would published
- E. was published

15. I overslept this morning. Thus, I miss the quiz Prof. Hamid gave. I wouldn't have missed it ...

- A. had I not overslept
- B. if I didn't overslept
- C. should I not overslept
- D. if I overslept
- E. had overslept

16. Surabaya, ... is more than three and half million, is Indonesia's second largest city situated in the eastern part of Java island.

- A. whom the population
- B. that the population
- C. whether the population
- D. the population of it
- E. whose population

17. Tommy: Terrible! This math problem is so difficult that I haven't found the answer yet. Can you help me?

Rendi: I wish I knew about math.

The underlined sentence means that Rendi ... about math.

- A. doesn't know
- B. didn't know
- C. hasn't know
- D. hadn't know
- E. wouldn't know

18. "Harry arrived home very late last night, but he said he went straight home from work."

He must ... in traffic jam. You know what Jakarta is like in terms of traffic jam.

- A. caught
- B. have been caught
- C. be caught
- D. have caught
- E. being caught

19. "At last, I finish typing this letter and I will get it copied soon before being mailed" means I'll ... before being mailed.

- A. copy the letter
- B. will have to type it
- C. ask someone to copy it
- D. have typed it
- E. be typing it

20. You know, my father will retire within the next few years. I hope that by time he retires, I ... a job.

- A. get

- B. will get
- C. have got
- D. will have got
- E. got

21. Having sent his letter of inquiry, ...

- A. The company was expected to get a quick reply
- B. Andika expected to get a quick reply
- C. A quick reply was expected from the company
- D. They expected the company to send a quick reply
- E. It was expected that the company would send a quick reply

22. "Have you considered ... to a boarding house closer to your school?"

- A. being moved
- B. to move
- C. moved
- D. moving
- E. move

23. He asked me ... had I turned up to the meeting the day before.

- A. what did I talk about
- B. if I am going to talk about
- C. what I talked about
- D. whether I have talked about
- E. what I would have talked about

24. I had insufficient budget to change my old car with the new

one and neither ... he have extra money to lend me some.

- A. does
- B. had
- C. did
- D. has
- E. will

25. Budi ... part of the homework assigned.

- A. did only
- B. only did
- C. only does
- D. doing only
- E. only doing

26. Customer: Excuse me. Could you show me where the fitting room is?

Shop assistant: Certainly, it's over there.
Customer: ...?

- A. Can I have this one, please?
- B. Does this one suit me?
- C. Will you try this one on?
- D. Could I try this one?
- E. Could you tell me how much its costs?

27. It's often difficult for new university students ... themselves to their new environment.

- A. they adopt
- B. adopting
- C. to adopt
- D. being adopted
- E. to be adopted

28. ... three people have died of cholera, the old people of the village refused to get an injection against it.

- A. however
- B. inspite of
- C. in as much as
- D. since
- E. although

29. By the time I moved to Ujung Pandang about three years ago, I ... in Jakarta for almost 10 years.

- A. had been living
- B. have lived
- C. lived
- D. will have lived
- E. had lived

30. The benefit ... the study is that it provides necessary information to anyone who needs it.

- A. which
- B. of
- C. that
- D. for
- E. because

31. "Have you ever taken part in student exchange program?"
My teacher asked me ... in student exchange program.

- A. I have ever taken part
- B. whether I have ever taken part
- C. had I ever taken part
- D. if I have take part

- E. whether I had ever taken part
32. Psychology is as ... as statistics.
- A. interest
 - B. interests
 - C. interesting
 - D. same interested
 - E. interested
33. ... variety of flowers in the show, from simple carnations to the most exquisite roses.
- A. there was a wide
 - B. a wide
 - C. there were a wide
 - D. many
 - E. was there
34. There was never any talk of such a thing ... ?
- A. was it
 - B. was it not
 - C. wasn't there
 - D. was there
 - E. there was not
35. Some students have finished their papers ... haven't.
- A. another
 - B. others
 - C. other
 - D. the other
 - E. the others
36. Neighboring states often sign trade agreement with one another.
- A. peacefull
 - B. friendly
 - C. developing
 - D. adjacent
 - E. faraway
37. The company issues an annual report every March.
- A. a yearly
 - B. a comprehensive
 - C. a financial
 - D. a product
 - E. a completely
38. X-rays are basically a form of radiation.
- A. rarely
 - B. definitely
 - C. probably
 - D. frequently
 - E. fundamentally
39. Food must be moist in order to have a taste.
- A. delicious
 - B. damp
 - C. nutritious
 - D. appetizing
 - E. chewed
40. Soaring rates of interest have recently made it difficult for young couples to buy their own homes.
- A. slowly rising

Section 3 : vocabulary

- B. very expensive
C. rapidly rising
D. extremely painful
E. very high
41. Formerly of interest to scientist in relation to its salivary glands, the fruitfly has more recently been important in studies of natural rhythms.
- A. previously
B. originally
C. mainly
D. subsequently
E. primarily
42. The author lived for years near one of the many creeks flowing into that part of Bengawa Solo River.
- A. lakes
B. ponds
C. streams
D. swamps
E. dams
43. The ministers reiterated his intention of resigning.
- A. refused
B. stated
C. described
D. reported
E. repeated
44. Experiment have shown that exposure to acid rain can have a lethal effect on plants.
- A. an explosive
B. a deadly
C. an immediate
D. a hideous
E. a fertile
45. Blue-green algae grow abundantly in salt marshes.
- A. primarily
B. slowly
C. on plants
D. in great number
E. quickly
46. The ministers reiterated his intention of resigning
- A. refused
B. repeated
C. described
D. reported
E. stated
47. The winners will be selected at random.
- A. by chance
B. by interviewing
C. by competition
D. by testing
E. by purpose
48. Pilfering by company costs many businesses thousands of dollars each year.
- A. absenteeism
B. tardiness
C. ignorance
D. purchasing
E. stealing
49. The compact dictionaries published in recent years are

not as unwieldy as some of the older editions

- A. complete
- B. tiresome
- C. reliable
- D. cumbersome
- E. remarkable

50. When he finally emerged from the cave after the cave after thirsty days, Gatoto was startlingly pale

- A. extraordinarily
- B. frantically
- C. astonishingly
- D. deceptively
- E. normally

51. Santi is three times old as Yanto, but 5 years ago, she was 5 times as old as he was. How old is Santi now?

- A. 10
- B. 12
- C. 24
- D. 30
- E. 36

52. If $a + 2b = 14$ and $5a + 4b = 16$, what is average (arithmetic mean) of a and b ?

- A. 1.5
- B. 2
- C. 2.5
- D. 3
- E. 3.5

53. One day in STIS college, $\frac{1}{12}$ of the students were absent, and $\frac{1}{5}$

of those present went on a field trip. If the number of students staying in college that day 704, how many students are enrolled in STIS?

- A. 840
- B. 960
- C. 1080
- D. 1600
- E. 3520

54. If $A = [1, 2, 3]$, $B = [2, 3, 4]$, and C is the set consisting of all the fractions whose numerators are in A and whose denominators are in B , what is the product of all of the number in C ?

- A. $\frac{1}{64}$
- B. $\frac{1}{48}$
- C. $\frac{1}{24}$
- D. $\frac{1}{12}$
- E. $\frac{1}{2}$

55. The price of load bead was increased by 20%. How many loaves can be purchased for the amount of money that used to by 300 loaves?

- A. 360
- B. 320
- C. 250
- D. 240
- E. 225

56. Lestari bought a Rp 60.000 t-shirt o sale at 10% off. How much did she pay, including 10% sales tax?

- A. Rp. 55.150

- B. Rp. 57.000
- C. Rp. 58.500
- D. Rp. 59.400
- E. Rp. 60.000

57. There are twice as many girls as boys in English class. If 30% of the girls and 45% of the boy have already handed in their book reports, what percent of the students have not yet handed in their reports?

- A. 25%
- B. 35%
- C. 50%
- D. 60%
- E. 65%

58. On a test consisting of 80% questions, Nina answered 75% of the first 60 questions correctly. What percent of the other questions does she need to answer correctly for her grade on the entire exam to be 80%?

- A. 100%

- B. 95%
- C. 90%
- D. 85%
- E. 80%

59. If 80% of the applicants to a program were rejected, what is the ratio of the number accepted to the number rejected?

- A. $\frac{1}{4}$
- B. $\frac{1}{5}$
- C. $\frac{2}{5}$
- D. $\frac{4}{5}$
- E. $\frac{4}{1}$

60. Let M be the median and m the mode of the following set of numbers: 10, 70, 20, 40, 70, 90. What is the average (arithmetic mean) of M and m ?

- A. 50
- B. 52.5
- C. 57.5
- D. 60
- E. 62.5

Soal Bahasa Inggris USM STIS 2011

Waktu : 60 Menit

Petunjuk

- Di bawah setiap soal dicantumkan 5 kemungkinan jawaban masing masing diberi kode A, B, C, D atau E. Gunakan pensil 2B untuk menghitamkan lingkaran yang berisi kode jawaban yang saudara anggap benar pada lembar jawaban computer (LJK)
- Nilai Jawaban tiap soal adalah :
2 untuk jawaban benar
0 untuk tidak ada jawaban
-1 untuk jawaban salah
- Mengganti jawaban dilakukan dengan cara melingkari kode jawaban baru yang dipilih kemudian bubuhkan tanda silang di dalam lingkaran jawaban sebelumnya.
- Lembar jawaban tidak boleh kotor dan terlipat
- Hanya lembar jawaban yang dikumpulkan, sedangkan soal bisa dibawa pulang.

Selamat Mengerjakan

*Tulislah kebaikan orang lain kepadamu di atas batu,
Tulislah keburukan orang lain terhadapmu di atas air*

Section I:
Structure and Written Expressions

1. X: "When are you going to tell your sister the good news?"
Y: "When she from her business trip"

A. returns
B. is going to return
C. will be returning
D. was returning
E. had returned
2. Jupiter's four moons through a telescope by Galileo.

A. were being first viewed
B. first viewed
C. had been first viewed
D. were first viewed
E. first being viewed
3. "What did your father say when you told him you had lost all your money?"
"He was so angry he couldn't say anything."

A. therefore
B. after
C. that
D. when
E. so
4. After the students had completed the test, they handed in their paper and left the room.
We can also say the test, the students handed in their paper and left the room.

A. completing
B. completed
C. to have complete
D. having completed
E. to have completed
5. The increasing in the sales of new cars not expected to make traffic jams worse.

A. be
B. being
C. is
D. are
E. to be
6. "Why is he so happy today?"
"....."

A. He has been given an increasing just in salary
B. Just he has been given an increasing in salary
C. He has been just given an increasing in salary
D. He has been given just an increasing in salary
E. He has just been given an increasing in salary
7. We are going on a long trip so we must

A. to have the car checked
B. have had the car checked
C. have checked the car
D. have the car checked
E. had the car checked
8. The foreman said: "Finish your task and do it well."
It means

- A. the foreman ordered me to finish my task and do it well
 B. the foreman asked to finish his task and do it well
 C. the foreman asked me to finish my task and do it well
 D. the foreman told me to finish his task and do it well
 E. the foreman told me to finish your task and do it well
9. Ander : " I like the film very much"
 Aziz : " I have seen it three times."
 A. I am too
 B. So am I
 C. So do I
 D. I don't either
 E. Neither do I
10. Father: "What are you doing, Ton?"
 Anton: "I'm studying, Father."
 Father: "Oh, I see. You"
 A. should turn on the television
 B. should turn off the television
 C. would rather turn on the television
 D. would rather put out the television
 E. should break the television
11. Miko preferred sandwich
 A. or rice better
 B. than rice
 C. to having rice
 D. rather than rice
 E. to rice
12. "Which dress shall I wear?"
 "I think the blue dress is the green one."
 A. very beautiful
 B. more beautiful from
 C. more beautiful than
 D. much beautiful than
 E. more beautifully than
13. "He's already read the letter,?"
 A. hasn't he
 B. isn't he
 C. doesn't he
 D. is he
 E. has he
14. The children seemed to be in watching the program.
 A. interesting
 B. interest
 C. interestingly
 D. interestedly
 E. interested
15. "My car is broken. me downtown on your way to work this morning?"
 "Not at all."
 A. May you take
 B. Do you mind talking
 C. Why don't you take
 D. Can't you take
 E. Do you think you can take
16. "There's letter stating that Darius has to leave for the U.S. next week."

"Well, he The news right away then."

- A. should left
- B. should be tell
- C. should be telling
- D. should have told
- E. should be telling it

17. Ferry: "Why don't you try to a find a job in factory?"

"With the money you earn, you can buy things you need."

Aldi: "If I worked in a factory, I wouldn't have much time to study."

What does the underline sentence mean?

- A. Aldi works hard in factory
- B. Ferry allows Aldi in a factory
- C. Aldi doesn't work in factory
- D. Aldi worked in factory
- E. Aldi didn't work in a factory

18. "Did you get a compensation for your car?"

