

Nigerian Custom Service Recruitment Interview Past Questions

ENGLISH 1 (SSC & DSSC ARCHIVES)

Fill in the blank in the following sentences making use of the best of the options.

1. Last week. at the theatre was the largest had ever seen. A. assembly
B. congregation C. convention D. audience E. crowd.
2. Before the operation, the dentist found that his patient's teeth..... A. Have long
decayed. B. have long been decayed. C. have long being decayed. D. have been decayed.
3. The bridge connecting the two cities was by the enemy. A. blown up B. blown down
C. blown off D. blown over E. blown away
4. My little boy suffering.jaundice. A. from B. of C. for D. with E. by.
5. It was a long poem but he learnt it A. off head B. in memory C. by D. at heart
E. from memory.
6. Why does a flamingo stand on one legs? A. Because if it lifted the other one it
would.....
A. go down B. led down. C. fall down. D. come down. E. get down.
7. Grace must be allergic.....Smoke because anytime she sits by someone who is smoking,
she sneezes. A. to B. from C. for D. with E. by .
8. The meeting starts two O'clock, please be punctual. A. about B. in C. on D. by
E. around
9. He travelled to Jos..... train when he came last month. A. by B. in C. on D. inside
E. through.
10. It is time we..... this irresponsible member A. expel B. are to expel C. will expel
D. are expelling E. expelled.
11. Although he was invited.he was not welcome. A. but B. yet C. so D. since
E. because.
12. He is easily the..... of the lot. A. brightest B. brighter C. more bright D. most
brighter
E. most bright.
13. several bad air-crashes recently. A. There is B. they are C. there were D. There
have been E. There are. 14. Visitorspass beyond this point. It is forbidden. A
needn't B. don't have to C. could
not D. cannot E. must not.
15. By next June he four novels A. will write B. is writing C. will have written
D. '
written E. has written.

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16. Itso hard that all the cars have stopped moving. A. rains B. will rain C. is raining|
D. was raining E. might rain.
17. He acts..... he were a manager A. like B. such as C. such D. as E as if
18. John arrived at the airport on time but he could not get the plane. A. into B. on
in D. to enter E. to
19. There is no doubt that every lady takes great pride.....her appearance. A. with B. in
C. at D. on E. loosed.
20. James..... reminding that not all that glitters is gold. A. needs B. need C. needing
D. needs to E. need to.

Choose the word or phrase closest in meaning to the underlined word.

21. The discussion became animated. A. specialized B. lived C. intellectual D. unruly
E. opportune.
22. Rich citizens are often niggardly in their ways. A. beggarly B. sordid C. miserly D.
pomp E. excited.
23. Thompson was a prosecution witness at the court hearing. A. false B, reliable C.
gover
D. trial E. true.
24. This is miniaturized version of your A. compressed B. abridged C. decreased D.
smalle
E. all of the above.
25. I cannot understand how he suddenly became audacious contrary to his nature A.
proud
B. bold C. rude D. hostile E. none of the above.
26. The judge always takes a hard-line on such issues. A. complex stand B. simple stand
C. uncompromising stand D. difficult stand E. easy stand.
27. That team has become indomitable quite recently. A. incorrigible B. disobedient
C. unconquerable D. unruly E. simple.
28. Your reaction underscores the point I was making. A. reveals B. proves wrong C.
emphasizes D. justifies E. exposes.
29. Tom's aberrant behavior attracted attention. A. rascally B. selfish C. heady D. abnor
E. rude.

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30. The Professor's thesis was the *precursor* of nuclear studies. A. preliminary B. climax
C. developer D. forerunner E. end.
31. Most of his observations were wide of the mark. A. comprehensive B. irrelevant C.
pertinent D. came rather late E. unacceptable.
32. He has a big hear but he is inept at following witty conversation. A large B. huge C.
D. placid E. fragile.
33. The convict said he was tired of leading a dog's life, to lead a dog's life means to live
A. carelessly B. in disgrace C. in solitude D. in misery E. in poverty.
34. When kerosine was poured on the fire, the effect was instantaneous. A. momentary
B. momentous C. amazing D. terrifying E. immediate.
35. My spell in the University was an unmitigated disaster. A. an unavoidable B. a painful
C. a regrettable D. an unqualified E. an unfortunate.

Choose the option opposite in meaning to the word(s) or phrase underlined.

36. A book on style without abundant examples seems to me as ineffectual as a book on
bioli without abundant illustrations. A. useless B. difficult C. interesting D. satisfactory
E. attractive.
37. To most people last Christmas was an austere period. A. prosperous B. harsh C. sever
D. sour E. stern.
38. Chidi is naturally taciturn A. friendly B. cheerful C. dumb D. lively E. garrulous.
39. He is loved for his altruism A. benevolence B. sincerity C. selfishness D.
selflessness E. kindness.
40. Wilfred was a mindless criminal A. strong B. mindful C. feeling D. memorable E.
stupid.
41. The judge blamed the plaintiff for misleading the court. A. defendant B. complainant
C. accused D. prosecution E. accuser.
42. The girl is very intelligent, but her jokes are rather outrageous A. offensive B.
courageous C. pleasant D. unwholesome E. unreasonable.
43. Ogedengbe was an intrepid fighter for human freedom and dignity. A. timid B. half-
hearted C. fearless D. undaunted E. courageous.
44. The difference between the experimental procedures was imperceptible to me. A.
negligible
B. significant C. obvious D. obscure E. oblique.
45. His antipathy to religious ideas makes him unpopular A. remedy B. consciousness
C. hostility D. receptiveness E. dislike.

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Attempt questions 46-50 and choose the correct option.

46. One of the following was not one of the registered political parties during the second Republic. A. National Party of Nigeria B. Nigerian People's Party C. people's Redemption Party. D. National republican Convention E. national Advanced Party.

47. The Nigerian Civil War lasted between A. June 1966 -July 1970 B. Jan. 1966 - Jan. 1970 C. July 1967-Jan. 1970 D. July 1966-Jan. 1970 E. Jan. 1967-Jan. 1970.

48. One of the following States is known as "home of peace" A. Ogun State B. Osun State C. Jigawa State D. Borno State E. Katsina State.

49. The late Dr. Nnamdi Azikiwe was born in A. Nsukka B. Onitsha C. Calabar D. Kano E. Zungeru.

50. Dr. Nnamdi Azikiwe died in A. 1986 B. 1989 C. 1993 D. 1996 E. 1990.

ANSWER KEYS

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

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ENGLISH PART 2

Choose the suitable option for the questions below:

1. One factor that enhances efficient reading is? A. regression B. flexibility C. use of dictionary D. finger pointing E. vocalization
2. Skimming involves all the following except? A. glancing through the table of content B. careful reading of the text C. examining the headings and sub-headings of the text D. understanding the organizational pattern of the text E. none of the above
3. When our purpose of reading is to search for a specific piece of information, we adopt one of the following techniques A. SQ3R B. skimming C. scanning D. intensive reading E. extensive reading
4. One of these is an impediment to speed reading? A. concentration B. subvocalization C. soundlessness D. phrase reading E. repetition
5. Which of the following is not applicable in reading for links? A. use of synonyms or near synonyms B. use of pronouns C. use of connectives D. repetition of keywords E. use of examples
6. When we read for details, we look for all but one of the following: A. topic sentences B. definition C. repetition D. use of illustration D. explanation
7. In the 'SQ3R' technique, '3R' simply means: A. reading, recalling, resting B. reviewing, rehabilitation, reciting C. reading, reciting and reviewing D. recalling, reviewing and reciting E. reciting, reading and reviewing
8. Which of the following is not a good reading habit? A. phrase reading B. rhythmic eye movement C. flexibility D. finger pointing E. concentration
9. The reading speed of a student who reads a text of 1600 words in 8minutes is? A. 300wpm B. 400wpm C. 600wpm D. 200wpm E. 100wpm
10. A careful detailed reading with intense concentration is? A. critical reading B. reading for links C. intensive reading D. extensive reading E. scanning
11. To locate the main idea of a text, the reader should focus on the: A. example B. repetition C. topic sentence D. paragraph E. none of the above
12. Which of these is not a benefit of extensive reading? A. source of pleasure B. a source of acquisition of general knowledge C. a source of relaxation D. a source of excitement E. none of the above

QUESTIONS 13 – 17

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If we examine the opportunities for education of girls or women in developed countries, we usually find a dismal picture of girls or women in less developed countries, we usually find a dismal picture. In some countries, the ratio of boys to girls in secondary is more than seven to one. What happens to the girls? Often they are kept at home to look after younger siblings and to perform a variety of domestic chores. Their education is not perceived as in any way equal in importance to that of boys. When a non-literate or barely literate girl reaches adolescence, she has little or no qualification even if her community provides any opportunity for employment of women. The solution is to get her married as soon as possible with the inevitable result that she produces children too soon; too often and too late. With no formal education, she is hardly aware that there is any alternative. In a study made in Thailand, it was noted that the literate woman marries later and ceases childbearing earlier than her non-literate counterpart. But the latter is so chained to her household by the necessities of gathering fuel, preparing food and tending children that she very difficult to reach, even if health services, nutrition education, maternal and children health centres are available in her communities. She does not understand what they are intended to do.

