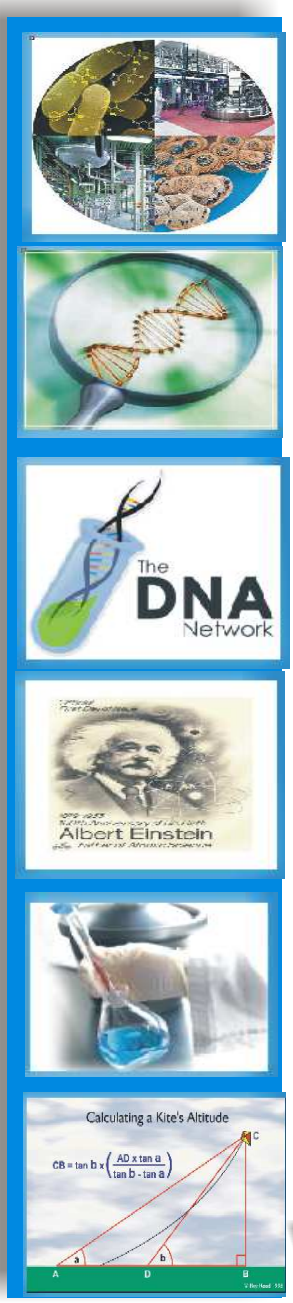


MAH-MCA

MOCK TEST PAPER

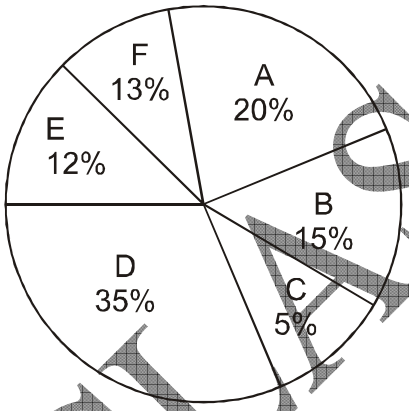
- *Attempt all the questions*
- *This paper consists of 50 objective type questions. (Paper-I 25Q, Paper-II 25Q.)*
- *Each question carries 4 marks. 1 mark will be deducted for each wrong answer.*
- *Pattern of questions : MCQs*
- *Total marks : 200*
- *Duration of test : 2 Hours*

PART-I (1-25)

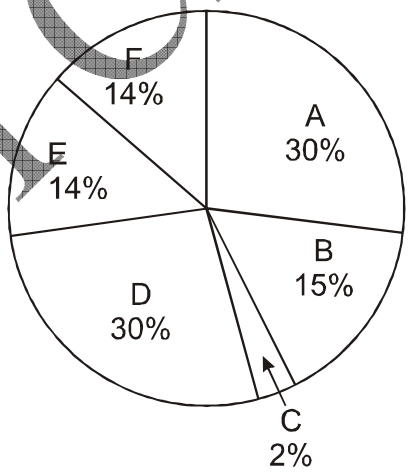
Directions (1-5) Study the following information to answer the given questions.

Percentage of Students in Various Courses (A, B, C, D, E, F) and Percentage of Girls out of these Total students: 1200(800 girls : 400 boys)

Percentage in Various Courses



Percentage of Girls in Courses



1. How many girls are in course C ?

(A) 44

(B) 16

(C) 40

(D) 160

2. For which pair of courses is the number of boys the same?

(A) E and F

(B) A and D

(C) C and F

(D) B and D

3. For course E, the number of girls is how much per cent more than the boys for course E ?

(A) 250

(B) 350

(C) 130

(D) 80

4. For which course is the number of boys the minimum ?

(A) E

(B) F

(C) C

(D) A

5. For course D, what is the respective ratio of boys and girls ?

(A) 3 : 4

(B) 4 : 5

(C) 3 : 5

(D) 5 : 6

6. Veena who is the sister-in-law of Ashok, is the daughter-in-law of Kalyani. Dheeraj is the father of Sudeep who is the only brother of Ashok. How Kalyani is related to Ashok?

(A) Mother-in-law

(B) Aunt

(C) Wife

(D) None of these

7. If M + N means M is the father of N; $M \div N$ means the brother of N; M × N means M is the daughter of N then $P \div Q + R - T \times K$ indicates which relation of P to K?