"No, I didn't. If only"

- A. I had insured it
- B. I should insure it
- C. I have insured it
- D. I wouldn't insure it
- E. I would insure it

19. Linda is considered to the deep.

- A. not to go
- B. not go to
- C. not go
- D. not goes
- E. not going

20. A few days after interview, I receive a letter me a job

- A. offered
- B. has offered
- C. being offered
- D. offering
- E. it was offering

21. Smoking can be the cause of many illness and respiratory disorders., it may harm non- smoker.

- A. in addition
- B. however
- C. consequently
- D. nevertheless
- E. otherwise

22. I didn't hear because there was too much noise when I was sitting.

- A. what said
- B. what did he say
- C. what he said
- D. what was he saying
- E. what was saying

23. As soon as the news of the killing of the innocent prisoner spread out, people run through the street, breaking windows, setting fire to cars, and

- A. the destruction was on everything in their path
- B. destroying everything in their path
- C. the destroying of everything was in their path

- D. everything in their path was in destruction
E. everything in their path was destroyed
24. Teacher: "Why was Irene absent yesterday?"
Indah: "What did the teacher want to know, Ayu?"
Ayu: "She wanted to know"
- A. if Irene was absent
B. why Irene had been absent
C. why was Irene absent
D. that Irene had been absent
E. why Irene was absent
25. Sue: "I didn't enjoy the movie last night."
Bob: "Neither did I."
From the dialog we know that
- A. Bob enjoyed the movie last night but Sue didn't
B. Not only Sue but also Bob enjoyed the movie last night
C. Both Sue and Bob didn't enjoy the movie last night
D. Bob enjoyed the movie last night, and did Sue
E. Either Sue and Bob enjoyed the movie last night.
26. My English teacher always says that the more we practice our English
- A. then we become more fluent
B. of course we become more fluent
- C. we are becoming more fluent
D. the more fluent we become
E. so we will become fluent
27. Anti-nutrients appears to be linked to such things as traffic pollution, antibiotics, deep field food, processed meat and the of plastic and other chemicals in water.
- A. present
B. presence
C. presentation
D. presently
E. presentable
28. "We are running out of the fruits, while Fifi needs some this morning as she is on a diet."
"You to the neighboring fruit stall, then!"
- A. could hurry
B. would rather hurry
C. may hurry
D. had better hurry
E. might hurry
29. "Can we postpone the class meeting until Friday?"
"I'm afraid not. I basketball on Friday."
- A. will have been playing
B. would play
C. have been playing
D. always play
E. played
30. Had he handed in the application, he last week.

- A. was allowed to join the interview test
 - B. will have been allowed to join me interview test
 - C. would be allowed to join me interview test
 - D. was being allowed to join the interview test
 - E. would have been allowed to join me interview test
31. She went to the blackboard as if she knew how to solve the problem.
The underline words mean
- A. she ought to know how solve the problem
 - B. she actually couldn't solve the problem
 - C. she definitely knew how to solve the problem
 - D. she should know how to solve the problem
 - E. she succeeded in solving the problem
32. Many people in Sidoarjo are looking forward to
- A. witness
 - B. witnessed
 - C. be witnessing
 - D. being witnessing
 - E. have witnessed
33. is big surprise to his colleagues.
- A. Wljaya has been promoted to replace the retired Financial Manager
 - B. That Wijaya has been promoted to replace the Financial Manager
 - C. I hear Wijaya has been promoted to replace to retired Financial Manager
 - D. Do you know Wijaya has been promoted to replace the retired Financial Manager
 - E. Why was Wijaya promoted to replace the retired Financial Manager
34. Ever since the information technology revolution of late 1980's, of personal computer and the microchip, the company, from the managing director down the man in the mailroom, has been striving for a constant policy of excellence.
- A. occasional use
 - B. occasional in the use
 - C. occasion, and the use of
 - D. occasioned by the use
 - E. occasionally used
35. "Now that she has grown up, my niece has her old dresses lengthened."
This mean that
- A. My niece has lengthened her old dresses
 - B. My niece has been asked by someone to lengthen her old dresses
 - C. My niece has to lengthen her old dresses

- D. My niece has been told to lengthen her old dresses
E. My niece asks someone to lengthen her old dresses
36. Julia asked me if I had come to the party the day before.
In other word: Julia said "....."
- A. Did you come to the party the day before?
B. Do you come to the party this evening?
C. Did you come to the party yesterday?
D. Do you come to the party tomorrow?
E. Do you come to the party yesterday?
37. "I called him several times yesterday but there was no answer."
"He out of town."
- A. might have been
B. would rather so
C. should have been
D. had better be
E. would rather been
38. Simon: "What would you rather do in the morning, walking or running?"
Joko: "I'd rather walk than run."
From the dialog above, we know that.....
- A. Joko prefers to run
B. Joko hates running
C. Joko likes running better than walking
D. Joko doesn't like walking
E. Joko prefers walking than running
39. Shiren: "....."
Saskia: "For almost five years."
- A. When did you study English?
B. How many years will you study English?
C. How long have you studied English?
D. When will you study English?
E. When do you study English?
40. The bus came after I for about twenty minutes.
- A. have been waiting
B. have waited
C. was waiting
D. had been waiting
E. am waiting

Section 2: Vocabulary (41 – 50)

Direction:

In question 41 – 50 each sentence has an underline word or phrase. Below each sentence word or phrase. Below each sentence are five other word or phrase, marked A,B,C,D,E. You are to choose the one word or phrase that keeps the meaning of the original sentences if it substitutes for the underlined word or phrase.

41. A democratic leader delegates authority and responsibility to other.
- A. disputes
B. concentrates
C. directs

- D. delivers
E. disseminates
42. Imagine the advertiser's chagrin when he realized that he had put the wrong date in the ad.
- A. humiliation
B. indifference
C. surprise
D. anger
E. annoy
43. Prabu felt confident about his grade on the test he had just taken.
- A. depressed
B. sure
C. estatic
D. uncertain
E. timid
44. When it comes to buying clothes, Herman is impetuous.
- A. illustrious
B. immune
C. impolite
D. implicit
E. impulsive
45. Mathematics is a compulsory subject in Indonesian high schools.
- A. difficult
B. easy
C. required
D. despised
E. optional
46. Volunteer firefighter valiantly tried to extinguish the raging forest fire.
- A. wretched
B. sluggish
C. intense
D. riling
E. moderate
47. There is campaign against those hunter who mercilessly slaughtered baby seals.
- A. net
B. capture
C. kill
D. skin
E. nurture
48. The speaker walked confidently and quickly to the podium.
- A. assuredly
B. carefully
C. clumsily
D. thoughtfully
E. oddly
49. As we approached the pyramids, a massive stone sphinx greeted us at the entrance.
- A. terrifying
B. inspiring
C. immense
D. magnificent
E. tiny
50. The gas company detected a leak in the main line an

evacuated all the tenants of the building.

- A. discovered
- B. smelled
- C. expected
- D. predicated
- E. suspected

Section 3:

Reading Comprehension

Question 51 – 55 refer to the following passage:

In 776 B.C., the first Olympic Games were held at the foot of Mount Olympus to honor the Greeks' chief god, Zeus. The Greeks emphasized physical fitness and strength in their education of youth. Therefore, contest in running, jumping, discus and javelin throwing, boxing and horse and the chariot racing were held in individual cities, and the winners competed every four years at the Mount Olympus. Winners were greatly honored by having olive wreaths placed on their heads and having poems sung about their deeds. Originally these were held at games of friendship, and any wars in progress were halted to allow the games to take place.

The Greeks attached so much importance to these games that they calculated time in four years cycle called "Olympiads" dating from 776 B.C.

51. Which of the following is not true?

- A. Winner placed olive wreaths on their own heads.

- B. The games were held in Greece every four years
- C. Battles were interrupted in the games
- D. Poems glorified the winners in song
- E. The games were conducted as games of friendship.

52. Why were the Olympic Games held?

- A. To stop wars
- B. To honor Zeus
- C. To crown the best athletes
- D. To sing songs about the athletes
- E. To educate young people

53. Approximately how many years ago did these games originated?

- A. 776 years
- B. 1235 years
- C. 2277 years
- D. 2767 years
- E. 2787 years

54. Which of the following contests was not mentioned?

- A. Discus throwing
- B. Boxing
- C. Skating
- D. Running
- E. Horse racing

55. What conclusion can we draw about the ancient Greeks?

- A. They liked to fight
- B. They were very athletic

- C. They liked a lot of ceremony
- D. They couldn't count, so they used "Olympiads" for dates
- E. They liked to be honored

Question 56 – 60 refer to the following passage:

Petroleum product, such as gasoline, kerosene, home heating oil, residual fuel oil, and lubricating oils, come from one source – crude oil found below the Earth's surface to as deep as 25,000 feet into the Earth's interior. Sometimes crude oils is secured by drilling a hole through the earth, but more dry hole are drilling than those producing oil. Pressure at the source or pumping forces crude oil to the surface.

Crude oil wells flow at varying rates, from ten thousands of barrels per hour. Petroleum product are always measured in 42 – gallons barrels.

Petroleum product vary greatly in physical appearance: thin, thick, transparent or opaque, but regardless, their chemical composition is made up of only two elements: carbon and hydrogen, which form compounds called hydrocarbons. Other chemical elements found in union with the hydrocarbons are few and are classified as impurities. Trace elements are also found out these are of such minutes quantities that they are disregarded. The combination of carbon and hydrogen forms many thousands of compounds which are possible because of the various positions and joining of these two atoms in the hydrocarbon molecule.

The various petroleum product are refined from the crude oil by heating and condensing the vapors. These products are the so – called light oils, such as gasoline, kerosene, and distillate oil. The residue remaining after the light oils are distilled is known as heavy or residual fuel oils and is used mostly for burning under boilers. Additional complicated refining processes rearrange the chemical structure of the hydrocarbon to products, some of which are used to upgrade and increasing the octane rating various types of gasoline.

56. Which of the following is not true?

- A. Crude oil is found below land and water
- B. Crude oils is always found a few hundred feet below the surface
- C. Pumping and pressure force crude oil to the surface
- D. A variety of petroleum products is obtained from crude oil
- E. A residual fuel oil is used mostly for burning under boilers

57. Many thousands of hydrocarbon compounds are possible because

- A. The petroleum products vary greatly in physical appearance
- B. Complicated refining process rearrange the chemical structure

- C. The two atoms in the molecule assume many positions
- D. The pressure needed to force it to the surface causes molecular transformation
- E. Some of which are used to increasing the octane of the gasoline

58. Which of the following is true?

- A. The various petroleum products are produced by filtration
- B. Heating and condensation produce the various product
- C. Chemical separation is used to produce the various product
- D. Mechanical means such as the centrifuge are used to produce the various products

- E. Chemical elements found in union with the hydrocarbon are abundant

59. How is crude oil brought to the surface?

- A. Expansion of the hydrocarbons
- B. Pressure and pumping
- C. Vacuum created in the drilling pipe
- D. Expansion and contractions of the Earth's surface
- E. By drilling and flowing

60. Which of the following is not listed as light oil?

- A. Distillate oil
- B. Gasoline
- C. Lubricating oil
- D. Kerosene
- E. Heating oil

Soal Bahasa Inggris USM STIS 2012

Waktu : 60 Menit

Petunjuk

- Di bawah setiap soal dicantumkan 5 kemungkinan jawaban masing masing diberi kode A, B, C, D atau E. Gunakan pensil 2B untuk menghitamkan lingkaran yang berisi kode jawaban yang saudara anggap benar pada lembar jawaban computer (LJK)
- Nilai Jawaban tiap soal adalah :
2 untuk jawaban benar
0 untuk tidak ada jawaban
-1 untuk jawaban salah
- Mengganti jawaban dilakukan dengan cara melingkari kode jawaban baru yang dipilih kemudian bubuhkan tanda silang di dalam lingkaran jawaban sebelumnya.
- Lembar jawaban tidak boleh kotor dan terlipat
- Hanya lembar jawaban yang dikumpulkan, sedangkan soal bisa dibawa pulang.

Selamat Mengerjakan

*Kesombongan membuat buta mata hati
Sebab, kesombongan adalah awal mula kehinaan diri*

SECTION 1: STRUCTURE (1-40)

Direction : Choose the correct answer.

1. "He has to take a TOEFL test before leaving for the US"
"No ____ have to; he already took it a few months ago."

A. he ins't
B. he doesn't
C. he hasn't
D. he mustn't
E. he can't
2. 'Have they taken the injured to the hospital ?'
The passive voice form of the sentence is '____?'

A. will the injured boy be taken to the hospital
B. the injured boy is being taken by them to the hospital
C. is the injured boy taken to the hospital
D. the injured boy has been taken to the hospital
E. has the injured boy been taken to the hospital
3. Now that he has moves to my town, we can see each other regularly.
the underline words means ____ to my town, we can see each other regularly.

A. because he has moved
B. before he has moved
C. although he has moved
D. provided that he has moved
E. in the meantime he has moved
4. I wish someone answered my call. It's been ringing for about five minutes.
The underline sentence means ____.

A. someone will answer the phone
B. someone had answer my call
C. the phone has stopped ringing
D. no body answers the phone
E. i would answer the phone
5. Either the management or the education system of our institute ____ to be reviwed to the increase the number of graduates next year.