13. Another word that means the same thing as 'counterpart' as used in the passage is? A. partner B. brother C. concubine D. neighbor E. all of the above
14. The phrase 'chained to her household' from the context implies..... A. close to her household B. attached to her household C. imposed on her household D. related to her household E. none of the above
15. According to the passage, most girls are not in school because A. they sell fuel B. they are mal-matured C. they perform a variety of domestic chores D. they have other counterparts E. they are psyche
16. The phrase 'dismal picture' connotes..... A. disappointment B. anxiety C. disturbed D. pitiable E. counterpart
17. The phrase 'what they are intended to do' from the passage indicates A. it is too late for her B. she finds it difficult C. she does not deem it necessary D. she does not understand E. she is barely literate

SECTION C: VOCABULARY DEVELOPMENT

18. 'Pre-degree' is an example of A. idiom B. affixation C. collocation D. lexis E. antonym
19. Which of these sets of words is not regarded as synonyms? A. calamity/misfortune B. richness/abundance C. poverty/lack D. encourage/discourage E. unable/temporary

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20. The relationship that exists between a light paper and a bright light is that of..... A. homonymy B. oxymoron C. polysemy D. antonymy E. synonymy
21. The underlined morpheme in the word government is called A. prefix B. suffix C. preliminary D. additive E. none of the above
22. One of the following is not a word formation process? A. borrowing B. blending C. clipping D. acronym E. antonyms
23. The relationship that exists between Hibiscus, Queen the night, Sun flower and Rose flower is that of..... A. hyponymy B. oxymoron C. polysemy D. homonymy E. none of the above
24. The prefix 'proto' in the word 'prototype' means: A. original B. new C. half D. myself E. assistance
25. Adding the prefix 'im' to the word 'potent' is known as the process of: A. addition B. suggestion C. affixation D. potency E. polysemy
26. The lexical relation that explains the word 'GSM' is called: A. abbreviation B. polysemy C. bigamy D. hyponymy E. acronym

SECTION D: COMPREHENSION/SUMMARY/OUTLINE/IDIOMS

27. Comprehension at the inferential level entails one of the following: A. understanding the meaning of the words B. understanding both the denotative and connotative meaning C. comprehending relationship and ideas implied in the passage which are not explicitly stated D. comprehending the denotative meaning of the words only E. comprehending the relationship between words only
 28. Comprehension serves the following purposes except: A. explanation of facts B. knowledge of the author C. understanding the meaning of words used in the passage D. drawing conclusions E. all of the above
 29. One of these is not a significance of summary, it helps: A. in the reduction of the passage to certain proportion B. in note-taking C. improving one's power of expression D. in getting main ideas expressed in the passage E. in reading and understanding texts
 30. Outlining is mainly used in: A. reading B. writing C. listening D. scanning E. all of the above
- Choose the option that interprets the underlined phrases
31. His invitation came out of the blue: A. by air B. by sea C. unexpectedly D. timely E. none of the above
 32. Joe is very amiable and down to earth: A. devoted B. practical C. very short and rough D. lively

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33. Meter is an unknown quantity: A. small B. unpredictable C. well known D. unknown
34. It rained cats and dogs A. heavily B. lightly C. continuously D. like animals E. none of the above
35. Letters serve the following purposes except: A. mirroring the writer's level of literacy B. showing the writer's knowledge of grammar and conventions C. serving as practical exercise for effective writing D. serving as productive practical exercise for effective writing E. all of the above
36. Which of these is the appropriate format for writing a date in a letter? A. 12th April, 2013 B. 12th april, 2013 C. 12th April, 2013 D. 12 april, 2013 E. all of the above
37. The suitable complimentary close for a letter with the salutation 'Dear Mr. Obi' is A. yours faithfully B. yours sincerely C. your friend D. your obedient servant E. none of the above
38. The curriculum vitae is: A. a brief written account of a person's education and past employment B. a personal resume C. a short record in an outline form written by a person about himself D. all of the above E. none of the above
39. Which of these items is not part of the writer's address in letter writing? A. date B. town C. state D. country E. all of the above
40. One of these is not a significance of an outline: A. it serves as a plan for organizing ideas properly B. it serves as check for organization C. it conceals the plan of an essay D. all of the above E. none of the above
- From the list of words lettered A to D, choose the word or group of words that is most nearly opposite in meaning to the underlined word.*
41. There is no doubt that pride is less desirable a quality than__ . A. arrogance B. honesty C. efficiency D. humility.
42. Few people prefer the rural to the_____areas. A. modern B. urban C. pastoral D. rustic.
43. Dan is quite refined in his manners but his colleague is rather_____.A. arrogant B. crude C. cultured D. unskillful
44. Instead of helping to preserve our culture, the youth engage in activities that_____it. A. denounce B. alter C. conserve D. destroy.
45. We should regard donations as_____and not compulsory. A. mandatory B. necessary C. voluntary D. obligatory.

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46. The affluence of the politicians contrast with the_____of the masses. A. poverty B. paucity
C. misery D. suffering.
47. The importation of rice is permitted while that of wheat is_____. A. allowed B. suspended C. inhibited D. prohibited.
48. The goal scored in the second half of the match lifted the team from the agony of defeat to the_____of victory. A. hope B. celebration C. ceremony D. ecstasy.
49. One species of the animal has gone into extinction while the other is still in_____. A. antiquity B. oblivion C. existence D. irrelevance.
50. The Council ratified the controversial recommendation which we thought would be_A. refuted B. rejected C. authenticated D. corroborated.

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

For No9: Reading speed = $1600/8 = 200$ wpm

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MATHEMATICS

1. Arrange $\frac{3}{5}, \frac{9}{16}, \frac{34}{59}, \frac{71}{97}$ in ascending order of magnitude A. $\frac{3}{5}, \frac{9}{16}, \frac{71}{97}, \frac{34}{59}$ B. $\frac{3}{5}, \frac{9}{16}, \frac{34}{59}, \frac{71}{97}$

C. $\frac{9}{16}, \frac{3}{5}, \frac{71}{97}, \frac{34}{59}$ D. $\frac{9}{16}, \frac{34}{59}, \frac{3}{5}, \frac{71}{97}$

2. Simplify $2^5 \times \frac{17}{12} \times x \times \frac{6}{8} \times \frac{5}{5}$ A. $\frac{1}{6}$ B. $\frac{13}{20}$ C. $\frac{11}{30}$ D. $\frac{9}{4}$

3. If M represent the median and D the mode of the measurements 5, 9, 3, 5, 7, 5, 8 then (M,D) is A. (6,5) B. (5,5) C. (5,7) D. (5,8)

4. A sum of money invested at 5% per annum simple interest amounts to £285.20 after 3 years. How long will it take the same sum to amount to £434.00 at 7 ½ % per annum simple interest? A. 14 years B. 12 years C. 10 years D. 5 years

5. A housewife bought 3kg of garri at N13.00 per kg. She deposited N160.00 for half a cow and bought 24 apples at 10k each. She came back home with N20.60, she therefore left home with A. N201.40 B. N220.00 C. N222.00 D. N180.80

6. If the price of a car fell from N280,000 to n200,000. Find the percentage decrease? A. 26.57% B. 27.57% C. 28.57% D. 29.5% E. 30.57%

7. A man borrowed N16,000 for 1 year and paid back N18,000. Express the interest paid as a percentage of the principal? A. 1.25% B. 11.25% C. 12.5% D. 13.5% E. 2.5%

8. A householder uses 850 units of electricity in one month. Electricity is charged at N1.20 per unit, monthly demand charge is N10 and VAT at 5%. Find the electricity bill of the householder for the month? A. N1120 B. 1080 C. N1081 D. N1091 E. N1090

9. The supply (s) and demand (d) quantity function is given as $Q_d = 10 - 2p$, $Q_s = -5 + 3p$. Find the equilibrium quantity? A. 5 B. 4 C. 3 D. 2 E. ½

10. Suppose R is the revenue for producing x goods given by the relation $R = x^3 - x^2 - 3$. Find the marginal revenue when $x = 2$? A. $8\frac{3}{4}$ B. $7\frac{3}{4}$ C. $6\frac{3}{4}$ D. 8 E. $1\frac{3}{4}$

11. The price lists p and q are given by the matrix equation
$$\begin{pmatrix} p & p \\ 4 & -3 \end{pmatrix} = \begin{pmatrix} 7 & 7 \\ q & q \end{pmatrix}$$
 Find the value of p+q? A. 6 B. 5 C. 4 D. 3

12. 7 books are to be arranged in 4 empty slots of a book shelf. In how many ways can this be done if each slot can only take a book at a time? A. 7P_4 B. $7!$ C. 24 D. 7C_4

13. A market woman sells oil in cylindrical tins, 10cm deep and 6cm in diameter at N15 each. If she bought a full cylindrical jug, 18cm deep and 10cm in diameter, for N50. How much did she make by selling all the oil? A. N31 B. N25 C. N35 D. N62.50