(A) Daughter-in-law

(B) Sister-in-law

(C) Aunt

(D) None of these

8. There are 6 boxes numbered 1, 2,….6. Each box is to be filled up either with a red or a green ball in such a way that at least 1 box contains a green ball and the boxes containing green balls are consecutively numbered. The total number of ways in which this can be done is

(A) 5

(B) 21

(C) 33

(D) 60

9. In a box there are 2 red, 3 black and 4 white balls. Out of these 3 balls are drawn together. The probability of these being of same color is

(A) 5/84

(B) 1/21

(C) 1/84

(D) None of these

10. The corners of regular tetrahedrons are numbered 1, 2, 3, 4. Three tetrahedrons are tossed. The probability that the sum of upward corners will be 5 is

(A) 5/24

(B) 5/64

(C) 3/32

(D) 3/16

11. A P.I. of the differential equation $(D^2 + 4)\, y = x$ is –

(A) xe^{-2x}

(B) $x \cos 2x$

(C) $x \sin 2x$

(D) $x/4$

12. 20 cards numbered 1 through 20 are placed face down on a table. Cards are selected one at a time and turned over until 10 cards have been chosen. If two of the cards add up to 21, the player wins. How many ways is it possible to win in this game?

(A) 8

(B) 9

(C) 10

(D) 11

13. If page size is 4kB and logical address is 22 bit then the number of entries in the page table is,

(A) 1k

(B) 2k

(C) 3k

(D) 4k

Directions (Q. 14 to 18) : Read the following passage and answer within its context.

TRIP's agreement provides a comprehensive set of global trade rules for the protection of copyright patents, trademarks, industrial designs, trade secrets, semiconductor lay out designs and geographical indications, that apply to all the member- countries irrespective of their levels of development, natural and human endowments and history. Every member country has been asked by the WTO to amend its national patent law to conform to that universal globalised format for legislation relating to pharmaceutical, agrochemical, food, etc. Under Article 65, the developed countries have been asked to change their laws within

another five years, and the less developed countries within an additional five years. The least developed countries have been asked to make those changes by 2005 AD. This attempt at global standardization and uniformity by way of TRIPs agreement is in conflict with the main trust of the Rio Earth Summit of 1992 that set out the conditions for sustainable development. These two reveal two contrasting types of international approaches and norms. While the 1992 Earth Summit and the 1993 Convention on Bio-Diversity (CBD) focused on 'diversity' as being fundamental to sustain life and development, TRIPs and WTO are pushing for 'conformity' to international standardized norms on patents, services, labour, investment and what not irrespective of their history, ecology, level of economic development, etc. But despite their diametrical opposed viewpoints, 170 countries signed CBD upholding the need for diversity, and 50 countries signed the TRIPs agreement in 1994 claiming the urgency of uniformity, with a very large element of common names (130) in both. The Convention on Bio-Diversity (CBD) in its Article, 16.5 specifically asserts the intellectual property right must not be in conflict with conservation and sustainable use of bio-diversity, a provision that has been totally ignored by those who composed the TRIPs agreements. While in case of agriculture the higher yield of patented products induces the farmers to switch from a more varied production pattern, the resulting narrowing of genetic base makes the economy and society more vulnerable to plant disease and epidemics. It is true that the move towards cultivation of a smaller number of higher yielding varieties and the uniform spread of the same variety over a large space predates the present debate on patent, particularly since the introduction of the green revolution technology in the mid-sixties, but there can be no doubt that the latter has brought about a qualitative change in

the scenario and has created possibility of a vast quantitative change too in that direction. So far no attempt has been made to reconcile the two conflicting approaches of CBD and TRIPs. If diversity is so important for sustaining life, how can WTO demand conformity to standardized global formats?

14. The author points out that intellectual properly rights and their administration mechanism is

(A) throttling the interest of global bio-diversity.

(B) working to help sustain global bio-diversity.

(C) being sustained by global bio-diversity.

(D) what the global bio-diversity needs.

15. Which of the following has not been said by the author in the passage?

(A) A high number of countries have signed both CBD and TRIPs two conflicting treaties.