A. that needs
B. need
C. needing
D. they need
E. needs
6. Speech consist not merely of sound but ____ that follow various structural patterns.

A. that sound patterns are organized
B. organized sound patterns
C. of organized sound patterns
D. organizing sound patterns
E. in organizing sound patterns
7. When I was child, I didn't like to do house work, but my mother

had my room ____ before I could go out to play.

- A. cleaned
- B. to clean
- C. cleaning
- D. to be cleaned
- E. being cleaned

8. "Don't make noise children," she said. In other words we say ____.

- A. she told the children don't make noise
- B. she told the children not to make noise
- C. she said the children didn't make noise
- D. she didn't say the children should make noise
- E. She didn't say the children to make noise

9. STIS students ____.

- A. are intelligent, active and are diligence
- B. are intelligent, are active, and are diligent
- C. are intelligence, active, and dilligent
- D. are intelligent, active, and dilligent
- E. are intelligence, active, and dilligence

10. "was austin accepted at BPS ?"
"He might have been; I haven't seen him round for some time."
From the sentence, we may conclude that he ____.

- A. refuse to work for bps
- B. was probably accepted
- C. is not working for bps
- D. is still unemployed
- E. was certain accepted

11. 'Ali often stays at home. Ali sometimes takes a walk.'
We can also say ____.

- A. Ali llikes staying home than take a walk
- B. Ali would rather staying home than taking a walk
- C. Ali prefers staying home than taking a walk
- D. Ali prefers to stay home to take a walk
- E. Ali prefers staying home to taking a walk

12. The director of my company keeps telling us that the more we can sell our products, ____.

- A. then we can obtain more profits
- B. of course we can obtain more profit
- C. the more profits we can obtain
- D. we are getting more profit
- E. so we will get more profits

13. Neither the other facilities ____ ensure a comfortable stay for the guests.

- A. and also its service
- B. nor its services
- C. and not its service
- D. or its hotel services

- E. both its services
14. although the couple has been married for five years, they are still ____.
- A. childless
B. childness
C. childhood
D. childish
E. childbirth
15. tyron : "We are manufactures of environment friendly appliances."
Yumna :
"_____"
Tyron : "Well, research has shown that our products do not damage the ozon layer."
The most appropriate response by Yumna is:
- A. Sorry, I don't quite follow you
B. Could you say that again please ?
C. Did you say 'environment-friendly'?
D. What exactly do you mean by 'environment-friendly' ?
E. That's fabulous. I just cant't believe it.
16. Mother ____ the food by the time the children come home.
- A. cooks
B. cooked
C. will have cooked
D. will cook
E. has cooked
17. 'if I hadn't booked in advance, I would have had difficulties in getting good accommodation at a reasonable price.'
The sentence means: ____.
- A. It was difficult to get a room although I had reservation
B. I found a room in advance but it wasn't comfortable
C. The room I got was good but rather expensive
D. I was lucky to get a good room without reservation
E. I got a good room, and I didn't have to pay much
18. Uniqua : "Hy, why do you look so sad? something wrong?"
Andika : "yeah, I wish I had time to have a date with Tasya."
From the dialogue we know that ____.
- A. Uniqua promises to meet Tasya
B. Andika lost his chance to meet Tasya
C. Both Uniqua and Andika will visit Tasya
D. Andika and Uniqua have no time for date
E. Neither Uniqua or Andika has a date with Tasya
19. His father insisted on _____ medicine because he thinks it will enable his son to help many people.
- A. he is to study

- B. having studied
C. his studying
D. that he studies
E. he is studying
20. interested in developing tourism in Indonesia, _____.
- A. there is cooperation between the government and related education centers
B. the establishment of cooperation between government and related education centers has been realized
C. cooperation between government and related education centers has been established
D. the government cooperates with related education centers
E. it is necessary to establish cooperation between the government and related centers of education
21. he did not pass his oral examination because he was either nervous _____.
A. or not well prepared
B. or he did not prepare himself well
C. and did not prepare well
D. but he was not well prepared
E. but he was not well prepared
22. Pablo said, "I was not the winner."
It means _____.
A. Pablo wished that he is the winner
B. Pablo wished that he could be the winner
C. Pablo wished that he had been the winner
D. Pablo wished if he were the winner
E. Pablo wished if he is the winner
23. These are just a few of the many norms that every member of this society _____ expected to follow.
A. was
B. are
C. were
D. be
E. is
24. "Is Gerard coming to the party tonight?"
"Yes he asked me _____."
A. can he go with us?
B. if he could go with us
C. he went with us
D. going with us
E. whether he goes with us
25. the workers are demanding not only a raise in salary but also _____.
A. they want a longer annual leave

- B. to have a longer annual leave
C. a longer annual leave they asked
D. a longer annual leave
E. in getting a longer annual leave
26. my friend said, "I have never seen such a good film."
From the above statement, we may conclude that _____.
A. It is the first time he see a film
B. This is the best film he has ever seen
C. He seldom went to good movies
D. The film he saw was a bad one
E. He has never seen bad films before
27. Because of this knowledge and experience, Dr. Mario Sandy is recognized as an _____ in the field of linguistics.
A. Authorize
B. Authorized
C. Authoritarian
D. Authority
E. Author
28. Olla : "I never see you so nervous like this. What is happening to you?"
Raffi : "I have to do this complicated task but I don't know where to start."
The underlie words express _____.
- A. Incapability
B. Dissatisfaction
C. Uncertainty
D. Disagreement
E. Possibility
29. "Can you accompany me to go shopping this afternoon?"
"I guess so. Pick me up at 2 p.m and I _____ home from school."
A. have come
B. am coming
C. will have come
D. will be coming
E. will have been coming
30. Had our lecturer informed us in previous days that he would hold a test that day, we wuld have prepared all out fot it.
From this sentence, we know that the speaker _____.
A. failed to take the test
B. didn't get a satisfyingresult of the test
C. got a good score in the test
D. had known about the test
E. had not taken the course tested
31. 'Problem of transportation have caused donated food and clothing for the tsunami victims to be piled up to airport.'
'I wish _____.'
A. there are more volunteers to help
B. the victims shouls not have worried

- C. the government can ask for help
D. there were more helicopters available
E. the problem will be solved immediately
32. they have considered _____ down the factory because of continuous losses.
- A. closing
B. to close
C. they close
D. in closing
E. closed
33. participants of the state university entrance test, _____ are high-school graduated from java, are competing for a limited number of seats.
- A. which most of them
B. great number
C. most of who
D. the majority
E. lot of them
34. proponents of solar energy wonder _____ funded so few research projects.
- A. why the government has
B. has the government
C. why has the government
D. about the government
E. why the government was
35. At last I could finish sorting all this letters out, and I am going to get them mailed right away. The sentence means _____.
- A. someone is going to mail the letters if he finished
B. if finished I am going to mail the letters
C. someone is going to mail the letters unless I have finished sorting them out
D. someone is going to mail letters for me
E. before being mailed, the letters need to be sorted out
36. mother : "do you want meatballs or fried chicken?"
mother asked me _____.
- A. Whether I want meatballs or fried chicken
B. that I wanted meatballs or fried chicken
C. Whether I wanted meatballs or fried chicken
D. that I want meatballs or fried chicken
E. if I want meatballs or fried chicken
37. they left two hours ago, so they should be here soon. The statement that is similar in meaning : _____.
- A. They left two hours ago, so they must be here soon
B. They left two hours ago, so they're likely to be here soon
C. They left two hours ago, so they're ever here soon
D. They left two hours ago, so they will be here soon

- E. They left two hours ago,so they must have been here soon

38. Nikita : "This telegram is for my husband. He is out on duty."

"What do you recommend me to do?"

Milka : "Why don't you ring him and tell him that a telegram has arrived?"

In the dialogue above, Nikita is asking for Milka's ____.

- A. curiosity
- B. agreement
- C. permission
- D. information
- E. advice

39. "Until now I haven't found any decent place to live in"
"_____"

- A. I don't mind sharing my flat with you
- B. Well, I'm very fortunate
- C. You have to find a better one
- D. You shouldn't stay in your old place
- E. I guess you like the place don't you

40. Many people on the world are againsts the construction of nuclear plants in their neighborhood for fear of accidents that many harm their lives, nevertheless, _____'

- A. Most recently established stations are closed

- B. There is no future for the nuclear power industry
- C. Government insist on using nuclear power as alternative energy
- D. People still prefer various traditional kkind of energy
- E. Nuclear energy has many disadvantages over traditional ones

SECTION 2: VOCABULARY (41-50)

Direction:

In question 41-50 each sentence has an underlined word or phrase. Below each sentence are five other words or phrases, marked A,B,C,D, and E. You are to choose one word or phrase that keeps the meaning of the original sentences if it subsitutes for the underlined word or phrase.

Pilih jawaban yang maknanya sama dengan kata atau frasa yang digarisbawahi pada tiap soal berikut (41-50).

41. We decide to pay for the furniture on the installment plan.

- A. Cash and carry
- B. Piece by piece
- C. Credit card
- D. Bank note
- E. Monthly payment

42. Picasso was a well-known cubist painter.

- A. Artistic
- B. Celebrated
- C. Colorful

- D. Knowledgeable
E. Brilliant
43. The inquiry concerning the accident was handled by the police in chief.
- A. Gossip
B. Inquisitiveness
C. Recording
D. Investigation
E. Eagerness
44. Nearly half of the town's inhabitants are descendants of indigenous civilizations.
- A. Native
B. Backward
C. Hard-working
D. Poor
E. Diligent
45. That area of the country is laced with large and often dangerous river.
- A. Decorated
B. Evolved
C. Diluted
D. Elaborated
E. Crisscrossed
46. The tornado caused irreparable damage to the Florida citrus crop.
- A. Irresolute
B. Irrecoverable
C. Irresponsible
D. Irregular
E. Unsettled
47. The spy used a fictitious name while dealing with the enemy.
- A. Funny
B. Real
C. Foreign
D. Extraneous
E. False
48. Marvin's doctor said that he was obese and had to take immediate measures to correct the problem.
- A. Anemic
B. Tired
C. Corpulent
D. Petulant
E. Captious
49. Many new medicines today eradicate diseases before they became too widespread.
- A. Identify
B. Prolong
C. Suspend
D. Attach
E. Wipe out
50. She didn't say much but her tone or voice insinuated more.
- A. Blamed
B. Demanded
C. Intervened
D. Suggested
E. Expected

**SECTION 3: READING
COMPREHENSION (51-60)**

Direction:

Question 51 through 55 are based on following reading.

The space race is not simply the objective search for knowledge. It is often made out to be. It is just extension of the race for power on earth. Only the wealthiest nations can complete, and they do so in the name of scientific research. But in reality, all they are interested in is power and prestige. They want to impress us, their spectators with, a magnificent show of strength. Man has played the power game ever since he appeared on earth. Now they are playing it as it has never been played before. The space race is just another aspect of the age old argument that "might is right".

We are often told that technological know-how, acquired in attempting to get us into the orbit, will be utilized to make life better on earth. But what has the space race done to relieve the suffering of the earth's starving millions? In what way has it raised the standard of living of any one of us? As far as the layman is concerned, the practical result of all the expenditure of money and effort are negligible. Thanks to space research, we can now see television pictures transmitted live half-way across the globe, and housewife can use non-stick frying-pans in the kitchen. The whole thing becomes utterly absurd when you think that no matter what problems man overcomes, it is unlikely that he will ever be able to travel even the nearest star.

Poverty, hunger, disease, and war are man's greatest enemies, and the world would be infinitely better

place in the powerful nation devoted half as much money and effort to do these problems as they do the space race. For the first time in this history, man has the overwhelming technological resources to combat human suffering, yet he wasted them on meaningless pursuits.

51. According to the writer, the object of space race should be ____.
- A. The search for scientific knowledge
 - B. The competition for power
 - C. The search for objects in space
 - D. The extension of powerful race
 - E. The race for technological knowhow
52. The passage says that the wealthiest nations join the space race in order to ____.
- A. Impress us with their knowledge
 - B. Make the world better place
 - C. Express their interest in scientific research
 - D. Complete in the power game
 - E. Make the better life of the nations
53. We may conclude that the other countries do not participate in the space race because ____.

- A. They are afraid to lose the power game
- B. They lack necessary resources and manpower
- C. They are not interested in power and prestige
- D. They don't receive any benefit from the space race
- E. They are focusing on poverty alleviation

54. The word "meaningless pursuits" refers to ____.

- A. Powerful nation
- B. Technological resources
- C. Man's greatest enemies
- D. Impossible race
- E. Space research

55. The main idea of the third paragraph is ____.

- A. The space race is a waste of time and money
- B. Poverty, hunger, diseases, and war are our greatest enemies
- C. Great nations should help to relieve human suffering
- D. Powerful nations should devote half their money to space race
- E. The technological resources are important in space race

Question 56 through 60 are based on the following reading.

The village of Van Hai in Thailand is surrounded by valuable teak trees, but they sell to dealers. The law, however, does not prevent a

villager from selling his own house. So the canny village builds a house next to his own, made entirely of teak, then sells it to one of the merchants who drive up from Chiang Mai. This dealer merely dismantles it and carts away the timber.