14. Find the standard deviation in the distribution below?

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class interval	- 5	- 8	- 11
frequency			

A. $\sqrt{3}$ B. $\sqrt{6}$ C. $\sqrt{7}$ D. $\sqrt{2}$

15. Faith, Abum and Favour wrote HND screening test with the following probabilities of passing $\frac{2}{3}$, $\frac{3}{5}$, $\frac{1}{4}$ respectively. Find the probability that only one of them failed? A. $\frac{1}{10}$ B. $\frac{9}{20}$ C. $\frac{3}{20}$ D. $\frac{1}{5}$

16. Simplify $1 + 2\log_2 32 - \log_2 16$ A. 11 B. 7 C. 5 D. 4 E. 28

17. If 2 bags of rice cost N7000 while 3 bags of beans cost N9000. What will be the cost of 7bags of rice and 2bags of beans? A. N24,500 B. N18,500 C. N30,500 D. N81,000 E. N10,500

18. Given that Q is the quantity of some goods and P is the price of each of those goods, find the quantity as well as the price if $4Q + 3P = 350$ and $3Q + 5P = 400$ A. (N50, N50) B. (N60, N40) C. (N70, N30) D. (N55, N45) E. None of the above

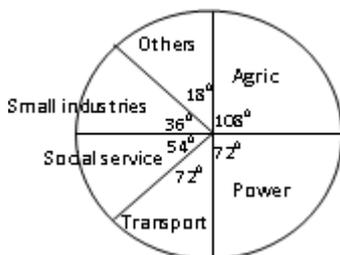
19. A worker who receives fixed annual increment had a salary of N100,000 after 4 years. If his total salary over 4years was N300,000. What was his initial salary? A. N40,000 B. N25,000 C. N50,000 D. N60,000 E. N75,000

20. A student was presented with 5 new books because he took first position in the class. If he has only 3 empty spaces in his book shelf; in how many ways can these books be arranged in those empty spaces? A. 60ways B. 10ways C. 15ways D. 20ways E. 30ways

21. The cost of producing some goods (x) is given by $\frac{d}{dx}(4xx^3 + 3xx^2 + 2xx - 1)$. Find the cost if the fixed cost of those goods(x) is given as N150. A. $x^4 + x^3 + x^2 - x + 150$ B. $12x^2 + 6x + 152$ C. $4x^3 + 3x^2 + 2x + 149$ D. 150 E. None

22. How many numbers greater than 3000 can be formed with the digits 1,2,3 and 5? A. 24 B. 6 C. 12 D. 18 E. 36

23. The pie chart below presents the fund allocation for a development plan in a village



If a total of thirty six million (N36,000,000)naira only was allocated, how much was for both agriculture and social services? A. N10,800,000 B. N5,400,000 C. N16,200,000 D. N160,000,000 E. N108,000

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24. The following table shows the frequency distribution of the masses to the nearest kg of 100 men.

Mass (kg)	55-59	60-64	65-69	70-74	75-79	80-84	85-89	90-94	95-99	100-104
Frequency				3	5	3	0			

What is the probability that a man in the group chosen at random weight 70 and 84kg? A. 0.61
 B. 0.23 C. 0.25 D. 0.13 E. None of the above

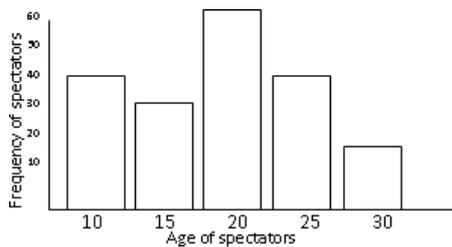
25. Find the median of the numbers: 46, 35, 48, 32, 24, 44, 32 A. 35 B. 43 C. 39 D. 44 E. 37

26. The table below shows the distribution of scores in a mathematics test. Find the mean score.

Score					
Frequency			2	5	

A. 5 B. 3 C. 1 D. 4 E. 6

The bar chart below shows the age distribution of spectators in a village football match. Use the information to answer questions 12 and 13



27. How many spectators were of age 20 years and below? A. 130 B. 120 C. 45 D. 35 E. 100

28. How many people watched the football match? A. 100 B. 190 C. 150 D. 130 E. 120

29. A class of 33 students took a test which was marked out of 10. 27 of the students scored 7 marks or less. What is the probability that a student chosen at random from the class scored more than 7? A. 9/11 B. 7/33 C. 7/10 D. 2/11 E. 3/10

30. A box contains 5 red balls and 4 white balls. A ball is selected from the box at random without replacement. What is the probability of selecting 2 balls of different colours? A. 20/81 B. 5/16 C. 5/18 D. 13/18 E. 5/9

The table below shows arrival of customers per minute in 60 randomly selected minutes in a certain bank for ATM services

Number of arrivals (x)						
Frequency (f)	5	3				

Use the data to answer questions 41 - 42

31. What is the average number of customers arriving per minute to the nearest whole number?

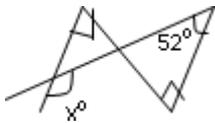
A. 1 B. 2 C. 4 D. 3 E. 6

32. The modal number of arrival is A. 25 B. 0 C. 1 D. 2 E. 5

33. Find the value of x for which $2(3^{2x-1}) = 162$ A. 3/2 B. 1/2 C. 5/2 D. 2/5 E. 2/3

34. Find the square root of 0.000144 in standard form A. 1.2×10^{-4} B. 1.2×10^{-3} C. 1.2×10^{-2} D. 1.2×10^{-1} E. 1.2×10^2
35. Simplify $(a-3b)^2 - (a+3b)^2$ A. $2(a+3b)$ B. $2(a-3b)$ C. $6ab$ D. $-12ab$ E. $12ab$
36. If p and q are the roots of the equation $6 - x - x^2$, find p+q A. 2 B. 1 C. -1 D. -3 E. -2
37. A man 40m from the foot of a pole observes the angle of elevation of the top of the pole to be 30° . Calculate the height of the pole. A. 40m B. $40\sqrt{3}$ m C. 20m D. $\frac{40\sqrt{3}}{3}$ m E. $20\sqrt{3}$ m
38. A regular polygon has 8 sides. What is the size of one of its exterior angles? A. 20° B. 30° C. 40° D. 45° E. 35°

39. Find the size of the angle marked x in the figure below



- A. 108° B. 112° C. 128° D. 142° E. 115°
40. Evaluate $\log_2 8 - \log_3 1/9$ A. $3/2$ B. 3 C. 2 D. 5 E. $2/3$
41. Simplify $\frac{16 \frac{1}{4} \div 81}{9 \frac{1}{2} \times 16}$ A. $\frac{1}{3}$ B. $\frac{1}{2}$ C. $\frac{2}{3}$ D. $\frac{8}{9}$
42. If $\log_3 18 + \log_3 3 - \log_3 X = 3$, find x? A. 0 B. 3 C. 1 D. 2
43. A man deposited N5,000 in a bank at an interest rate of 5% per annum for 6 years. Find the accrued amount at the end of the 6th year? A. N6,500 B. N1,500 C. N4,500 D. N738.72
44. A particular commodity undergoes two price changes due to quality which is given as $3^{2p} = 12(3^p) - 27$. If P is the price in hundreds of naira, find the possible values of P? A. (N300, N900) B. (N100, N300) C. (N100, N200) D. (N200, N300)
45. If $5^{x+1} + 5^x = 150$, find x? A. 1 B. 2 C. 4 D. 3
46. The cost of video cassettes decreases from N300 per cassette to N270 per cassette. Find the percentage rate of reduction? A. 10% B. 8% C. 20% D. 15% E. 5%
47. A driver was paid N2,500 for delivering 10000 cartons of Biscuits to a warehouse in Onitsha main market. What is his rate of pay per 100 cartons? A. N400 B. N300 C. N30 D. N40 E. N25
48. A small pack of beer containing 4 bottles costs N600 and a large pack containing 24 bottles costs N3,360. Find the amount saved by buying a larger pack instead of small packs? A. N230 B. N240 C. N960 D. N690 E. N420