(B) A narrow genetic base, if stuck to for long, is fraught with danger.

(C) Although a nondiscriminatory approach has been followed in the applicability of TRIPs, there has been a confessional attitude in prescribing a time frame for Transition, as per needs of the respective countries.

(D) The author is supportive of international conventions and treats such as TRIPs, CBD, etc.

16. Out of the countries that signed CBD, the percentage of those that signed the TRIPs also, is

(A) 76.5

(B) 74.5

(C) 78.5

(D) 80.2

17. According to the author, a higher-yield seed variety is not always welcome as it also ultimately leads to

(A) diseases among the consumers

(B) diseases among the plants

(C) monopoly of developed countries

(D) diseases among the animals

18. As per the TRIPs agreement not much differentiation is made between a developed country such as the USA and an undeveloped country such as Sudan. This is

(A) definitely true

(B) probably true

(C) probably false

(D) definitely false

SELECT THE SYNONYMS (Q.19-20)

19. CANNY

(A) Obstinate

(B) Handsome

(C) Clever

(D) Stout

20. HESITATED

(A) Stopped

(B) Paused

(C) Slowed

(D) Postponed

SELECT THE ANTONYMS(Q. 21-22)

21. STARTLED

(A) Amused

(B) Relaxed

(C) Endless

(D) Astonished

22. CULPABLE

(A) Defendable

(B) Blameless

(C) Careless

(D) Irresponsible

SELECT THE IDIOMS AND PHRASES (Q. 23-24)

23. RED HERRING

(A) Red carpet treatment

(B) A new automobile

(C) The latest fashion

(D) An argument to divert attention

24. To end in smoke

(A) To make completely understand

(B) To ruin oneself

(C) To excite great applause

(D) None of these

SELECT THE ORDERING OF SEQUENCE (Q.25)

25. S_1 : In those days I was an even better walker than I am today.

S_6 : Even a small additional weight of food bothered me and I looked for a place to eat and rest.

P : But as the day progressed, and with the warmth of the day, the rate of walking fell.

Q : I walked like the young with quick steps covering eight miles in two hours in the morning.

R : On a particular August morning I set out quite early. It was quite pleasant and cool to begin with.

S : I carried with me enough food to meet my simple needs and was there for able to keep away from the towns.

The proper sequence should be :

(A) P Q S R

(B) S Q R P

(C) R S Q P

(D) P S Q R

PART-II (26-50)

26. If we use non-preemptive SJF scheduling, then the average waiting time will be,

(A)10

(B)11

(C) 12

(D) 13

27. Consider a sorted binary insertion tree. What must be done to produce a sorted array of numbers (for printing) from the sorted binary insertion tree ?

(A) Pre-order traversal

(B) Post-order traversal

(C) In-order traversal

(D) Top-down traversal

28. O/P of the following program is

```
main( )
{
        int i =– 3, j = 1 ;
        if (! i + ! j + 1)
        printf (“\n JAM”) ;
else
        printf (“\n sit at home”);
}
```

(A) JAM

(B) Sit at home

(C) Garbage value

(D) None of the above

29. Choose the false option from the following for depicting the Reason of using pointers.

(A) Dynamic Memory Allocation

(B) Implementing graphs & many other data structures

(C) Accessing Arrays or string elements

(D) All above are false.

30. With what you'll replace ??? to make the function long fact (long x)

```
{
  ???
  return x *fact (x – 1;
}
```

(A) if (x = = 0) returns 0;

(B) if (x > = 2) return 2;

(C) if (x = = 0) return 1;

(D) if (x < = 1) return 1;

31. In terms of code generation, how do the two definitions of 'buf' differ?.

char buf[ ] = "Hello world !" ;

char *buf = "Hello world !";

(A) The first definition is not suitable for usage as an argument to a function call , the second definition is.

(B) The first definition is not legal because it doesn't indicate the size of an array to be allocated; the second is legal

(C) They do not differ but are functionally equivalent.

(D) The first definition certainly allows the contents of buf to be safely modified as runtime, the second definition doesn't.