The villagers normally have large families, and they explain their need for an extra house to authorities by claiming that they need more room for growing children. When they build the extra dwelling, they knock the nails in lightly so the planks can easily be removed.

You may call it a cottage industry.

56. The villagers ____.

- A. are not allowed to sell teak trees to dealers but they are allowed to build their houses out of teak
- B. are not allowed to chop down teak trees but are allowed to sell their own houses
- C. are not permitted to sell anything to dealers except their own houses
- D. who are canny are allowed to build their houses out of teak and sell them
- E. are not allowed to build their houses out of teak and sell them

57. the word "canny" means ____.

- A. able
- B. selfish
- C. evil
- D. shrewd

- E. egoistic
58. the word "dismantles" means ____.
- A. Constructs
 - B. decorates
 - C. disassembles
 - D. dismisses
 - E. collects
59. the villagers who explain their need for an extra house ____.
- A. usually have many children
 - B. need more room for growing children
 - C. usually have such large families that they have to sell their own houses
 - D. are not allowed to deal with dealers
 - E. need houses to be sold
60. The villagers build the extra dwelling ____.
- A. so as to provide more room for their growing children
 - B. which is called a cottage industry
 - C. for the authorities
 - D. made of teak in order to sell it to dealers
 - E. by building the dwelling out of teak trees

fisher education

Soal Bahasa Inggris USM STIS 2013

Waktu : 60 Menit

Petunjuk

- Di bawah setiap soal dicantumkan 5 kemungkinan jawaban masing masing diberi kode A, B, C, D atau E. Gunakan pensil 2B untuk menghitamkan lingkaran yang berisi kode jawaban yang saudara anggap benar pada lembar jawaban computer (LJK)
- Nilai Jawaban tiap soal adalah :
2 untuk jawaban benar
0 untuk tidak ada jawaban
-1 untuk jawaban salah
- Mengganti jawaban dilakukan dengan cara melingkari kode jawaban baru yang dipilih kemudian bubuhkan tanda silang di dalam lingkaran jawaban sebelumnya.
- Lembar jawaban tidak boleh kotor dan terlipat
- Hanya lembar jawaban yang dikumpulkan, sedangkan soal bisa dibawa pulang.

Selamat Mengerjakan

*Manusia yang berjiwa yang unggul
Selalu membuat rencana sebelum melakukan sesuatu*

1. "When are you going to tell your sister the good news?"
"When she _____ from her business trip."
A. Will be returning
B. Is going to return
C. Returns
D. Was returning
E. Had returned
2. "Last year I didn't have to pay from my brother's tuition fee."
"That's great. I heard he _____ a scholarship from foreign university"
A. Had received
B. Received
C. Was received
D. Would receiving
E. Has received
3. "The last three football match performances of PSSI were disappointing."
"You're right. _____, its manager has contacted Nil Maizar, a professional coach in football training for next competition."
A. So that
B. In addition
C. Therefore
D. In spite of that
E. More over
4. A few days after the interview I received a letter _____ me a job
A. Has offered
B. Offered
C. Being offered
D. It was offeing
E. Offering
5. Mrs. Tamara's way of teaching and dealing with student _____ her the name of model teacher.
A. To have earned
B. Have been earning
C. Have earned
D. Has earned
E. Has to earn
6. According to the latest issue of journal of Indonesia Medical Association, _____ can reduce the risk sudden cardiac death in men.
A. Fish being eaten every week
B. If we eat fish once a week
C. To eat weekly fish
D. Fish to be eaten weekly
E. Eating fish just once a week
7. The curtains are dirty; we _____ at the dry cleaner's
A. Must have washed them
B. Have washed them
C. Must have them washed
D. Are washing them
E. Washing them
8. Prabu: "Ratu, are you going to let me go without you?"
It means _____
A. Prabu asked whether Ratu is going to let him go without her
B. Prabu asked Ratu to let him go without me
C. Prabu told Ratu she was going to let him go without her

- D. Prabu asked Ratu if she was going to let him go without her
- E. Prabu asked if she was going to let Ratu go without him
9. The water flooding the street and _____ caused people to panic and leave their valuable behind.
- A. It was the heavy storm damaging the houses
- B. Also the heavy storm damaged the houses
- C. The heavy storm damaging the houses
- D. Because the heavy storm damaged the houses
- E. The houses were damaged the houses
10. "My car broke down this morning."
"It's your own fault, you _____ your brother for advice before you bought that used car."
- A. Should have asked
- B. Might ask
- C. Could ask
- D. May have asked
- E. Must have asked
11. "John prefers listening to the radio **than** reading newspaper."
This sentence means that _____
- A. John always reads newspaper
- B. John seldom listens to radio
- C. John likes listening to the radio very much
- D. John likes reading newspaper very much
- E. Listening to the radio and reading newspaper are John's hobbies
12. Gina is beautiful like her mother is.
The same structure with the sentence above is
- A. Gina is not so beautiful as her mother
- B. Gina is more beautiful than her mother
- C. Gina is not beautiful as her mother
- D. Gina is the most beautiful
- E. Gina is as beautiful as her mother
13. He did not pass the oral examination because he was either nervous _____
- A. Or he did not prepare himself well
- B. And did not prepare well
- C. Also the preparation was not good
- D. Or not well prepared
- E. But he was not well prepared
14. As soon as he saw an advertisement offering a job that he is interested in, he immediately sent in an _____ letter.
- A. Apply
- B. Applicant
- C. Application
- D. Applicate
- E. Applying
15. Yunus: Dedi, let's spend this weekend fishing together. I have found a good spot.

Dedi: I am sorry, I hate fishing
From the above sentence, Dedi
shows his _____ for fishing.

- A. Disagreement
- B. Dislike
- C. Disappointment
- D. Dissatisfaction
- E. Discontentment

16. The amazon valley is extremely
important for the ecology of the
earth. Forty percent of the world's
oxygen _____ there.

- A. Are being produced
- B. Are produced
- C. Is being produced
- D. Is produced
- E. Are produced

17. Had he handed in the application,
he _____ last week.

- A. Would be allowed to join the
interview test
- B. Was being allowed to join the
interview test
- C. Would have been allowed to
join me the interview test
- D. He will have been allowed to
join me interview test
- E. He was allowed to join the
interview test

18. A: More and more people have
died as the victims of war.

B: That's terrible. I wish we were
living in a world with no war or
dispute between countries. The
underline sentence means?

- A. We are living in a peaceful
world
- B. We were living in a peaceful
world
- C. We are not living in peaceful
world
- D. We were not living in peaceful
world
- E. We will live in a peaceful world

19. Since my father and my mother are
both working, we usually go
_____ on Sundays.

- A. To shop
- B. Shopping
- C. They shop
- D. For shopping
- E. Shop

20. Due to monetary crisis, the number
of people without jobs _____ at
the moment.

- A. Increase
- B. Increased
- C. Is increasing
- D. As increased
- E. Will increase

21. The explanation for strange
phenomenon is that the human
mind can create actual changes in
the body-chemistry as the result in
believes. If, _____, a person
believes that certain medication
contains a substance that can
accomplish a specific need the
body tends to move to that
direction.

- A. such as
- B. in addition

- C. for example
D. in conclusion
E. therefore
22. Tari: Why do you admire Mother Teresa so much?
Susi: Don't you know that she was the woman _____.
A. that she didn't recognize me
B. who dedicated her life to the poor
C. whom the governor met at the party
D. of which house was very expensive
E. whose farmland is owned by her father
23. Either the kids or their mother _____ worried about the father's critical condition.
A. was
B. be
C. were
D. being
E. she was
24. The teacher asked Sita, "Why did you make mistakes?"
The teacher wondered _____.
A. Why she made many mistakes?
B. Why she had made many mistakes
C. Why did she made many mistakes
D. Why had she made many mistakes
E. Why has she made many mistakes
25. "I don't see any direction to get the waterfall."
"_____ to show us the way."
A. Also there are no guides
B. We can also not have guides
C. Nor are there any guides
D. There are no guides
E. So guides are not there
26. Hanna goes to school at 06.30; Dody goes to school at 07.00; and I go to school the earliest of all.
A. I go to school after Hanna does
B. Hanna goes to school after Dody does
C. Hanna is the latest of all
D. Dody is earlier than I am
E. Hanna is earlier than Dody
27. Separated from each other by great distances and naturally influenced by the speech of local people, each area slowly developed its own _____ characteristics to the point where separate languages include national languages: Italian, French, Spanish, Portuguese, and Rumanian.
A. distinctive
B. distinctness
C. distinction
D. distinctively
E. distinctiveness
28. They should have got out of their house when the fire was spreading to their neighbor's house. From the previous we may conclude that _____.

- A. they got trapped in the fire
 B. they got succeeded in escaping from the fire
 C. they got out their house on time
 D. the fire did not reach the house
 E. their neighbor's house was not on fire
29. The "for sale" sign is not there now, but it _____ as recently as last week, so the car must have been sold.
- A. just there
 B. would be there
 C. was there
 D. did be there
 E. it is there
30. "John had withdrawn all his money because he needed it for his father's operation." "_____" if his father's health hadn't been in such bad condition.
- A. He would not take all his money
 B. He should take all his money
 C. He did not take all his money
 D. He must have taken all his money
 E. He wouldn't have taken all his money
31. "He wishes he hadn't forgotten his promise."
 This means that _____.
 A. he could not forget her promises
 B. he would not forget his promises
 C. he forgot his promises
 D. he did not forget his promises
 E. he tried not to, forget his promises
32. "Has there been a new policy about sick leaves?"
 "I don't know, I don't remember _____ about it."
- A. was being told
 B. being told
 C. I was being told
 D. to be told
 E. be told
33. "Have you seen Pak Imam about our proposal?"
 "Yes I have and I asked him _____."
- A. was our proposed budget feasible?
 B. that our proposed budget was feasible
 C. whether our proposed budget was feasible
 D. how feasible was our proposed budget
 E. our proposed budget was feasible
34. I could not afford to buy that TV set until the price went down, 'means' _____.
 A. when the price went down, I bought the TV set
 B. I did not buy the TV set because its price never going down
 C. I had already bought the TV set because the price went down

- D. the price of the TV set went down; however, I could not buy it
- E. after I bought the TV set, the price went down
35. "Jane had her father contact his lawyer."
This sentence means _____.
- A. Jane and her father are contacting his lawyer
- B. Jane asked her father to contact his lawyer
- C. the lawyer contacted Jane's father
- D. Jane's father was contacted by the lawyer
- E. Jane is contacting her father's lawyer
36. "What are you doing?"
He wanted to know what _____.
- A. you are doing now
- B. you were doing at once
- C. I am doing now
- D. I was doing at the time
- E. I am doing at that time
37. "Rini can speak French now."
"She must have earned it from her mother."
From the dialogue we can conclude that _____.
- A. Rini went to France to learn French
- B. Rini's mother can speak French
- C. Rini had to learn French
- D. Rini's mother forced Rini to learn French
- E. Rini was unwilling to learn French
38. Fast food restaurants have become popular in big cities because many people prefer _____ quickly.
- A. served
- B. being served
- C. serving
- D. they are served
- E. be serving
39. Monica: "I haven't read today's newspaper. Would you lend me, Anto?"
Anto: "Here you are"
The closest meaning for the underlined expression is _____
- A. Monica asks Anto for lending her newspaper
- B. Anto wishes Monica lent him a newspaper
- C. Monica wants Anto to lend her a newspaper
- D. Anto plans to lend her a newspaper
- E. Monica wants to read a newspaper
40. Which one is the correct sentence?
- A. Dion plans to go to a nice place around a lake in a small town in Sumatra
- B. Dion plans to go to a nice place in small town in Sumatra around a lake
- C. Around a lake Dion plans to go to a nice place in small town in Sumatra

- D. Dion plans to go to a nice place around a lake in Sumatra in a small town
- E. Dion plans to go to a nice in Sumatra in a small town around a lake

Reading I

(For question no. 41-44)

Bloating Children and Corruptors

It is a sad state of affairs when we learn from the print and electronic media that many skinny children in many places in Indonesia are lying helplessly with bloated bellies, in severely malnourished condition. Ironically, we also have learned from the same print and electronic media reports about massive graft involving huge amounts of money, perpetrated by smartly dressed, smug officials.

It will not be an odd thing if there are some people who question whether or not these smartly dressed and smug corruptors who hold office in government and legislative agencies have ever learned of these cases of malnutrition, bloated bellies and poverty, which are rampant in this country. It seems that these people have lost fraction of their conscience to take pity on their fellow creatures that have been beset by such misfortune.

These people should have realized that their disgusting corruption has sent many of their fellow countrymen to the abyss of poverty. Unfortunately, in reality,

these smartly dressed people are living in a luxurious life and often spending their time and money abroad. Meanwhile, many of their fellow countrymen live in an abject poverty. Don't they feel embarrassed?