49. If N9,600 was shared among three boys Ola, Agha and Chukwudi in the ratio 3:4:5 respectively, what is Chukwudi's share? A. N2400 B. N800 C. N4000 D. N3200 E. N400
50. Suppose a woman invested N20,000 on a business at an annual interest rate of 6%. Find her balance at the end of the year if interest is compounded semi-annually? A. N21,219 B. N21,218 C. N21,217 D. N21,216 E. N21,215
51. The mean of the numbers 1.2, 1.0, 0.9, 1.4, 0.8, 0.8, 1.2 and 1.1 is A. 1.05 B. 1.5 C. 1.02 D. 1.0
52. A man and his wife went to buy an article costing N400. The woman had 10% of the cost and the man 40% of the remainder. How much did they have altogether? A. N216 B. N200 C. N144 D. N184
53. Evaluate correct to 4 decimal places 827.51×0.015 A. 8.8415 B. 12.4127 C. 124.1265 D. 12.4120
54. The angles of a quadrilateral are $(3y+10)^\circ$, $(2y+30)^\circ$, $(y+20)^\circ$ and $4y^\circ$, find the value of y? A. 12° B. 30° C. 42° D. 66°
55. Evaluate $3\frac{-1}{1} - 1\frac{-1}{2} - 1\frac{-1}{1}$ A. -4 B. 4 C. -12 D. -2
56. A man bought a second-hand photocopying machine for N34,000. He serviced it at a cost of N2,000 and then sold it at a profit of 15%. What was the selling price? A. N37,500 B. N40,400 C. N41,400 D. N42,400
57. The marked price of an item is N500. If a discount of 10% is given, at what price is the item sold? A. N200 B. N250 C. N300 D. N450
58. A man invested the sum of N280 partly at 5% and partly at 4%. If the total interest is N12.80 per annum, find the amount invested at 5%. A. N14.40 B. N120 C. N140 D. N160
59. A man earns N3,500 per month out of which he spends 15% on his children's education. If he spends additional N1,950 on food, how much does he have left? A. N525 B. N1,025 C. N1,950 D. N2,975
60. At what rate would a sum of N100 deposited for 5 years raise an interest of N7.50? A. $1\frac{1}{2}\%$ B. $2\frac{1}{2}\%$ C. N15% D. N25%

61. Three brothers in a business deal shared profit at the end of a contract. The first received $\frac{1}{3}$ of the profit and the second $\frac{2}{3}$ of the remainder. If the third received the remaining N12,000, how much profit did they share? A. N60,000 B. N54,000 C. N48,000 D. N42,000
62. Oke deposited N800 in the bank at the rate of $12\frac{1}{2}\%$ simple interest. After sometime, the total amount was one and half times the principal. For how many years was the money left in the bank? A. 2 B. 4 C. $5\frac{1}{4}$ D. 8
63. A tax payer is allowed $\frac{1}{8}$ of his income tax-free and pays 20% of the remainder. If he pays N490 tax, what is his income? A. N560 B. N2,450 C. N2,800 D. N3,920
64. By selling 20 oranges for N1.35, a trader makes his percentage gain or loss if he sells the same 20 oranges for n1.10? A. 18% B. 10% C. 12% D. 15%
65. A sum of money was invested at 8% per annum simple interest. After 4 years, the money amounts to N330. Find the amount originally invested? A. N180 B. N165 C. N150 D. N250
66. What percentage of N20,000 is N5,000? A. 4% B. $\frac{1}{4}\%$ C. 25% D. 15%
67. The supply of certain goods is given by $q = 92 - 3^s$. Find the quantity supplied if $q = 65$ and s denotes quantity supplied A. 5 B. 3 C. 6 D. 27
68. An insurance company rents its premises. The rental arrangement provides for a regular annual increment of N10,000. If the rent in the first year is N50,000, find the rent in the 6th year A. N100,000 B. N120,000 C. N200,000 D. N160,000
69. The prices of two garments are such that their sum is N100 while their difference is N70. Find the price of the costlier garment A. N15 B. N170 C. N85 D. N30
70. A man deposited N5,000 in a bank at an interest rate of 5% per annum for 6years. Find the accrued amount at the end of the 6years AN1500 B. N3500 C. N6,500 D. N6,700
71. The cost of producing some items denoted by Nx is given as $\frac{d(dx)}{dxxx} = 3x^2 - 1$. Find the cost if the fixed cost of those items is N100? A. N100 B. $x^3 + N100$ C. $x^3 - x + N100$ D. $x^2 - x + N100$

72. 9 men did a piece of work in 8 days. In how many days will 6 men of equal ability do the same piece of work? A. $6\frac{3}{4}$ B. $5\frac{1}{3}$ C. 12 D. 14

73. $\frac{1}{3}$ of a man's monthly income is spent on his first son, $\frac{2}{5}$ of the remainder on his last daughter. If $\frac{1}{4}$ of the money is meant for feeding, how much is his monthly income if he still has N51,000 unused after all his expenses? A. N210,000 B. N150,000 C. N340,000 D. N180,000

74. How long will it take a sum of money to double itself at 5% per annum simple interest A. 15yrs B. 20yrs C. 25yrs D. 18yrs

75. The hire purchase of a car is N800,000. If 20% of this sum is paid as deposit and the rest is paid in 10 equal monthly installments, calculate the amount of each monthly installment? A. N64,000 B. N640,000 C. N160,000 D. N74,000

76. The 5th term of an AP is 11 and the 8th term is 17, find the A.P.? A. 7,5,3 B. 3,5,7 C. 2,4,6 D. 3,6,9

77. List the numbers of the set $\{y:1 < y \leq 6, y \in Z\}$ (Z is the set of integers) A. $\{2,3,4,6,7\}$ B. $\{2,3,4,5,6\}$ C. $\{2,3,1,5,7\}$ D. $\{1,2,3,4,6\}$

78. If $y = \sin x \cos x$, find $\frac{dy}{dx}$ A. $\sin^2 x - \cos^2 x$ B. $\cos^2 x - \sin^2 x$ C. 1 D. $-\sin^2 x - \cos^2 x$

79. Find the values of x for which $f(x) = \frac{-3}{x^2 - x - 2}$ is not defined A. -1,2 B. 1,-2 C. 1,2 D. -1,-2

80. Make f the subject of the formula $s = ut + \frac{1}{2}ft^2$ A. $\frac{2(s-ut)}{t^2}$ B. $\frac{2s-ut}{t^2}$ C. $\frac{2s-ut}{t^2}$ D. $\frac{2s-ut}{t^2}$

81. Find the solution of the inequality $12 + 4s - s^2 < 0$ A. $\{s:s > -2\} \cup \{s > 6\}$ B. $\{s:s > 2\} \cup \{s < 6\}$ C. $\{s:s > -2\} \cup \{s < 6\}$ D. $\{s:s < -2\} \cup \{s > 6\}$

82. If α and β are the roots of the equation $2x^2 - x - 3$, find $\frac{1}{\alpha\alpha} + \frac{1}{\beta\beta}$ A. $-\frac{1}{3}$ B. $-\frac{1}{3}$ C. $\frac{3}{2}$ D. $\frac{1}{2}$

The table below shows the number of eggs in a bird's nest. Use the information on the table to answer questions 31 to 35

o of eggs						
requency		5	3	2		

83. What is the average number of eggs in the nest? A. 4.69 B. 46.9 C. 5.6 D. 17.3

84. What is the mode of the distribution? A. 4 B. 7 C. 6 D. 5

85. If a nest is chosen at random, what is the probability that it contains at least 5 eggs? A. 0.53

B. 0.66 C. 0.34 D. 0.87

core						
requency			1	0		

86. The table above shows the distribution of marks in a class test. If the average mark is 2.65, what is the value of x? A. 2 B. 3 C. 5 D. 7

87. In how many ways can the word MATHEMATICS be arranged? A. 4989600 B. 39916800

C. 9979200 D. 6652800

88. What is the probability that two elements selected from P and Q are both prime numbers? A.

$\frac{1}{3}$ B. $\frac{5}{12}$ C. $\frac{1}{6}$ D. $\frac{5}{6}$

89. A regular polygon has 150° as the size of each interior angle. How many sides does it have?

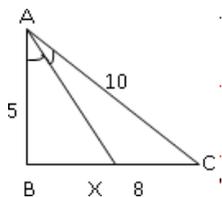
A. 12 B. 10 C. 9 D. 8

90. A chord of a circle is 8cm in length. Its distance from the centre of the circle is half the radius

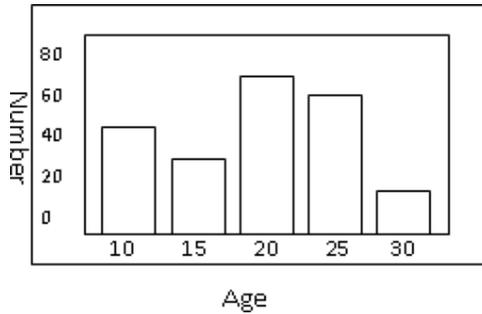
of the circle, what is the radius of the circle? A. $\frac{4\sqrt{3}}{3}$ cm B. $4\sqrt{3}$ cm C. $\frac{8\sqrt{3}}{3}$ cm D. 8cm

91. In the figure below, AX bisects $\angle BAC$. If $|AB| = 5$ cm, $|AC| = 10$ cm and $|XC| = 8$ cm,

calculate BX A. 16cm B. 8cm C. 4cm D. 10cm



92. The bar chart below shows the age distribution of spectators in a football match, how many spectators were of age 20 years and above? A. 130 B. 120 C. 45 D. 35



74. If $1.68 \div 0.0021 = p \times 10^n$ where $1 < p < 10$ and n is an integer, find n ? A. -2 B. -1 C. 1 D. 2 E. 8

75. If the sum of 3 and n is squared, the result is equal to double the square of n . Which of the following equations is equivalent to this statement? A. $9+n^2 = 2n^2$ B. $(n+3)^2 = 2n^2$ C. $(n+3)^2 = (2n)^2$ D. $n^2+3 = 2n^2$ E. $9+n^2 = (2n)^2$