32. MIME stands for:

(A) Multiple internet mailing extension

(B) Multiple internet mail extension

(C) Multipurpose internet mail extension

(D) Multimedia Internet mail extension.

33. What is the output for the following 'C' statements ?

```
main ( )
{ int x = 128 ;
  print f (" % d", x + 128 + ++) ;
}
```

(A) 256

(B) 257

(C) 258

(D) An error message

34. Which of the following 3 - D integer array represents its definition with 50 pages, 20 Rows & 60 columns.

(A) int acc [20] [60] [50] ;

(B) int acc [50] [20] [60] ;

(C) int acc [20] [50] [60] ;

(D) int acc [60] [50] [20] ;

35. What will be the output for the following given 'c' code ?

```
int r [3] [4] = {2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13 } ;
main ( )
{
   int x, y, z = 990;
for (x = 0 ; x < 3 ; + + x)
for (y = 0 ; y < 4 ; + + y)
  if (r [x] [y] < z) z = r [x] [y] ;
print f ("% d", z);
}
```

(A) 1.3

(B) 2

(C) Erroneous code

(D) None of the above.

36. Which of the following is not a type of control structure testing?

(A) Basic path testing

(B) Loop testing

(C) Conditional testing

(D) Equivalence analysis

37. An autocontent wizard helps to

(A) Adapt a single presentation to a variety of audiences

(B) Create presentation using suggested content

(C) Make a global change in presentation

(D) None of the above

38. What is the Protocol Data Unit (PDU) employed directly at the Physical Layer?

(A) bits

(B) frames

(C) packets

(D) segments

39. Which layer of the OSI model provides services directly to user applications?

(A) Application

(B) Presentation

(C) Session

(D) Transport

40. CD-ROM

(A) Rewritable memory

(B) Memory register

(C) Magnetic memory

(D) Is a `semiconductor memory

41. What type of printer is the Daisy wheel printer?

(A) Manual printer

(B) Impact printer

(C) Laser printer

(D) Matrix printer

42. An integrated circuit is

(A) Fabricated on a tiny silicon chip

(B) An integrating device

(C) Much costlier than a single transistor

(D) A complicated circuit

43. The class of computers represented by IBM system/38 is?

(A) Super computer

(B) Medium scale computer

(C) Large scale computer

(D) Small scale computer

44. Which was the first firm to mass-market a microcomputer as a personal computer?

(A) Data General Corporation

(B) Super UNIVAC

(C) Radio Shack

(D) IBM

45. A digital computer did not score over an analog computer in terms of -

(A) Cost

(B) Accuracy

(C) Reliability

(D) Speed

46. In which year was the machine designed by Charles Babbage in 1830, called the analytical engine, which he showed at the parts exhibition exhibited?

(A) 1945

(B) 1860

(C) 1855

(D) 1970

47. Which of the following is a disadvantage of the laser printer?

(A) The output is of a lower quality

(B) It is very slow

(C) It is quieter than an impact printer

(D) None of the above

48. What are the lines that link together different components on the motherboard of a PC unit by sets of parallel electrical conducting lines called?

(A) Consecutives

(B) Buses

(C) Connectors

(D) Conductors

49. Modern computers are very reliable but they are not

(A) Cheap

(B) Powerful

(C) Infallible

(D) Fast

50. Latency time is

(A) Time to spin the needed data under head

(B) Time to spin the needed data under track

(C) Time to spin data under sector

(D) Data Density

ANSWER KEY

[redacted]

HINTS AND SOLUTIONS

1.(B) Number of girls in course

$$C = \frac{2}{100} \times 800 = 16$$

2.(C) Number of boys in course E

$$= \frac{1200 \times 12}{100} - \frac{14 \times 800}{100} = 32$$

Number of boys in course F

$$= \frac{1200 \times 13}{100} - \frac{14 \times 800}{100} = 44$$

Number of boys in course A

$$= \frac{1200 \times 200}{100} - \frac{30 \times 800}{10} = 0$$

Number of boys in course D

$$= \frac{1200 \times 35}{100} - \frac{30 \times 800}{100} = 180$$

Number of boys in course C

$$= \frac{1200 \times 5}{100} - \frac{2 \times 800}{100} = 44$$

∴ Hence, the number of boys is same in C and F.