41. "It is a sad state of affairs when we learn from the print and electronic media that many skinny children in many places in Indonesia are lying helplessly..."
This part of text is called the

- A. sequence of explanation
- B. description
- C. identification
- D. thesis
- E. event

42. What is the purpose of the above text?

- A. to tell the reader that there are many corruptors in Indonesia
- B. to persuade the government officials to stop corruption
- C. to persuade corruptors to donate their money to the poor
- D. to explain the process of the corruption
- E. to describe Indonesia corruptors

43. "Ironically, we also have learned from the same print and electronic media..."

The word "we" refers to

- A. the listeners and the readers
- B. the writer and the presenters
- C. the viewers and the writers

- D. the readers and the writers
- E. the presenter and the readers

44. "These people should have realized that their disgusting corruption has sent many of their fellow countrymen to abyss of poverty ..."
This part of the text is called the....

- A. coda
- B. reiteration
- C. conclusion
- D. re-orientation
- E. recommendation

Reading 2

(For question no. 45-50)

Mobile Phones: Good or Bad?

Everywhere you go nowadays, you see people using mobile phones. From school children to retired people, you see them talking in a super market on the trains, in the street, everywhere! so what are the advantages of mobile phones?

First of all, they are very convenient because you can phone nearly anywhere. Another advantage is that they are really useful in emergency situations. For example, if you are alone in your car, and it breaks down, you can get help quickly. In addition, you can also use your mobile to text or connect to internet.

However, there are disadvantages such as the cost. Mobile phone calls cost more than normal calls. Furthermore, it can be annoying if you are in the train or a bus, and you have to listen to some

else's boring conversation. Another disadvantage is that people can contact you anywhere at any time, unless you switch off your phone off!

In conclusion, there are both advantages and disadvantages of mobile phones. Personally, I feel mobile phones are a good thing because they give us more freedom and make communication easier.

45. What is the text about?

- A. Mobile phone at school
- B. The use of mobile phones
- C. The importance of communication
- D. The good and bad sides of mobile phones
- E. The vast development of communication technology

46. What is the purpose of the text?

- A. to critic an art work
- B. to entertain the readers
- C. to describe a particular thing
- D. to explain a communicating process
- E. to discuss an issue from two different point of view

47. Why are mobile phones very convenient?

- A. We can phone from almost every place
- B. They are expensive gadgets
- C. We can send message quickly
- D. We can bring them everywhere
- E. They are very useful

48. Why can mobile phones sometimes annoy us?

- A. They spend less money
- B. We can bring them everywhere
- C. People can contact us anywhere, at any time
- D. We can send message quickly
- E. They are quite expensive

49. Which of the following is NOT a disadvantage of mobile phones?

- A. The mobile phones are most costly
- B. The mobile phone can be annoying
- C. You are contactable everywhere
- D. It saves your time in an emergency situation
- E. None of the above

50. What is the writer's opinion about mobile phones?

- A. They have the advantages and disadvantages
- B. They make communication easier
- C. They can be connected to the internet
- D. They spend much money
- E. They make us busy

For question no. 51-60:

Underline the examples that suggest the meaning of italicized term. Then choose the answer that correspond to the letter of the answer you have chosen.

51. The *debris* in the stadium stands included numerous paper cups,

ticket stubs, and cigarette butts. Debris means _____.

- A. products
- B. packs
- C. papers
- D. rubbish
- E. pieces

52. For his weak stomach, Mario ate a *bland* diet of white bread, rice, and mashed potatoes. Bland means _____.

- A. spicy
- B. varied
- C. mild
- D. stir
- E. health

53. After the terrorist are arrested, the FBI found in his apartment a large collection of *lethal* weapons, including machine guns and explosives. Lethal means _____.

- A. deadly
- B. harmless
- C. poisonous
- D. noisy
- E. intrepid

54. My uncle often has embarrassing *mishaps*, such as backing his car into the side of his boss's Cadillac and hurting himself while trying to walk through a glass door. Mishap means _____.

- A. lever moves
- B. accidents
- C. fools
- D. projects

- E. deliberation
55. The death of a child and the death of a spouse are two of the life's most *traumatic* experiences. Traumatic means _____.
A. rare
B. spoiling
C. painful
D. interesting
E. considerable
56. Many people take a dietary *supplements* – for example, extra calcium or large doses of vitamin C – in the belief that they will cure or prevent disease. Supplement means _____.
A. additions
B. losses
C. preservatives
D. additives
E. essence
57. Some American artists and writers choose to become *exiles* after World War I. These people moved to Paris and never returned to the United States. Exiles means _____.
A. people who love their country
B. people who live outside their country
C. people who criticize their country
D. people who can't stand their country
E. people who live inside their country
58. A *transaction*, such as buying or selling a product, is the most basic part of an economy. Transaction means _____.
A. profit
B. loss
C. business opponent
D. business deal
E. balance
59. For centuries, scientist have kept *extensive* records on Halley's comet, including long, detailed list exactly when and where the comet was seen. Extensive means _____.
A. large in amount
B. done quickly
C. far away
D. very deep
E. abundant
60. There are hundreds of different kinds of *retailers*, ranging from wig shops and frozen yoghurt stands to car dealerships and department stores. Retailer means _____.
A. end-users
B. business that sell directly to users
C. business that make products
D. manufactures
E. business that sell in a big party

Soal Bahasa Inggris USM STIS 2014

Waktu : 60 Menit

Petunjuk

- Di bawah setiap soal dicantumkan 5 kemungkinan jawaban masing masing diberi kode A, B, C, D atau E. Gunakan pensil 2B untuk menghitamkan lingkaran yang berisi kode jawaban yang saudara anggap benar pada lembar jawaban computer (LJK)
- Nilai Jawaban tiap soal adalah :
2 untuk jawaban benar
0 untuk tidak ada jawaban
-1 untuk jawaban salah
- Mengganti jawaban dilakukan dengan cara melingkari kode jawaban baru yang dipilih kemudian bubuhkan tanda silang di dalam lingkaran jawaban sebelumnya.
- Lembar jawaban tidak boleh kotor dan terlipat
- Hanya lembar jawaban yang dikumpulkan, sedangkan soal bisa dibawa pulang.

Selamat Mengerjakan

*Kemasi tasmu, sekerat roti dan beberapa buku. Lalu pergilah,
bersama di barisan orang-orang yang berjuang.*

1. The reading habit _____ nowadays: the students read more from their gadget than from books and other printed materials.
 - A. is changing
 - B. changes
 - C. changed
 - D. have changed
 - E. has changed
2. The Grand Canyon _____ thousands of tourists every year.
 - A. views
 - B. was viewed by
 - C. viewed
 - D. view
 - E. is viewed by
3. A presidential candidate boasts in a campaign. "If I _____ president, I _____ the social security system."
 - A. become; will change
 - B. became; will change
 - C. will become; will change
 - D. would become; would change
 - E. am; will change
4. He wishes he hadn't forgotten his promise. This means that _____.
 - A. he tried not to forget his promise
 - B. he did not forget his promise
 - C. he forgets his promise
 - D. he forgot his promise
 - E. he could not forget his promise
5. The only solution is _____.
 - A. lowering the standards
 - B. for lowering the standards
 - C. to lower the standards
 - D. being lowered
 - E. by lower the standard
6. 'Do you teach all the tourists how to do batik painting?' 'No, only those _____ in batik.'
 - A. interested
 - B. interest
 - C. interesting
 - D. to be interested
 - E. to be interesting
7. Joey lost a fortune in the stock market, _____ he still seems able to live quite comfortably.
 - A. though
 - B. and
 - C. but
 - D. also
 - E. as well as
8. He literally stitched mail sacks _____.
 - A. when his finger bled
 - B. after his finger bled
 - C. before his finger bled
 - D. until his finger bled
 - E. upon his finger bled

9. Producing fine paintings _____ skill and creativity.

- A. require
- B. requires
- C. is required
- D. it's required
- E. requiring

10. It is believe that _____ city of Damascus will take a long time to rebuild.

- A. it is tremendously damage
- B. the tremendously damaged
- C. the damage is tremendously
- D. the tremendously damaging
- E. it is the tremendously damaged

11. We can rebuild. Enlarge the containment field. Make it _____ than ever! But we need money.

- A. big and strong
- B. big and stronger
- C. much more bigger and stronger
- D. bigger and stronger
- E. much big and strong

12. The first _____ river was Citamba located in Kuningan West Java.

- A. made by man
- B. making man

- C. man-made
- D. that is man-made
- E. man-making

13. Anto: Excuse me, Tanti

Tanti: Yes?

Anto: I wonder if you could lend me your algebra book. I am doing my homework.

Tanti: Oh sure. Here it is.

The underlined expression is used _____ to _____ express _____.

- A. Giving permission
- B. Certainly
- C. Pleasure
- D. Capability
- E. Possibility

14. I _____ English for seven years now.

- A. learn
- B. have learned
- C. was learning
- D. learned
- E. have been learning

15. Before I _____ to London, I _____ learning English.

- A. had gone; enjoyed
- B. went: did not enjoy
- C. went; had not enjoyed
- D. would have gone; have not enjoyed
- E. would go; never enjoy

16. The metal beams _____ the saltwater.

- A. eventually corrode

- B. eventually corrodes
C. has been eventually corroded by
D. were eventually corroded by
E. is eventually corroded by
17. If we _____ this coming match, we _____ for the semifinals.
- A. won; were qualified
B. had won; would have been qualified
C. would win; will be qualified
D. win; will be qualified
E. would have won; shall qualified
18. Suppose she _____ here. What would you say?
- A. is
B. was
C. were
D. is being
E. will be
19. _____ in advance somehow makes him smarter in almost all lessons in class.
- A. Preparing
B. To prepare
C. By preparing
D. Prepares
E. Prepared
20. Scientists believe that sleep is the single most important factor _____ to general health, before even diet or exercise.
- A. contribute
B. contribution
C. contributing
D. contributory
E. contributed
21. That is not what I meant to say, _____ should you interpret my statement as an admission of guilt.
- A. and
B. but
C. or
D. that
E. nor
22. Because of the accident, the car _____ has broken down.
- A. which your wife sold to me last week
B. since your wife sold to me last week
C. as your wife sold to me last week
D. while your wife sold to me last week
E. did your wife sell to me last week
23. Each of delegates at the International Conference for women read a statement of policy from _____ country.
- A. theirs
B. their

- C. hers
D. her
E. his
24. They own an _____ cutting knife.
- A. enormous and long-handled
B. enormous also long-handled
C. enormous but long-handled
D. enormous with long-handled
E. enormous, long-handled
25. Rian: 'Why did Ria fail in the oral test?'
Eko: 'It was because _____'
- A. she answered nervously the question
B. she nervously answered the question
C. nervously the answered the question
D. she answered the questioned nervously
E. the question she answered nervously
26. The school director had had the students _____ their lessons before the exam begin.
- A. to review
B. reviewing
C. reviewed
D. review
E. reviews
27. Change this indirect speech into the direct one!
The teacher advised Joko not to be lazy.
- A. The teacher said, "Not to be lazy."
B. The teacher said, "Do not to be lazy."
C. The teacher said, "Lazy do not be."
D. The teacher said, "You not lazy."
E. The teacher said, "Do not be lazy."
28. The way Prof. Molenberghs teaches Mathematics not only keeps the student's interest _____
- A. and also increasing their motivation
B. but increase their motivation as well
C. and also to increase their motivation
D. and he also increasing their motivation
E. and also increasing their motivation
29. The water flooding the street and _____ caused people to panic and leave their valuable behind. (M)
- A. it was heavy storm damaging houses
B. also the heavy storm getting the house damages

- C. the heavy storm damaging the house
 D. because the heavy storm damaged the houses
 E. the houses were damages by heavy storm
30. When we lived in Boston, we _____ in the restaurant next to our flat.
- A. often ate
 B. often eat
 C. were used to eat
 D. would often eat
 E. have often eaten
31. According to him, watchin a football game is as interesting as _____.
- A. the playing of basketball
 B. when he plays basketball
 C. when playing basketball
 D. playin basketball
 E. played basketball
32. If we knew what we were doing, it would not be called research, _____ (Albert Einstein).
- A. is it?
 B. isn't it?
 C. wouldn't it?
 D. would we?
 E. would it?
33. Although the coupe has been married for five years, they are still _____.
- A. Childish
 B. Childbirth
 C. Childhood
 D. Childless
 E. Childness
34. Our new principal, who was not used to _____ different arguments, was quite skeptic looking at the criticism about him.
- A. Having
 B. Have
 C. be having
 D. be had
 E. being had
35. The craft was the first really _____ airship.
- A. Success
 B. Succeed
 C. Succeeded
 D. Successful
 E. Successfully
36. Rustam: "Why are you sneezing?"
 Effendi: "I am allergic to smoke."
 Rustam: "Oh, _____ for causing you such inconvenience."
- A. Would you mind
 B. May I be excused
 C. I'm terribly sorry
 D. I beg you to apologize
 E. Please excuse me
37. While at the moment I _____ English grammar, I _____ to read the texts in my English textbooks again.
- A. am revising; have already begun

- B. revise; begin
- C. have been revising; began
- D. revise; am beginning
- E. am revising; am beginning

38. People would not need to take time off work _____.

- A. if were they not sick
- B. if they are not sick
- C. should they not be sick
- D. Had they not been sick
- E. Were they not sick

39. He requested that the car park _____ locked at night.

- A. should not be
- B. not to be
- C. did not
- D. is not being
- E. was not

40. 'He needs a visa because he is foreigner.' We can also say, '_____ he needs a visa.'