76. A man drove for 4 hours at a certain speed, then doubles his speed and drove for another 3 hours. Although he covered 600 km. At what speed did he drive for the last 3 hours? A. 50 km/h B. 60 km/h C. 100 km/h D. 120 km/h E. 40 km/h

77. An interior decorator has 10 balloons comprising of 5 red, 3 green and 2 yellow for special decoration reception. In how many ways can the balloons be arranged? A. 2,500 B. 1,260 C. 252 D. 875 E. 5040

78. How many two digit numbers can be formed with the digits 5,2,4,8,1? A. 120 B. 20 C. 80 D. 40 E. 60

79. How much should I pay per share for a 6% per value preferred stock if I want it to yield 8% on my investment? A. N50 B. N75 C. N25 D. N80 E. N65

80. A real estate salesman receives a commission of N22500 for selling a house for N1500000. Find the rate of commission? A. $1\frac{1}{2}\%$ B. 2% C. 3% D. $2\frac{1}{2}\%$ E. $3\frac{1}{2}\%$

81. A cabinet sink retails at N1440. If the rate of markup was 20% of the cost, what was the cost? A. N2000 B. N1200 C. N1400 D. N200 E. N800

SOLUTIONS

1. D

2. $2\frac{5}{12} - 1\frac{7}{8} \times \frac{6}{5} \Rightarrow 29/12 - 15/8 \times 6/5 = 1/6 \dots A$

3. 3,5,5,5,7,8,9 \Rightarrow mode=5, median =5 ...B

4. $I = \frac{PPPPPT}{100} \Rightarrow \frac{PP \times 5 \times 3}{100} \Rightarrow 100I = 15P \Rightarrow P = \frac{100I}{15}$

But $A = P+I \Rightarrow 285.20 = P+I \Rightarrow 285.20 = \frac{100I+I}{15}$

$4278 = 100I + 15I \Rightarrow 115I = 4278 \Rightarrow I = 37.2$

Hence $P = \frac{100I}{15} = \frac{100 \times 37.2}{15} = 248$; In 2nd case;

$P = 248$ (same sum invested), $I = A - P = 434 - 248 = 186$

$T = \frac{100I}{PPP} = \frac{100 \times 186}{248 \times 7.5} = \frac{18600}{1860} = 10$ yrs ...C

5. 3kg at N13/kg costs= N39., Amount deposited for cow = N160, 24 apples at 10k each = N2.4, came back with N20.60. Adding all, she came back with N222 ...C

6. Decrease = 280000 - 200000 = 80000

%decrease = $\frac{80000}{280000} \times 100 = 28.57\% \dots C$

7. $I = 18000 - 16000 = 2000$

$I = \frac{PPPPPT}{100} \Rightarrow P = \frac{100I}{PTT} = \frac{100 \times 2000}{16000 \times 1} = 12.5\% \dots C$

8. Total units = 850, Each units costs 1.20

Total charge = N1020, monthly demand = N10

5% VAT = $\frac{5}{100} \times 1020 = 51$

Total bill = 1020+10+51 = N1081 ...C

9. At equilibrium, supply = demand i.e. $10 - 2p = -5 + 3p$

$10+5 = 3p+2p \Rightarrow 15 = 5p \Rightarrow p = 3 \dots C$

10. $\frac{aaPP}{xxx} = 3x^2 - 2x + 3$ at $x = 2$; $dR/dx = 3(4) - 2(2) + \frac{3}{2(2)} = 8 \frac{3}{4} \dots A$

11. $\begin{matrix} 2 & 1 & 7 \\ 4 & -3 & 9 \end{matrix}$

$2p + q = 7 \dots (i)$ and $4p - 3q = 9 \dots (ii)$...multiply (i) by 2

$4p + 2q = 14 \dots (iii)$ and $4p - 3q = 9 \dots (iv)$

(iii) - (iv): $5q = 23 \Rightarrow q = \frac{23}{5} \dots$ put in (i)

$$2p + \frac{23}{5} = 7 \Rightarrow 10p + 23 = 35 \Rightarrow 10p = 12 \Rightarrow p = \frac{6}{5}$$

$$\text{Hence } p+q = \frac{6}{5} + \frac{23}{5} = \frac{29}{5} = 6 \dots \dots A$$

12. D

13. Volume of a cylinder = $\pi r^2 h$ where $h = 10\text{cm}$ and $r = 3$ i.e. $d/2$

$$\text{Volume of cylindrical tin} = \frac{22}{7} \times 3^2 \times 10 = 282.9\text{cm}^3$$

$$\text{Volume of cylindrical jug} = \frac{22}{7} \times 5^2 \times 18 = 1414.3\text{cm}^3$$

282.9cm^3 was sold at N15 while 1414.3cm^3 was bought at N50

The jug contains $\frac{1414.3}{282.9} = 5\text{cm}^3$ each of the selling tin

She realizes ($5 \times 15 = \text{N}75$) by selling all the oil with a cylindrical tin of volume = 282.9cm^3

Cost price = N50

Sold price = N75

Gain = $75 - 50 = \text{N}25 \dots B$

14. B

15. Faith = $\frac{2}{3}$, Pr(not writing) = $1 - \frac{2}{3} = \frac{1}{3}$

Abum = $\frac{3}{5}$; Pr(not writing) = $1 - \frac{3}{5} = \frac{2}{5}$

Favour = $\frac{3}{4}$; Pr(not writing) = $1 - \frac{3}{4} = \frac{1}{4}$

Pr(one 1 of them failed) = Pr(either 2 passed and 1 failed)

= Pr(either faith, favor pass & Abum fail) + Pr(either faith, Abum pass & favour fail) + Pr(either

$$\text{Abum, favour pass & faith fail}) = \frac{\binom{2}{3} \binom{3}{4} \binom{2}{5} + \binom{2}{3} \binom{3}{5} \binom{1}{4} + \binom{3}{3} \binom{3}{5} \binom{1}{4}}{\binom{1}{5} \binom{1}{4} \binom{3}{3}} = \frac{4+2+3}{20}$$

$\frac{9}{20} \dots B$

16. $1 + 2\log_2 32 - \log_2 16$ is the same as $\log_2 2 + 2\log_2 32 - \log_2 16$ since logs to same base = 1

$$\text{Log } \frac{2^{2n+3}}{16} = \log_2 128 \Rightarrow 2^x = 128 \Rightarrow 2^x = 2^7 \text{ hence } x = 7 \dots B$$

17. 2bags of rice = 7000 and 3 bags of beans = 9000, this means that 1 bag of rice = $7000/2 = 3500$ and 1 bag of beans = $9000/3 = 3000$. Hence 7 bags of rice = $7 \times 3500 = 24500$ and 2bags of beans = $2 \times 3000 = 6000$. Total price = $24500 + 6000 = \text{N}30,500 \dots C$

18. Solve simultaneously to see that the option is E

19. Let initial salary = x , 4yrs of receiving $x = 100,000 \Rightarrow 4x = 100,000 \Rightarrow x = \text{N}25,000 \dots B$

20. This is a simple permutation, ${}^5P_3 = \frac{5 \times 4 \times 3 \times 2!}{2!} = 5 \times 4 \times 3 = 60 \text{ways} \dots A$

$$21. \frac{d(dx)}{aaxx} = 4x^3 + 3x^2 + 2x - 1 \text{ integrating: } 4x^{3+1} + \frac{3x^{2+1}}{3+1} + \frac{2x^{1+1}}{2+1} - \frac{x^0}{1+1} + c$$

$$\Rightarrow x^4 + x^3 + 2x^2 - x + 150 \dots E$$

$$22. {}^4P_2 \times 2! = 12 \times 2 \times 1 = 24 \dots A$$

$$23. \text{Agriculture} = \frac{108}{360} \times 36000000 = 10800000$$

$$\text{Social science} = \frac{54}{360} \times 36000000 = 5400000$$

$$\text{Total} = 16,200,000 \dots C$$

$$24. \text{Pr}(\text{btw } 70 \text{ and } 84) = \frac{23}{100} + \frac{25}{100} + \frac{13}{100} = 0.23 + 0.25 + 0.13 = 0.61 \dots A$$

$$25. \text{Arranging in ascending order: } 24, 32, 32, 35, 44, 46, 48, \text{ median} = 35 \dots A$$

$$26. \text{Mean} = \frac{\sum dx}{\sum dd} = \frac{(1 \times 1) + (2 \times 3) + (3 \times 5) + (4 \times 12) + (5 \times 15)}{36} = \frac{145}{36} = 4.0 \dots D$$

$$27. \text{Age of } 20 \text{ and below} = 60 + 30 + 30 = 130 \dots A$$

$$28. \text{Total number} = 60 + 40 + 30 + 40 + 20 = 190 \dots B$$

$$29. \text{No that scored } 7 \text{ or less} = 27, \text{ no that scored above } 7 = 3$$

$$\text{Pr}(\text{above } 7) = \frac{6}{33} = \frac{2}{11} \dots D$$

$$30. \text{Total balls} = 9, \text{ Pr}(\text{red balls}) = \frac{5}{9}; \text{ Pr}(\text{white balls}) = \frac{4}{9}$$