- A. being a foreigner
- B. to be foreigner
- C. having been a foreigner
- D. in being a foreigner
- E. by being a foreigner

41. 'I wondered how Azizah will ever manage the business after her father died in the tsunami in Aceh. She has both the expertise in running the business and _____.

- A. the strong support from all the members of her family
- B. she is also supported by all the members of her family
- C. all the members of the family strongly support her to
- D. she has the strong support from all the members of her family
- E. there is strong support from all the members of her family

42. Please _____ tell _____ me _____.

- A. why does Hamid hope his international experience will help him
- B. why is Hamid hope his international experience will help him
- C. why Hamid hopes his international experience will help him
- D. why Hamid is hoped his international experience will help him
- E. why Hamid hopes his international experience helps him will

43. Neither the students nor their headmaster _____ at the school meeting since 8 AM.

- A. are
- B. have been
- C. was
- D. has been

- E. will have been
44. _____ is a beautiful island rich in culture has been confirmed by tourist from around the world.
- A. Bali
B. Whether Bali
C. If Bali
D. That Bali
E. How Bali
45. 'Mother has an interior decorator design the living room'. It means that _____.
- A. Mother has to design the living room
B. Mother has asked the interior decorator to design the living room
C. The living room has already been designed by an interior decorator
D. Mother has designed the living room as the interior decorator instructed
E. The interior decorator asked the mother whether she can design the living room
46. Change this indirect speech into the direct one!
Hasan said that he would give me a pen
- A. Hasan said, "I will give you a pen."
B. Hasan said, "He will give you a pen."
C. Hasan said, "I would give you a pen."
D. Hasan said, "He would give you a pen."
E. Hasan said, "I will give him a pen."
47. 'I wonder why Fadelia has not contacted me for so long' 'She _____ busy looking after her two year-old daughter as her baby sitter has resigned.'
- A. has to be
B. should have been
C. might have been
D. must be
E. must have been
48. Father: 'Which one do you want for your birthday present, Pahlevina, a pair of shoes or a dress?'
Pahleviana: 'I'd rather have a dress than a pair of shoes.'
From the dialogue above we know that Pahleviana _____.
- A. prefers to have a dress rather than a pair of shoes
B. prefers a dress than a pair of shoes
C. prefers a dress to a pair of shoes
D. prefers have dress to a pair of shoes
E. prefers having a dress than a pair of shoes

49. Dani: "Why are you here? You are supposed to be at your statistics class, aren't you?"

Jacob: "I wish there were no statistics class today. I have to bring my parents to the hospital."

From the underlying sentence we may conclude that _____.

- A. Jacob had no statistics class today
- B. Jacob has no statistics class today
- C. Dani had no statistics class today
- D. Jacob has statistics class today
- E. Dani has statistics class today

50. The excellence of gift a lies in how appropriate it is _____.

- A. more than how valuable it is
- B. rather than how valuable it is
- C. how valuable it is
- D. over how valuable it is
- E. than how valuable it is

VOCABULARY and READING COMPREHENSION

In this section you will read several articles. Please read them carefully and choose the most correct answer on A, B, C, D, or E

Reading 1.

Experts have expressed their concern that the country could **lose its opportunity to reap** benefits from the so-called **demographic dividend** unless the government invested more in projects to improve human resource capital. While the other **fast-growing economics** in the region, including China and Japan, face a graying population, Indonesia is blessed with 60 percent of its 240 million people being under 30 years of age.

Indonesia is expected to reap the benefits of a young population until 2025, after which the trend will reverse and the population start to age. "The government should really focus on improving the quality of our human resources to create high employment and productivity during the peak period of this demographic situation," the Bandung Institute of Technology (ITB) researcher Haryo Winarso said recently.

Public policy expert Sofian Effendi said the demographic dividend which should be reaped between 2020 and 2030, would allow Indonesia to have a massive, young, productive labor force with a low **dependency ratio** of 44 percent. "However, the main problem is that Indonesia **lacks** skilled and effective workers," he said.

According to a 2012 survey conducted by the Swiss-based International Institute for Management Development in 59 countries around the world, Indonesia ranked as one of the lowest in terms of human resource productivity. The survey also reported that most Indonesian workers **toiled for long hours** but only produced small gains.

"The survey reveals that most workers in Indonesia are junior high school graduates with low levels of efficiency and knowledge," he said. Anies Baswedan, the founder of Indonesia Mengajar (Indonesia Teaches), a foundation that sends top university graduates to teach in the country's remote areas, said the demographic dividend could also be a **curse** due to problems in the country's educational system.

*adapted from: The Jakarta Post, Jakarta [Headlines] Mon, August 26 2013,- **Headline News**

51. To be able to reap from its people, the article tells us that Indonesian government should _____.
- A. pay more attention to all people
 - B. pay attention to the quality of the women
 - C. invest more on its massive young potential human resources
 - D. see the opportunity to reap with precaution
 - E. benefit from its huge number of population
52. From the reading above we learn that demographic dividend is _____.
- A. when Indonesia could benefit from its productive labor force
 - B. too many old people out of the total population
 - C. the condition that there are less young productive than other age group
 - D. a small young potential group of workers
 - E. population opportunity to reap with a long precaution only
53. The 2012 survey says that Indonesia belongs to the group of countries with the lowest productivity due to _____.
- A. short working hours and producing so little
 - B. low level of education on the average
 - C. massive young potential but no low qualification
 - D. low level of efficiency compared to that of other countries
 - E. low competitiveness as the result of educational system
54. It is said that the major problem that could slow Indonesia to have demographic dividend is _____.
- A. too many people in remote areas
 - B. the school facilities are unequal
 - C. the government should see the opportunity to reap with precaution
 - D. that Indonesia should learn from other countries

- E. most workers are Junior high school graduates or less
55. Choose the most appropriate conclusion for the above articles
- Demographic dividend is only an expectation to know
 - Indonesia is expected to enjoy demographic bonus during 2020-2030
 - Demographic dividend if only the massive young potential is in a good qualification
 - Indonesia is left behind compared to other countries
 - the big problem remains on the educational system
56. Most of Indonesian workers **toiled for long hours** but only produced small gains. The bold term means _____.
- working for long time
 - working hard
 - sweat too much
 - working enthusiastically
 - working only few hours
57. The expression "**fast-growing economies**" means _____.
- rapid economic growth
 - fast-food economies
 - economically efficient
 - beneficial economies
 - free trade economies
58. The expression "**public policy**" means _____.
- general law
 - policies for the benefit for all people
 - policies made by people
 - public decision
 - public interest
59. The word "**curse**" in the final paragraph means _____.
- fortune
 - negative consequence
 - magic
 - good luck
 - blessing
60. The closest meaning of the word "**lacks**" in the third paragraph is _____.
- enough
 - sufficient
 - proper
 - inadequate
 - just right

Soal Bahasa Inggris USM STIS 2015

Waktu : 60 Menit

Petunjuk

- Di bawah setiap soal dicantumkan 5 kemungkinan jawaban masing masing diberi kode A, B, C, D atau E. Gunakan pensil 2B untuk menghitamkan lingkaran yang berisi kode jawaban yang saudara anggap benar pada lembar jawaban computer (LJK)
- Nilai Jawaban tiap soal adalah :
2 untuk jawaban benar
0 untuk tidak ada jawaban
-1 untuk jawaban salah
- Mengganti jawaban dilakukan dengan cara melingkari kode jawaban baru yang dipilih kemudian bubuhkan tanda silang di dalam lingkaran jawaban sebelumnya.
- Lembar jawaban tidak boleh kotor dan terlipat
- Hanya lembar jawaban yang dikumpulkan, sedangkan soal bisa dibawa pulang.

Selamat Mengerjakan

*Kesuksesan berawal dari ketekunan
Keberhasilan berawal dari keingintahuan*

31. The reading habit _____ nowadays: the students read more from their gadget than from books and other printed materials.
- F. is changing
G. changes
H. changed
I. have changed
J. has changed
32. The Grand Canyon _____ thousands of tourists every year.
- F. views
G. was viewed by
H. viewed
I. view
J. is viewed by
33. A presidential candidate boasts in a campaign. "If I _____ president, I _____ the social security system."
- F. become; will change
G. became; will change
H. will become; will change
I. would become; would change
J. am; will change
34. He wishes he hadn't forgotten his promise. This means that _____.
- F. he tried not to forget his promise
G. he did not forget his promise
H. he forgets his promise
I. he forgot his promise
J. he could not forget his promise
35. The only solution is _____.
- F. lowering the standards
G. for lowering the standards
H. to lower the standards
I. being lowered
J. by lower the standard
36. 'Do you teach all the tourists how to do batik painting?'
'No, only those _____ in batik.'
- F. interested
G. interest
H. interesting
I. to be interested
J. to be interesting
37. Joey lost a fortune in the stock market, _____ he still seems able to live quite comfortably.
- F. though
G. and
H. but
I. also
J. as well as
38. He literally stitched mail sacks _____.
- F. when his finger bled
G. after his finger bled
H. before his finger bled
I. until his finger bled
J. upon his finger bled

39. Producing fine paintings
_____ skill and creativity.

- F. require
- G. requires
- H. is required
- I. it's required
- J. requiring

40. It is believe that _____ city
of Damascus will take a long
time to rebuild.

- F. it is tremendously
damage
- G. the tremendously
damaged
- H. the damage is
tremendously
- I. the tremendously
damaging
- J. it is the tremendously
damaged

41. We can rebuild. Enlarge the
containment field. Make it
_____ than ever! But we
need money.

- F. big and strong
- G. big and stronger
- H. much more bigger and
stronger
- I. bigger and stronger
- J. much big and strong

42. The first _____ river
was Citamba located in
Kuningan West Java.

- F. made by man
- G. making man

- H. man-made
- I. that is man-made
- J. man-making

43. Anto: Excuse me, Tanti

Tanti: Yes?

Anto: I wonder if you could
lend me your algebra book. I
am doing my homework.

Tanti: Oh sure. Here it is.

The underlined expression is
used _____ to _____ express
_____.

- F. Giving permission
- G. Certainly
- H. Pleasure
- I. Capability
- J. Possibility

44. I _____ English for seven
years now.

- F. learn
- G. have learned
- H. was learning
- I. learned
- J. have been learning

45. Before I _____ to London, I
_____ learning English.

- F. had gone; enjoyed
- G. went: did not enjoy
- H. went; had not enjoyed
- I. would have gone; have
not enjoyed
- J. would go; never enjoy

46. The metal beams _____
the saltwater.

- F. eventually corrode

- G. eventually corrodes
H. has been eventually corroded by
I. were eventually corroded by
J. is eventually corroded by
47. If we _____ this coming match, we _____ for the semifinals.
- F. won; were qualified
G. had won; would have been qualified
H. would win; will be qualified
I. win; will be qualified
J. would have won; shall qualified
48. Suppose she _____ here. What would you say?
- F. is
G. was
H. were
I. is being
J. will be
49. _____ in advance somehow makes him smarter in almost all lessons in class.
- F. Preparing
G. To prepare
H. By preparing
I. Prepares
J. Prepared
50. Scientists believe that sleep is the single most important factor _____ to general health, before even diet or exercise.
- F. contribute
G. contribution
H. contributing
I. contributory
J. contributed
51. That is not what I meant to say, _____ should you interpret my statement as an admission of guilt.
- F. and
G. but
H. or
I. that
J. nor
52. Because of the accident, the car _____ has broken down.
- F. which your wife sold to me last week
G. since your wife sold to me last week
H. as your wife sold to me last week
I. while your wife sold to me last week
J. did your wife sell to me last week
53. Each of delegates at the International Conference for women read a statement of policy from _____ country.
- F. theirs
G. their

- H. hers
- I. her
- J. his

54. They own an _____ cutting knife.

- F. enormous and long-handled
- G. enormous also long-handled
- H. enormous but long-handled
- I. enormous with long-handled
- J. enormous, long-handled

55. Rian: 'Why did Ria fail in the oral test?'

Eko: 'It was because _____'

- F. she answered nervously the question
- G. she nervously answered the question
- H. nervously the answered the question
- I. she answered the questioned nervously
- J. the question she answered nervously

56. The school director had had the students _____ their lessons before the exam begin.

- F. to review
- G. reviewing
- H. reviewed
- I. review
- J. reviews

57. Change this indirect speech into the direct one!

The teacher advised Joko not to be lazy.

- F. The teacher said, "Not to be lazy."
- G. The teacher said, "Do not to be lazy."
- H. The teacher said, "Lazy do not be."
- I. The teacher said, "You not lazy."
- J. The teacher said, "Do not be lazy."