$$\text{Pr}(\text{2 balls of different colours}) = \frac{5 \times 4}{9 \times 8} + \frac{4 \times 5}{9 \times 8} = \frac{20}{72} + \frac{20}{72} = \frac{40}{72} = \frac{5}{9} \dots C$$

$$31. \text{Mean} = \frac{0 \times 25 + 1 \times 18 + 2 \times 8 + 3 \times 7 + 4 \times 1 + 5 \times 1}{60} = \frac{64}{60} = 1.06 \dots A$$

$$32. \text{Mode} = \text{highest occurring frequency} = 0 \dots B$$

$$33. 2(3^{2x-1}) = 162 \dots \text{divide by } 2$$

$$3^{2x-1} = 81 \Rightarrow 3^{2x-1} = 3^4 \dots \text{equate powers}$$

$$2x - 1 = 4 \Rightarrow 2x = 5 \Rightarrow x = 5/2 \dots C$$

$$34. C$$

$$35. (a-3b)^2 - (a+3b)^2 \dots \text{express out}$$

$$a^2 - 3ab - 3ab + 9b^2 - (a^2 + 3ab + 3ab + 9b^2)$$

$$= a^2 - 6ab + 9b^2 - a^2 - 6ab - 9b^2 = -12ab \dots D$$

$$36. 6 - x - x^2 = 0 \dots \text{rearrange}$$

$$x^2 + x - 6 = 0 \Rightarrow (x+3)(x-2) \text{ hence } x = -3, 2$$

$$\therefore P+q = -3+2 = -1 \dots C$$

$$37. \tan 30^\circ = \frac{h}{40} \Rightarrow h = 40 \tan 30 = \frac{40\sqrt{3}}{3} \text{ m} \dots D$$

38. Size of exterior angle = $\frac{360}{aa} = \frac{360}{8} = 45^0 \dots D$

39. Corresponding and opposite anglesC

40. Solving independently; $\log_2 8 \Rightarrow 2^x = 8 \Rightarrow 2^x = 2^3 \Rightarrow x = 3$

$\log_3 1/9 \Rightarrow 3^x = 1/9 \Rightarrow 3^x = 3^{-2} \Rightarrow x = -2$

Hence $3 - (-2) = 5 \dots D$

41. $\frac{16 \frac{1}{2}}{81} \div \frac{9 \frac{1}{2}}{16} = \frac{2}{3} \times \frac{16 \frac{1}{2}}{9} \Rightarrow \frac{2 \times 3 \times 1}{3 \times 4 \times 2} \dots B$

42. $\log_3 18 + \log_3 3 - \log_3 x = 3$

$\log_3 \frac{18 \times 3}{x} = 3 \Rightarrow \frac{18 \times 3}{x} = 3^3 \Rightarrow \frac{54}{x} = 27 \Rightarrow x = \frac{54}{27} = 2 \dots D$

43. I $\frac{5000 \times 5 \times 6}{100} = 1500$

Amount = P + I = 5000 + 1500 = N6,500A

44. Given $3^{2p} = 12(3^p) - 27$ let $x = 3^p$

$\Rightarrow x^2 = 12x - 27 \Rightarrow x^2 - 12x + 27 = 0 \dots$ solving quadratically, we get $x = 9, 3$, But $x = 3^p \Rightarrow 9 = 3^p \dots$ equate powers : $3^2 = 3^p \Rightarrow p = 2$, Also, at $x = 3: 3^1 = 3^p \Rightarrow p = 1 \Rightarrow P$ is given in hundreds, hence $P(1,2) = (100, 200) \dots C$

45. $5^{x+1} + 5^x = 150$

$x+1(\log 5) + x \log 5 = \log 150 \Rightarrow x \log 5 + \log 5 + x \log 5 = \log 150 \Rightarrow 2x \log 5 + \log 5 = \log 150 \Rightarrow 1.398x + 0.699 = 2.176 \Rightarrow 1.398x = 1.477 \Rightarrow$ Hence $x = 1 \quad A$

46. Decrease = $300 - 270 = 30 \Rightarrow$

% reduction = $\frac{30}{300} \times 100 = 10\% \dots A$

47. N2,500 delivered 10,000 cartons $\therefore Nx$ will deliver 100 cartons $\Rightarrow x = \frac{2500 \times 100}{10,000} = N25 \dots E$

48. 4 bottles costs N600 for small packs and 24 bottles costs N3,360 for large pack. To buy 4 bottles of small packs up to 24 bottles will require 6 purchases $\therefore 6 \times 600 = 3600$

Amount saved = $3600 - 3360 = N240 \dots B$

49. Total ratio = $3+4+5 = 12$

Chukwudi's ratio = 5, Chukwudi's share = $\frac{5}{12} \times 9600 = N4000 \dots C$

50. Marginal interest rate ie = $(1+i)^m - 1$

Where i = annual interest rate = 0.06, m = number of compounding

$$\text{Hence } ie = 20,000 \left(1 + \frac{0.06}{2} \right)^2 - 20,000 = 0.0609$$

$$ie = 20,000 \times 0.0609 = 1218$$

$$P = 20,000 + 1218 = \text{N}21,218 \dots B$$

$$51. \text{ Mean} = \frac{1.2+1.0+0.9+1.4+0.8+0.8+1.2+1.1}{8} = 1.05 \dots A$$

$$52. \text{ Cost of article} = \text{N}400 \Rightarrow 10\% \text{ of } 400 = \frac{10}{100} \times 400 = 40$$

$$40\% \text{ of } 400 = \frac{40}{100} \times 400 = 160$$

$$\text{Altogether, they had } 160+40 = \text{N}200 \dots B$$

53. B

$$54. (3y+10) + (2y+30) + (y+20) + 4y = 360$$

$$3y+2y+y+4y+10+30+20 = 360$$

$$10y = 300 \Rightarrow y = 30 \dots B$$

$$55. \begin{matrix} -1 & -1 & -1 \\ 3 & 1 & -1 \\ 1 & 2 & 1 \end{matrix}$$

$$= -1[(1 \times 1) - (2 \times -1)] + (-1)[(3 \times 1) - (1 \times -1)] - (-1)[(3 \times 2) - (1 \times 1)] \Rightarrow -1(1+2) - 1(3+1) + 1(6-1) = -3 - 4 + 5$$

$$= -7 + 5 = -2 \dots D$$

$$56. \text{ Total expenses (cost)} = 34000 + 2000 = 36000$$

$$\text{Selling profit} = \frac{15}{100} \times 36000 = 5400$$

$$SP = 36000 + 5400 = \text{N}41,400 \dots C$$

$$\text{Marked price} = \text{N}500$$

$$10\% \text{ discount} = \frac{10}{100} \times 500 = 50$$

$$\text{Selling price} = 500 - 50 = \text{N}450 \dots D$$

Let the principal invested at 5% and 4% be x and y respectively. Also let their interest be m and n.

$$\text{Interest} = \frac{PPT}{100}$$

$$x+y = 280 \dots(i)$$

$$m = \frac{5n}{100} = \frac{xx}{20} \dots(ii) \text{ and } n = \frac{4m}{100} = \frac{dd}{25} \dots(iii)$$

$$m + n = 12.80 \dots(iv)$$

substitute (ii) and (iii) into (iv)

$$25x + 20y = 6400 \dots(v)$$

Solve (i) and (v) simultaneously

$$(i) \times 20: 20x + 20y = 5600 \text{ ..eliminate } y \text{ to get } x = 160 \dots D$$

$$\text{Amount earned per month} = N3,500$$

$$\% \text{ on children's education} = 15\% = \frac{15}{100} \times 3500 = N525$$

$$\text{Amount on food} = 1950$$

$$\text{Total expenses} = 1950 + 525 = 2475$$

$$\text{Amount left} = 3500 - 2475 = N1,025 \dots B$$

$$60. I = \frac{pppp}{100} \Rightarrow pp = 100 \times \frac{100 \times 7.50}{pppp} = 1.5\% \dots A$$

61. Let their profit be x

$$\text{First received } \frac{1}{3} \text{ remaining } (x - \frac{1}{3}x) = \frac{2}{3}x$$

$$\text{Second received } \frac{2}{3} \text{ of the remainder (i.e. } \frac{2}{3} \times \frac{2}{3}x) = \frac{4}{9}x$$

The third received N12000

$$\text{Hence } \frac{1}{3}x + \frac{4}{9}x + 12000 = x$$

$$\Rightarrow \frac{7}{9}x + 12000 = x \Rightarrow x - \frac{7}{9}x = 12000$$

$$\Rightarrow \frac{2}{9}x = 12000 \Rightarrow 2x = 108000$$

Hence x = N54,000 B

$$62. I = \frac{PPPPPTT}{100} = \frac{800 \times 12.5mT}{100}$$

$$\Rightarrow 100T = I \dots(i)$$

But amount = I + P where A = 1 1/2 of P = 1.5 x 800 = 1200

$$\text{Hence } A = I + P \Rightarrow 1200 = I + 800$$

$$I = 400 \dots \text{put in (i)}$$

$$100T = 400 \Rightarrow T = 4 \text{ years } \dots B$$

$$63. \text{ Fraction left as tax free} = \frac{1}{8}$$

$$\text{Fraction paid} = 1 - \frac{1}{8} = \frac{7}{8}$$

$$20\% \text{ of } \frac{7}{8} = \frac{1}{5} \times \frac{7}{8} = \frac{7}{40}$$

Let x represent his income

$$\Rightarrow \frac{7}{40}xx = 490 \Rightarrow 7x = 19600$$

$$x = N2800 \dots C$$

$$64. 20 \text{ oranges for } 1.35 \Rightarrow 1 \text{ orange costs } 14.8k$$

$$\text{Selling price of 20 oranges} = 14.8 \times 20 = 296$$

$$20 \text{ oranges for } 1.1 \Rightarrow 1 \text{ orange costs } 18.18k$$

$$\text{Selling price for 20 oranges} = 18.18 \times 20 = 364$$

$$\text{Difference in selling price} = 364 - 296 = N68$$

$$\% \text{ loss} = \frac{68}{364} \times 100 = 18\% \dots A$$

$$65. I = \frac{PPPPPTT}{100} = \frac{pppr8 \times 4}{100}$$

$$100I = 32P \dots (i)$$

Amount, $A = P+I \Rightarrow 330 = P+I \dots(ii)$

From (i): $I = \frac{32P}{100} \dots$ put in (ii)

$330 = P + \frac{32P}{100} \Rightarrow 100P + 32P = 33000$

$132P = 33000 \Rightarrow P = N250 \dots D$

66. $\frac{P}{100} P = 20,000 = 5000$

$200x = 5000 \Rightarrow x = 25\% \dots C$

67. $q = 92 - 3^s$ given that $q = 65$ to find s

$65 = 92 - 3^s \Rightarrow -27 = -3^s$

$\Rightarrow 3^3 = 3^s \dots$ equate powers; $s = 3 \dots B$

68. using arithmetic progression: $T_n = a+(n-1)d$

$T_6 = a+5d$ where $a = 50000$ and $d = 10000$

$T_6 = 50000 + (5 \times 10000) = N100,000 \dots A$

69. $x+y = 100 \dots(i)$

$x - y = 70 \dots(ii)$

(i) - (ii): $2y = 30 \Rightarrow y = N15$

But $x+y = 100 \Rightarrow x+15 = 100 \Rightarrow x = N85 \dots C$

70. $I = \frac{P}{100} P = \frac{5000P}{100} = 1500$

Amount = $I+P = 5000+1500 = N6500 \dots C$

71. $\frac{P}{100} P = 3x^2 - 1 \Rightarrow F = \frac{3P^2}{3} - \frac{P}{100} + P$ (i.e. integrate)

$F = x^3 - x + c = x^3 - x + 100 \dots C$

72. Use this formula to solve all problems on work: $\frac{M_1 D_1 H_1}{PP_1} = \frac{M_2 D_2 H_2}{PP_2}$ where M_1 and M_2 = number

of men in each case, D_1 and D_2 = days taken respectively, H_1 and H_2 = hours taken daily and respectively, W_1 and W_2 = work done in each case. If one or two the variable(s) is not given, assume it to be 1. Hence for the question given, $M_1 = 9$, $M_2 = 6$, $D_1 = 6$, $D_2 = ?$

$$9 \times 8 = 6 \times D_2$$

$$D_2 = \frac{72}{6} = 12 \dots\dots C$$

73. Let the man's salary be x

$$\text{First son} = \frac{1}{3} PP, \text{ remainder} = 1 - \frac{1}{3} PP = \frac{2}{3} PP$$

$$\text{Daughter} = \frac{2}{5} \left(\frac{2}{3} PP \right)^2 = \frac{4}{15} PP$$

$$\text{Feeding} = \frac{1}{4} PP$$

$$\text{Total expenses} = \frac{1}{3} PP + \frac{4}{15} PP + \frac{1}{4} PP = \frac{51}{60} PP$$

Amount left = 51,000 of x

$$\text{Hence } PP - \frac{51}{60} PP = 51,000$$

$$\Rightarrow 60PP - 51PP = 51000 \times 60$$

$$\Rightarrow 9x = 3060000 \Rightarrow x = N340,000 \dots\dots C$$

74. B

75. Initial price of car = N800,000

20% Of 800,000 = 160,000 paid

Amount left = 800000 – 160000

$$= N640,000$$

$$10 \text{ equal installments} = \frac{640000}{10} = \text{N}64,000 \dots \text{A}$$

$$76. a+4d = 11 \dots (i)$$

$$a+7d = 17 \dots (ii) \dots \text{add both}$$

$$-3d = -6 \Rightarrow d = 2 \text{ put in (i)}$$

$$a+4(2) = 11 \Rightarrow a = 11 - 8 = 3$$

hence the AP = 3,5,7... A

77. B

$$78. y = \sin x \cos x$$

Using the product rule: $udv + vdu$

$$\sin x(-\sin x) + \cos x(\cos x)$$

$$dy/dx = \cos^2 x - \sin^2 x \dots \text{B}$$

$$79. \text{The function is not defined when } x^2 - x - 2 = 0$$

Solving quadratically gives $x = -1, 2 \dots \text{A}$

$$80. s = ut + \frac{1}{2} ft^2$$

$$2s = 2ut + ft^2$$

$$ft^2 = 2s - 2ut$$

$$f = \frac{2(PP-PPP)}{PP^2} \dots \text{A}$$

$$81. 12 + 4s - s^2 < 0 \dots \text{re-express}$$

$$s^2 - 4s - 12 > 0$$

$$(s - 6)(s+2) > 0 \dots \text{A}$$

$$82. \text{Given } 2x^2 - x - 3$$

$$\alpha + \beta = \frac{-PP}{PP} = \frac{1}{2}$$

$$\alpha\beta = \frac{PP}{PP} = -\frac{3}{2}$$

hence $\frac{1}{PP} + \frac{1}{PP} = \frac{PP+PP}{PPPP} = \frac{\frac{1}{2} = 1}{\frac{-3}{2}} \cdot \frac{PP^{-2} = -2}{3} = -\frac{1}{6} \dots A$

$$83. \text{ Mean} = \frac{PPPPPP}{PPPP} = \frac{(2PP2)+(3PP7)+(4PP25)+(5PP53)+(6PP12)+(7PP1)}{100}$$

Mean = 4.69A

84. Mode = highest occurring frequency = 5D

$$85. \text{ Pr(at least 5 eggs)} = \frac{53}{100} + \frac{12}{100} + \frac{1}{100} = 0.66 \dots B$$

$$86. \frac{(OPP7)+(1PP3)+(2*PP)+(3PP11)+(4PP10)+(5PP4)}{35+PP} = 2.65$$

$$96+2x = 2.65(35+x)$$

$$96+2x = 92.75 + 2.65x$$

$$3.25 = 0.65x \Rightarrow x = 5 \dots C$$

87. Total number of letters = 11

Repeated letters: M = 2, A = 2, T = 2

$$\text{Possible arrangement} = \frac{11!}{2!2!2!} = 6652800 \dots D$$

88. A

$$89. \frac{(PP-2)180}{PP} = 150$$

$$(n-2)180 = 150n$$

$$180n - 360 = 150n$$

$$30n = 360 \Rightarrow n = 12 \dots A$$

90. $4^2 = r^2 + (0.5r^2)$

$16 = r^2 + 0.25r^2$

$16 = 1.25r^2$

$r^2 = \frac{16}{1.25}$ and $r = \sqrt{\frac{64}{5}} = \frac{8}{\sqrt{5}} = \frac{8\sqrt{5}}{5}$

91. A

92. Ages of 20 and above = $70+40+20 = 130$ A

93. $1. \frac{68}{0.0021} = 800 = px10^n \Rightarrow 8x10^2 = px10^n$

Equate coefficients: $8 \times 10^2 = px10^n$

$P = 8, 10^2 = 10^n$ equate bases

$n = 2$ D

94. B

95. speed = $\frac{PPPPPPPPPPPPPPPP}{PPPPPPPP}$

1st part of the journey = Distance = speed x time = 4x

2nd part = d = 3x

$4x + 2(3x) = 600$

$10x = 600 \Rightarrow x = 60\text{km/hr}$

For the last 3hrs, he drove at $2x = 2x60 = 120\text{km/hr}$...D

96. $\frac{10!}{5!3!2!} = 2500$ A

97. ${}^5P_2 = \frac{5!}{(5-2)!} = \frac{5 \times 4 \times 3!}{3!} = 5 \times 4 = 20$B

98. C

99. Let the % of the commission be x

$$\frac{PP}{100} PPPP 1500000 = 22500$$

Hence $x = 1 \frac{1}{2} \dots A$

$$\mathbf{100.} \% \text{ profit} = \frac{PPPP - PPPP}{PPPP}$$

$$\therefore \frac{20}{100} = \frac{1440 - PPPP}{PPPP}$$

$$20CP = 144000 - 100CP$$

$$CP = 1200 \dots B$$

GENERAL KNOWLEDGE

1. SON means.....

- (a) The male child of a couple
- (b) Son of the great Notredemus
- (c) Standards Organization of Nigeria
- (d) None of the above