58. The way Prof. Molenberghs teaches Mathematics not only keeps the student's interest _____

- F. and also increasing their motivation
- G. but increase their motivation as well
- H. and also to increase their motivation
- I. and he also increasing their motivation
- J. and also increasing their motivation

59. The water flooding the street and ____ caused people to panic and leave their valuable behind. (M)

- F. it was heavy storm damaging houses
- G. also the heavy storm getting the house damages

- H. the heavy storm
damaging the house
- I. because the heavy storm
damaged the houses
- J. the houses were
damages by heavy storm
60. When we lived in Boston, we
_____ in the restaurant next
to our flat.
- F. often ate
- G. often eat
- H. were used to eat
- I. would often eat
- J. have often eaten
61. According to him, watchin a
football game is as interesting
as _____.
- F. the playing of basketball
- G. when he plays basketball
- H. when playing basketball
- I. playin basketball
- J. played basketball
62. If we knew what we were doing,
it would not be called research,
_____ (Albert Einstein).
- F. is it?
- G. isn't it?
- H. wouldn't it?
- I. would we?
- J. would it?
63. Although the coupe has been
married for five years, they are
still _____.
- F. Childish
- G. Childbirth
- H. Childhood
- I. Childless
- J. Childness
64. Our new principal, who was not
used to _____ different
arguments, was quite skeptic
looking at the criticism about
him.
- F. Having
- G. Have
- H. be having
- I. be had
- J. being had
65. The craft was the first really
_____ airship.
- F. Success
- G. Succeed
- H. Succeeded
- I. Successful
- J. Successfully
66. Rustam: "Why are you
sneezing?"
Effendi: "I am allergic to smoke."
Rustam: "Oh, _____ for
causing you such inconvenience."
- F. Would you mind
- G. May I be excused
- H. I'm terribly sorry
- I. I beg you to apologize
- J. Please excuse me
67. While at the moment I _____
English grammar, I _____ to
read the texts in my English
textbooks again.
- F. am revising; have already
begun

- G. revise; begin
- H. have been revising; began
- I. revise; am beginning
- J. am revising; am beginning

68. People would not need to take time off work _____.

- F. if were they not sick
- G. if they are not sick
- H. should they not be sick
- I. Had they not been sick
- J. Were they not sick

69. He requested that the car park _____ locked at night.

- F. should not be
- G. not to be
- H. did not
- I. is not being
- J. was not

70. 'He needs a visa because he is foreigner.' We can also say, '_____ he needs a visa.'

- F. being a foreigner
- G. to be foreigner
- H. having been a foreigner
- I. in being a foreigner
- J. by being a foreigner

71. 'I wondered how Azizah will ever manage the business after her father died in the tsunami in Aceh. She has both the expertise in running the business and _____.

- F. the strong support from all the members of her family
- G. she is also supported by all the members of her family
- H. all the members of the family strongly support her to
- I. she has the strong support from all the members of her family
- J. there is strong support from all the members of her family

72. Please _____ tell _____ me _____.

- F. why does Hamid hope his international experience will help him
- G. why is Hamid hope his international experience will help him
- H. why Hamid hopes his international experience will help him
- I. why Hamid is hoped his international experience will help him
- J. why Hamid hopes his international experience helps him will

73. Neither the students nor their headmaster _____ at the school meeting since 8 AM.

- F. are
- G. have been
- H. was
- I. has been

J. will have been

74. _____ is a beautiful island rich in culture has been confirmed by tourist from around the world.

F. Bali

G. Whether Bali

H. If Bali

I. That Bali

J. How Bali

75. 'Mother has an interior decorator design the living room'. It means that _____.

F. Mother has to design the living room

G. Mother has asked the interior decorator to design the living room

H. The living room has already been designed by an interior decorator

I. Mother has designed the living room as the interior decorator instructed

J. The interior decorator asked the mother whether she can design the living room

76. Change this indirect speech into the direct one!

Hasan said that he would give me a pen

F. Hasan said, "I will give you a pen."

G. Hasan said, "He will give you a pen."

H. Hasan said, "I would give you a pen."

I. Hasan said, "He would give you a pen."

J. Hasan said, "I will give him a pen."

77. 'I wonder why Fadelia has not contacted me for so long' 'She _____ busy looking after her two year-old daughter as her baby sitter has resigned.'

F. has to be

G. should have been

H. might have been

I. must be

J. must have been

78. Father: 'Which one do you want for your birthday present, Pahlevina, a pair of shoes or a dress?'

Pahleviana: 'I'd rather have a dress than a pair of shoes.'

From the dialogue above we know that Pahleviana _____.

F. prefers to have a dress rather than a pair of shoes

G. prefers a dress than a pair of shoes

H. prefers a dress to a pair of shoes

I. prefers have dress to a pair of shoes

J. prefers having a dress than a pair of shoes

79. Dani: "Why are you here? You are supposed to be at your statistics class, aren't you?"

Jacob: "I wish there were no statistics class today. I have to bring my parents to the hospital."

From the underlying sentence we may conclude that _____.

- F. Jacob had no statistics class today
- G. Jacob has no statistics class today
- H. Dani had no statistics class today
- I. Jacob has statistics class today
- J. Dani has statistics class today

80. The excellence of gift a lies in how appropriate it is _____.

- F. more than how valuable it is
- G. rather than how valuable it is
- H. how valuable it is
- I. over how valuable it is
- J. than how valuable it is

VOCABULARY and READING COMPREHENSION

In this section you will read several articles. Please read them carefully and choose the most correct answer on A, B, C, D, or E

Reading 1.

Expert have expressed their concern that the country could **lose its**

opportunity to reap benefits from the so-called **demographic dividend** unless the government invested more in projects to improve human resource capital. While the other **fast-growing economics** in the region, including China and Japan, fast a graying population, Indonesia is blessed with 60 percent of its 240 million people being under 30 years age.

Indonesia is expected to reap the benefits of a young population until 2025, after which the trend will reverse and the population start to age. "The government should really focus on improving the quality of our human resources to create high employment and productivity during the peak period of this demographic situation," the Bandung Institute of Technology (ITB) researcher Haryo Winarso said recently.

Public policy expert Sofian Effendi said the demographic dividend which should be reaped between 2020 and 2030, would allow Indonesia to have a massive, young, productive labor force with a low **dependency ratio** of 44 percent. "However, the main problem is that Indonesia **lacks** skilled and effective workers," he said.

According to a 2012 survey conducted by the Swiss-based International Institute for Management Development in 59 countries around the world, Indonesia ranked as one of the lowest in terms of human resource productivity. The survey also reported that most Indonesian workers **toiled for long hours** but only produced small gains.

"The survey reveals that most workers in Indonesia are junior high

school graduates with low levels of efficiency and knowledge," he said. Anies Baswedan, the founder of Indonesia Mengajar (Indonesia Teaches), a foundation that sends top university graduates to teach in the country's remote areas, said the demographic dividend could also be a **curse** due to problems in the country's educational system.

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81. To be able to reap from its people, the article tells us that Indonesian government should _____.

- F. pay more attention to all people
- G. pay attention to the quality of the women
- H. invest more on its massive young potential human resources
- I. see the opportunity to reap with precaution
- J. benefit from its huge number of population

82. From the reading above we learn that demographic dividend is _____.

- F. when Indonesia could benefit from its productive labor force
- G. too many old people out of the total population
- H. the condition that there are less young

productive than other age group

- I. a small young potential group of workers
- J. population opportunity to reap with a long precaution only

83. The 2012 survey says that Indonesia belongs to the group of countries with the lowest productivity due to _____.

- F. short working hours and producing so little
- G. low level of education on the average
- H. massive young potential but no low qualification
- I. low level of efficiency compared to that of other countries
- J. low competitiveness as the result of educational system

84. It is said that the major problem that could slow Indonesia to have demographic dividend is _____.

- F. too many people in remote areas
- G. the school facilities are unequal
- H. the government should see the opportunity to reap with precaution
- I. that Indonesia should learn from other countries

- J. most workers are Junior high school graduates or less
85. Choose the most appropriate conclusion for the above articles
- F. Demographic dividend is only an expectation to know
- G. Indonesia is expected to enjoy demographic bonus during 2020-2030
- H. Demographic dividend if only the massive young potential is in a good qualification
- I. Indonesia is left behind compared to other countries
- J. the big problem remains on the educational system
86. Most of Indonesian workers **toiled for long hours** but only produced small gains. The bold term means _____.
- F. working for long time
- G. working hard
- H. sweat too much
- I. working enthusiastically
- J. working only few hours
87. The expression "**fast-growing economies**" means _____.
- F. rapid economic growth
- G. fast-food economies
- H. economically efficient
- I. beneficial economies
- J. free trade economies
88. The expression "**public policy**" means _____.
- F. general law
- G. policies for the benefit for all people
- H. policies made by people
- I. public decision
- J. public interest
89. The word "**curse**" in the final paragraph means _____.
- F. fortune
- G. negative consequence
- H. magic
- I. good luck
- J. blessing
90. The closest meaning of the word "**lacks**" in the third paragraph is _____.
- F. enough
- G. sufficient
- H. proper
- I. inadequate
- J. just right

Soal Bahasa Inggris USM STIS 2016

Waktu Pengerjaan : 90 Menit

Petunjuk

- Di bawah setiap soal dicantumkan 5 kemungkinan jawaban masing masing diberi kode A, B, C, D atau E. Gunakan pensil 2B untuk menghitamkan lingkaran yang berisi kode jawaban yang saudara anggap benar pada lembar jawaban computer (LJK)
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-1 untuk jawaban salah
- Mengganti jawaban dilakukan dengan cara melingkari kode jawaban baru yang dipilih kemudian bubuhkan tanda silang di dalam lingkaran jawaban sebelumnya.
- Lembar jawaban tidak boleh kotor dan terlipat
- Hanya lembar jawaban yang dikumpulkan, sedangkan soal bisa dibawa pulang.

Selamat Mengerjakan

*Yang kita tahu hanyalah setetes air,
Yang tidak kita ketahui sejumlah lautan*

1. Luc :“ May I borrow your new novel?”
Geert:“ Yes, but next Friday. I _____ reading it by then.”
A. would finish
B. am finishing
C. have finished
D. will be finishing
E. will have finished
2. “Have you delivered the package to the customers?”
“Not yet, some _____.”
A. are still being wrapped
B. have been wrapped
C. would be wrapped
D. will have wrapped
E. were wrapped
3. “If you had listened to me, you would have been able to study at STIS”, means _____.
A. You had listened to me and you were able to study at STIS
B. You did not listen to me, but you were able to study at STIS
C. You were not able to study at STIS because you did not listen to me
D. You listened to me, but you were not able to study at STIS
E. You were able to study at STIS because you listened to me
4. If I knew that working hard and pursuing higher education _____ to be a successful person, I would commit better to work at school to survive longer.
A. Count C. counts E. being counted
B. Counted D. counting
5. The motion picture originated when a series of still photographs were spliced and viewed in rapid succession _____ to illusion and movement and continuity.
A. created
B. to create
C. in the creation of
D. to be created by
E. for creation
6. Several individuals _____ different groups have become united in their effort to make government cancel the increase of fuel prices.
A. represent
B. to represent
C. they represent
D. representing
E. represented
7. _____ the earthquake had made the region unsafe for living, the villagers were willing to transmigrate.
A. In order that D. so that
B. Whereas E. since
C. Until
8. I wish that I could send this letter to her at once, but I have no idea _____.
A. which road she should live
B. when she lives there
C. where does she live
D. how long she lives there
E. where she lives
9. Different interpretations on the same event by various newspaper _____ readers confused and angry.
A. to make C. make
E. makes
B. they make D. it makes
10. “What is the most worrying effect of the economic crisis?”