2. AIE in Finance and Accounts means:

- (A) Authority to Incur Expenses
- (B) Authority to Incur Expenditure
- (C) Authority to Involve Experts
- (D) Authority to Incure Expenses

3. NHIS means

- a). National Health Insurance Scheme
- b). Nigerian Health Insurance Scheme
- c). National Health Insurance Sector
- d). Nigerian Health Insurance Sector

4. In the Marxist theory, those who live by selling their labour are called

- a. Bourgeoisie
- b. Proletariats
- c. Feudal lords
- d. Slaves

5. Which of the following is NOT an acceptable means of achieving democracy?

- a. Referendum
- b. Recall
- c. Initiative
- d. Plebiscites

6. A bill that applies to the whole population and is intended to promote the general welfare is called

- a. A private bill
- b. A decree
- c. An Appropriation bill
- d. A public deal

7. Under the 1963 republican constitution, the president exercised ?

- (A) judicial power
- (B) executive power
- (C) nominal power
- (D) concurrent powers

8. The principal of federal character was first enunciated in the

- (A) 1989 constitution
- (B) 1963 constitution
- (C) 1999 constitution
- (D) 1979 constitution

9. A major issue that distinguishes pressure groups from political parties is

- (A) membership
- (B) the objective
- (C) the voting pattern
- (D) the ideology

10. Equality before the law is component of

- (A) separation of powers
- (B) checks and balanced
- (C) the rule of law
- (D) constitutional law

11. A human community that is usually cohesive and homogeneous is a state a. State b. Kinship
c. Clan d. Nation

12. Which of the following made the earliest contact with the Nigerian society a. The british b.
The portugese c. The French d. The Germans

13. Between 1960 and 1966, Nigeria was governed under the a. Presidential system of
government b. Westminster system of government c. Confederal system of government d.
Unitary system of government

14. One major factor that differentiates the presidential from the paliamentary system is a.
Seperation of powers b. Judicial independence c. Passage of bills d. Party system

15. A major feature of the policy of deregulation in Nigeria is the a. Entronement of market
forces mechanism b. Increasing dominance of the economy by the state c. Proliferations of
public corporations d. Phenomenal increase in direct foreign investment

16. Bicameral legislature exists a. Where cameramen are allowed to cover the proceeding of the legislature b. To prevent the concentration of power one legislative house c. To provide jobs for more politicians d. To ensure that just laws are passed
17. A major issue that distinguishes pressure groups from political parties is: a. Membership drive b. The objective c. The voting pattern d. The ideology
18. Equality before the law is a component of a. Seperation of powers b. Checks and balances c. The rule of law d. Constitutional law
19. A law passed by the legislature and assented to by the executive is, a. An act b. A presidential proclamation c. A decree d. A legislative order
20. The principle of checks and balances empowers the judiciary to a. Invalidate the actions of the other arms b. Adminster the criminal justice system c. Abrogate the law d. Apply the law
21. In a parliamentary, the term shadow cabinet is often used to refer to the a. Back members in the house b. Deputy prime ministers and assistant c. Rebellious members of the ruling party d. Portfolio designates of the party opposition
22. The fundamenal assumption on wch the idea of the rule of law is based is a. Supremacy of the constitutn b. Nationality of human beings c. Quality of human beings d. Love for social justice
23. Associations whose main interest is to influence public policies witott attemptng to capture state power are: a. Communal groups b. Trade unions c. Political parties d. Pressure groups
24. Multilateralism im Nigeria's forehgn policy entails: a. Africa being the centre piece of Nigerian's foreign policy b. Non aligned posture of international affairs c. Quest a permanent of the UN Security Council d. Membership of international Organizations
25. The set of policies on the basis of which countries interact with one another is called a. Diplomacy b. Foreign policy c. National policy d. International relations
26. After the defeat of Germany in World war 1 her colonies were administered under the league of nations as a. Occupied territories b. Trust territories c. Crown colonies d. Protectorates

27. The Nigeria - Cameroon crisis over Bakasi peninsula occurred owing to the interpretation of the treaty of 1913 and the a. Resolutn of the OAU b. Decision of ECOWAS tribunal c. Maroua Accord d. Decision of the international court of Justice

28. The first Nigeria leader to become chairman of the Organization of African Unity was: a. Tafawa Balewa b. Murtala Mohammed c. Yakubu Gowon d. Aguiyi Ironsi

29. Nigeria's non aligned policy was criticized because of the: a. ECOWAS treaty b. Nuclear Test ban treaty c. Anglo Nigerian Pact d. Non proliferation Treaty

30. Fascism originated from a. Greece b. Italy c. China d. Germany

31. Diarchy refers to the: a. Rule by the government and the opposition parties b. Mixture of parliamentary and presidential systems c. Rule by political and economic elites d. Rule by military and civillians

32. A major flaw in liberal democracy is a.the limitation of the freedom of expression b. Its emphasis on political rights over economical rights c. That it promotes political instability d. Emphasis on collective ownership

33. Under military regimes in Nigeria, the branch of government that were fused are: a. Executive and legislature b. Executive and the judiciary c. Legislature and the Judiciary d. Executive, legislature and the judiciary

34.All the following were frontline fighters for nigeria's independence except

A.Lateef Jakande b.Aminu Kano c. Obafemi Awolowo d.Nnamdi Azikiwe

35.The first northern people political party is

A. PDP b. NPP c. NEP d.NPC

36.The slave trade was abolished in the

A. 15 century b. 17 century c. 18 century d. 19 century

37.The Aba riot of 1929 was a direct consequence of the

A. attempt to make women pay taxes b. imposition of warrant chiefs on Aba people c. introduction of western education d. attempt to introduce taxation

38. In feudal system, the hierarchy of citizens and the king is

A. lord and serf b. nobles and lords c. serf and knight d. serf and nobles

39. The waziri in the Hausa/Fulani performs the function of.

A. president b. monarch c. head of state d. head of government

40. The first colonial consul sent to administer the west coast of Africa by Britain was

A. Donald Cameron b. John major c. John Beecroft d. Tulma Goldie

41. A proclamation by the head of state ending a session of parliament is called

A. an abrogation b. a devolution c. an adjournment d. a prorogation

42. Nigeria joined OPEC in

A. June 1961 b. July 1971 c. May 1964 d. Oct 1962

43. Nigeria's trade with Zambia is known as

A. multi-lateral relation b. bilateral relation c. mass relation d. cordial relation

44. In pre-colonial Nigeria, the northerner EMIR didnt use one of these as his head official

a. The talalkawa b. The waziri c. The galadima d. The madawaki

45. The main motive of imperialist penetration was to

a. Educate b. Trade c. Christianize d. Socialize

46. The national security commision is chaired by the

a. Chief justice of the federation b. President of the federation c. Inspector General of police d.

None

47. Matters of which the federal government alone can legislate are called

a. Exclusive b. Residual c. Concurrent d. Inclusive

48. Regulations made by a local government is called

a. Laws b. Bills c. Bye law d. Issuance

49. A written constitution must contain a

a. Dialogue b. Preamble c. Discourse d. Summary

50. The chief justice of Nigeria during OBASANJO PRESIDENTIAL govt was

a. Idris Legbo Kutigi b. Mohammed L. Uwais c. Alloysius Katsina Alu d. George s. Sowemimo

51. Liberia became independent in

A.1847 b.1858 c.1941 d.1936

52. The last governor election forum election was held in

A. May 19 b. May 21 c. May 24. D. May 25

53. The present Nigeria national anthem arise o compatriot was composed in what year

A.1960 b.1963 c.1978 d. 1951

54. NAFDAC was established in

A.1990 b.1991 c 1993 d.1999

55. Economic diplomacy was introduced during the era of

a. Tafawa Balewa b. Ibrahim Babaginda c. Muhammadu Buhari d. Yakubu Gowon

56. Which of the following country does not belong to West Africa

A. Cape Verde b. Tanzania c. Liberia d. Burkina Faso

57. Which of the following country recognized Biafra republic

A. Ghana b. Comoro island c. Eritrea d. Ivory Coast

58.NCBWA was formed in Ghana in

A.1917 b.1919 c. 1920 d. 1923

59.The one time British prime minister that refused the request of the NCBWA was

A. Margaret Thatcher B. Lord Milner c. john major d. Robert Edison.

60 The United States of America flag has how many star

A.15 b.20 c.50 d.10

ANSWER KEYS

1. C 2. B 3. A 4. B 5. B 6. C 7. B 8. D 9. B 10. B

11)D 12)B 13)B 14)C 15)A 16)A 17)A 18)B 19)A 20)C

21)D 22)A 23)D 24)A 25)C 26)B 27)D 28)B 29)B 30)B

31)D 32)D 33)A 34. A 35. C 36. C 37. A 38. A 39. D 40. A

41. D 42. B 43. B 44. A 45. B 46. C 47. A 48. C 49. B 50. C

51. A 52.D 53.C 54.C 55.B 56.B 57.D 58.B 59.B 60.D