- "_____ children are deprived of nutritious food necessary for their physical and intellectual development."
- A. Why C. what E. when
B. That D. which
11. "I have difficulties in filling in these tax forms."
"Well, you _____."
A. have done it with somebody's help
B. can do it for one of my assistants
C. have to do it without difficulties
D. can do it all by yourself
E. can have one of my assistants do it
12. "Danish has decided to postpone his plan going to Europe."
"Has he? He told me that he _____ for a visa to Belgium."
A. Applied D. had applied
B. has applied E. is applying
C. applies
13. "She can hardly remember me."
"_____".
A. But her sister doesn't
B. So is her sister
C. Neither does her sister
D. Her sister can too
E. But her sister can
14. "I've heard that Joko was fined for \$120 for littering when he was in Singapore."
"Really? He _____ that there is law against littering in public places."
A. might have known
B. ought to have known
C. could have known
D. should have known
E. must have known
15. "Would you like to see a documentary program on Discovery Channel?"
"_____ go to movie. How does that sound?"
A. I want to C. I could E. I wish to
B. I might D. I'd rather
16. "Without his assistant, the professor could hardly finish his survey, _____ he?"
A. Could C. did E. can't
B. couldn't D. can
17. Aisya said "I have never seen such a great movie."
From the above statement we may conclude that _____.
A. she seldom went to good movies
B. the film she saw was a terrible one
C. she has never seen bad movies before
D. it is the first time she went to see a movie
E. this is the best movie she has even seen
18. Children who believe in the value of hard work and responsibility and who attach importance to education are likely to have higher academic achievement and fewer _____ problems than those who do not have these ideals.
A. discipline
B. disciplinal
C. disciplinarian
D. disciplinable
E. disciplinary

19. "The weather is good today, let's play golf."
"_____".
A. That's good idea
B. Are you sure
C. Well, I like it
D. Yes, it is good weather
E. That's sure
20. Mark Zuckerberg, the creator of Facebook, _____ by Forbes as the 6th most affluent entrepreneur of the World in 2016.
A. identify
B. has identified
C. identified
D. have identified
E. was identified
21. Dinner that has been prepared for the _____ family gathering _____ by mother using the secret recipes
A. was cooked
B. is being cooked
C. is cooking
D. are cooked
E. have cooked
22. If someone had told me when I was at school about the importance of diplomatic skill in pursuing a successful career, I _____ it.
A. will not believe
B. would not believe
C. do not believe
D. would not have believed
E. hadn't believed
23. For more than years, the students _____ to get better marks for getting through their favorite university.
A. have been struggling
B. are struggling
C. struggle
D. had struggle
E. struggled
24. _____ in advance somehow makes him smarter in almost all lessons in class
A. Preparing
B. to prepare
C. prepares
D. prepared
E. to be prepared
25. My teacher is usually late for the class, but she has been in time this week. The head master _____ her some advice.
A. has to give
B. must have given
C. might give
D. would have given
E. ought to have give
26. He knew _____.
A. that between Puncak and Bogor last night the accident happened
B. between that Puncak and Bogor the accident happened last night
C. that the accident last night happened between Puncak and Bogor
D. the accident happened that last night between Puncak and Bogor
E. that the accident happened between Puncak and Bogor last night
27. Julian has never heard anything from Jenny since they last met, and _____.
A. so have I
B. neither did I
C. so will I
D. so did I
E. so did I

- C. I haven't either
28. I am having trouble with my computer again. I have done everything I can but it doesn't work properly. I think I am going to get it _____ at once.
- A. to fix D. being fixed
B. fixing E. to be fixed
C. fixed
29. The chairman of meeting asked me whether or not I had signed the proposal.
The direct speech of the sentence is:
- A. "Had you signed the proposal?"
B. "Do you sign the proposal?"
C. "Did you sign the proposal?"
D. "Are you signing the proposal?"
E. "Will you sign the proposal?"
30. Why don't we have some Chinese food? Well, _____ eating Italian. What do you think?
- A. I like C. I will be E. I love
B. I'd prefer D. I am
31. "The students nowadays are more interested in reading internet than books. This implies that _____."
- A. books are read more frequently than internet
B. books are rarely on their reading list
C. students read book more often than internet
D. students spend more time reading books
- E. books are cheaper than internet
32. _____ tsunami that could have hit Mentawai, West Sumatra was actually overestimated that made people panic.
- A. Don't you think
B. Will you think
C. Did you think of
D. Can't you think
E. Are you think
33. The directions he gave about the way how to get to the station seemed to have been so _____ that I could finally get to the station without being lost
- A. Clearness D. clear
B. Clearing E. clearance
C. clearly
34. Talking excitedly to each other, they forgot to finish the assignment the Professor has assigned them to do and hand it by Friday.
The underlined words mean _____.
- A. although they talk excitedly
B. in order that they could talk excitedly
C. because they were talking excitedly
D. before they talked excitedly
E. if they talked excitedly
35. _____ hear about submitting their progress report as part of a yearly assessment by the firm they work for is the announcement released by the company.
- A. Whether employees on probation
B. Are employees on probation

- C. If employees on probation
D. What employees on probation
E. When employees on probation
36. Due to monetary crisis, the number of people without jobs _____ from year to year.
A. Increase D. increase
B. is increasing E. will increase
C. increased
37. Maritza: "What about going to seafood restaurant, Dad?"
Dad: _____.
What will Daddy say to show he doesn't like seafood?
A. I am afraid I like fish
B. I can't stand eating seafood
C. I am really fond of eating fish
D. I am sure I'll enjoy it very much
E. Its menu doesn't offer us many kinds of seafood
38. The Governor's impromptu remarks caused his political party much embarrassment
A. Unrehearsed D. publish
B. Forceful E. absurd
C. unrestrained
39. That student is discourteous; he grumbles no matter how one tries to please him.
A. Giggles D. complains
B. Yells E. wrinkle
C. scolds
40. It is impossible for parents to shield their children from every danger.
A. Protect D. free
B. Conserve E. spoil
C. relieve
41. Bambang is _____ in choosing his friends, so his party was attended by vastly different and sometimes bizarre personalities.
A. Indispensable
B. Indiscriminate
C. Friendly
D. Indisputable
E. Tolerable
42. The _____ weather patterns during December-February in Indonesia meant tourists has to carry both umbrellas and sunglasses.
A. Kaleidoscopic
B. Illustrative
C. Unpredicted
D. Impertinent
E. Preeminent
43. _____ is when you always buy a particular item because you like it.
A. Red tape
B. Hard sell
C. Capital asset
D. Brand loyalty
E. Liability
44. The school will not _____ any form of cheating in all exams
A. Condone
B. Endorse
C. Authorize
D. Stimulate
E. Discourage
45. The man walked briskly to keep warm on the very cold night.
A. Quietly

- B. Excitedly
- C. Aimlessly
- D. Steadily
- E. Energetically

Reading 1 (for questions 46-50)

When an earthquake measuring 7.8 on the Richter scale struck the west coast of Sumatra on Wednesday night, March 2016, thousands of residents of Sikakap district, Mentawai Island, rushed to nearby hills. Everyone, including children and the elderly, had to stay there all night. Having learned from a devastating tsunami in 2010 and previous drills organized by the authorities, the residents took the prepared paths to higher ground located a kilometer from North Pagai beach. Fortunately, the tremblor, slightly more intense but further from the islands than that of 2010, caused no damage or loss of life. However, fear remained after the residents arrived at the hill as no shelter or telecommunication facilities to call for assistance were available. Further, the shelters that had been readied after the 2010 tsunami were unusable.

Mentawai islands Disaster Management Agent lamented the lack of communication facilities. She said when the earthquake occurred, she was on a boat heading to Padang, and her phone was functioning but she couldn't reach anyone on site. Several other facilities, including tsunami-warning sirens were also out. Given the fact that Indonesia is the world's largest archipelago, it is prone to seismic upheaval because of its location on the Pacific as the "Ring of Fire", an arc of volcanoes and fault lines circling the Pacific Basin.

A local rights activist with the Alliance of Indigenous People (AMAN) said the earthquake should be a wake-up call for the central government and local authorities to better equip tsunami-prone areas. Meanwhile, the government praised

the preparedness of local residents. "What's important is how people respond immediately by leaving houses and buildings to seek higher ground. And all of that was put into practice last night by the people in Mentawai Islands". The risk of tsunamis is still an endemic in the archipelago, said the government officer. Hence, to increase the budget for tsunami-mitigation efforts is urgent.

46. Reading through the text above, what is the main message of the first paragraph :

- A. The Sikakap's people are well prepared
- B. The people are aware about the earth quake
- C. There is no victims for the current earth quake
- D. The fear of an earth quake remains strong within the residents
- E. The people run to higher areas for a safe place

47. Where is the place to which the resident head to after the news that the Tsunami struck

- A. To the district of Sikakap, Mentawai – West Sumatra
- B. The hilly and higher areas around them
- C. To the save places apart from their own houses
- D. To North Pagai Beach areas
- E. Away from the hills

48. What is the biggest fear that people have to face as soon as they arrive at the hilly areas?

- A. They are well prepared to save their own life by themselves
- B. There were no tools for the residents to stay in contact
- C. The awareness of the local authorities in sufficient

- D. Some of the sensors for earthquake are working well
 - E. That they will have facilities for a while
49. The meaning of "Ring of Fire", for the final sentence of the second paragraph implies that:
- A. Indonesia lays out on the dangerous areas
 - B. The mountain areas around them
 - C. Provinces are at highest risks for
 - D. There will be dangerous coming all the time
 - E. An areas with lots number of volcanic and earthquakes occur
50. The important message suggested for the people on the areas with more earthquakes is:
- A. Indonesian should aware on dangerous areas
 - B. How good people support their family
 - C. Provinces of Indonesia are at best areas
 - D. How people practice to respond quickly
 - E. How each family members understand the earthquake

Reading 2 (for questions 51-55)

BPS-Statistics Indonesia will soon conduct Economic Census (EC) 2016 to obtain new data related to the business sector in Indonesia. The EC is conducted for every ten years, and aimed at obtaining data on the total number of business sectors in Indonesia. As stated by the head of BPS, the Economic Census will cover characteristics, types, and distributions of all business sectors in Indonesia, from cities to remote areas.

Previously the Economic Census was conducted for 1986, 1996 and 2006. It was a primary source of statistical data based on various economic sectors excluding the agriculture sector. The main objective is to obtain the population of business in Indonesia by economic sector, activities, business skill and region. Further, it also updates the directory of business register, master sampling frame of economic activities, develops as well as creates a map of economic activities distribution. At last, the result of this EC is to collect detail information on the structure of all economic activities. The coverage of EC is mainly for all non-agricultural businesses or establishment in Indonesia.

This EC has been planned since 2014 for its preparation phase while the field survey will be conducted in 2016. The information and data gathered will then be processed and analyzed "from 2017 to 2018 to businesses from the micro to macro scale. This survey will also cover all economic activities including haberdasher and street vendors. The business sectors that will be surveyed include the fields of manufacturing, housing, mining, excavation, domestic, and overseas trading, as well as services. The agricultural business sector will not be covered as the BPS surveyed the field in 2013.

51. What is the Census Economy that is conducted this year covers items on :
- A. People activities in urban and rural areas
 - B. All activities of each sectors of the economy
 - C. Characteristics, types, and distributions of all businesses excluding agricultural sector
 - D. Those nonfood sectors activities
 - E. Particularly activities runs by the street vendors

52. In second paragraph, the first target 2016 Economic Census aimed to obtain

- A. Details on all sectors activities
- B. Mapping the data for the economic activities
- C. Identification on numbers of activities around areas
- D. Information on the economic sector, activities, business skill and region
- E. Information on agricultural activities

53. How long does it take for Economic Census before the final outcomes will be available for general use:

- A. It needs two years to ruin the economic census
- B. It needs 2 years to prepare and another 1 to 2 years to analyze
- C. It depends on how well the preparation on each region can be done
- D. It needs number of years as Indonesia consists of thousand islands
- E. It needs more than a year after all the data can be collected

54. The underline word "haberdasher" and street vendors that stated in sentences of the second paragraph represents:

- A. Type of works that in line with the informal sectors
- B. All activities or income earning
- C. Kinds of economic activities for youngster
- D. Interesting places that need specialized skills
- E. Those seller that provides food and beverages

55. What is the main idea of the final paragraph:

- A. Type of works that in line with the informal sectors
- B. All activities or income earning
- C. Kinds of economic activities for youngster
- D. Interesting places that need specialized skills
- E. Those seller that provides food and beverages

Reading 3 (for questions 56-60)

Before we smoke, it is better to look at the fact of smoking effects, not only for smokers but also for non-smokers. About 50 thousand people die every year in Britain as a direct result of smoking. This is seven times as many as deaths in road accidents. Nearly a quarter of smokers die because of diseases caused by smoking.

Ninety percent of lung cancers are caused by smoking. If we smoke five cigarettes a day, we are six times more likely to die of lung cancer than a non-smoker. If we smoke twenty cigarettes a day, the risk is nineteen times greater. Ninety five percent of people who suffer from bronchitis are people who smoke. Smokers are two and half times more likely to die of heart disease than non-smokers.

Additionally, children of smokers are more likely to develop bronchitis and pneumonia. In one hour in a smoky room, a non-smoker breaths as much as substance causing cancer as if he had smoked fifteen cigarettes.

Smoking is really good for tobacco companies because they do make much money from smoking habit. Smoking, however, is not good for everybody else.

56. What is the text about?

- A. A report of deaths caused by smoking
- B. The effects of smoking for people

- C. A calculation of how many cigarettes that may cause cancer
 - D. Information of the effect of smoking to non-smokers
 - E. The result of smoking habit for tobacco companies
57. Which of the statements below is TRUE?
- A. Smoking only does a good impact for the tobacco company
 - B. Non-smokers don't have any threat of getting pneumonia
 - C. Fifteen cigarettes a day is all right for smokers
 - D. Smoking can risk ninety five percent of the people in a country
 - E. The risk caused by smoking for non-smokers is low
58. What is the effect of smoking to non-smokers?
- A. It makes non-smokers healthy
 - B. It makes non-smokers a good life
 - C. It risks non-smokers health
 - D. It causes so much fun
 - E. It results in a better lung function
59. What is the communicative purpose of writing the text?
- A. To make people realize the risk of smoking
 - B. To make non-smokers stay away from smokers
 - C. To make the government stop tobacco production
 - D. To make people in Britain stop smoking
 - E. To make the doctors find the cure of lung cancer
60. "This is seven times as many as deaths in road accidents." (Paragraph 1).
The underlined word refers to
- A. The smoker
 - B. The non-smokers
 - C. The data
 - D. The accident
 - E. The company