3.(A) Number of boys in course E = 32.

Number of girls in course E

$$= \frac{14 \times 800}{100} = 112$$

∴ Required percentage

$$= \frac{(112 - 32) \times 100}{32} = 250$$

4.(D) Number of boys is minimum in course A.

5.(A) Number of girls in course D

$$= \frac{30}{100} \times 800 = 240$$

$\therefore$ Required ratio = 180 : 240 = 3 : 4

6.(D) Ashok is the only brother of Sudeep and Veena is the sister-in-law of Ashok. Hence Veena is the wife of Sudeep. Kalyani is the mother-in-law of Veena. Kalyani is the mother of Ashok.

7.(D) $P \div Q \rightarrow P$ is the mother of Q

$Q + R \rightarrow Q$ is the father of R

R – T $\rightarrow$ R is the brother of T

$\rightarrow$ Q is the father of T

T × K $\rightarrow$ T is the daughter of K

$\rightarrow$ Q is the husband of K.

$\therefore$ P is the mother-in-law of K.

8.(B) If only one of the boxes has a green ball, it can be any of the 6 boxes. So, this can be achieved in 6 ways.

If two of the boxes have green balls then there are 5 consecutive sets of 2 boxes. 12, 23, 34, 45, 56.

Similarly, if 3 of the boxes have green balls, there will be 4 options.

If 4 boxes have green balls, there will be 3 options.

If 5 boxes have green balls, then there will be 2 options.

If all 6 boxes have green balls, then there will be just 1 option.

Total number of options = 6 + 5 + 4 + 3 + 2 + 1 = 21.

9.(A) While doing these sums, first see carefully how balls are drawn. In this case the balls are drawn together.

Here there are two possibilities only. Either the balls are black or white; because there are only 2 red balls.

P(all balls black) = C(3,3) / C(9,3)

= 1 / [9.8.7 / 3.2.1]

= 1 / 84

P(all balls white) = C(4,3) / C(9,3)

= 4 / 84

Required probability = 1/84 + 4/84

= 5 / 84

Hence option (A) is the correct answer.

10.(C) Required combinations are (2, 2, 1), (1, 2, 2), (2, 1, 2), (1, 3, 1), (3, 1, 1) and (1, 1, 3)]

Required probability $= \frac{6}{4^3} = \frac{6}{64} = \frac{3}{32}$.

11.(D) $P.I. = \frac{1}{D^2+4}.x = \frac{1}{4}.\left(1+\frac{D^2}{4}\right)^{-1}.x = \frac{1}{4}\left(1-\frac{D^2}{4}+...\right)x = \frac{x}{4}$

12.(C) (1, 20), (2, 19), (3, 18), (4, 17), (5, 16), (6, 15), (7, 14), (8, 13), (9, 12), (10, 11)

There are 10 ways to win the game.

13.(A) 4kB = 2^{12} byte ; Size of page table : 22-12=10; 2^{10} = 1024 byte

14.(A) The author points out that intellectual properly rights and their administration mechanism is throttling the interest of global bio-diversity.Intellectual property (IP) refers to creations of the mind, such as inventions; literary and artistic works; designs; and symbols, names and images used in commerce.

15.(D) The author is supportive of international conventions and treats such as TRIPs, CBD, etc.' This is not said by author in the passage.

16.(A) Out of the countries that signed CBD, the percentage of those that signed the TRIPs also, is 76.5.

17.(B) According to the author, a higher-yield seed variety is not always welcome as it also ultimately leads to disease among the plants.

18.(A) As per the TRIPs agreement not much differentiation is made between a developed country such as the USA and an undeveloped country such as Sudan. This is definitely true **.**

19.(C) Canny means having or showing shrewdness and good judgement, especially in money or business matters, whose synonyms is clever which means quick to understand, learn, and devise or apply ideas, intelligent.

20.(B) Hesitated means pause in indecision before saying or doing something whose synonym is paused which means interrupt action or speech briefly.

21.(B) Startled means cause to feel sudden shock or alarm, whose antonym is relaxed which means free from tension and anxiety.

22.(B) Culpable means deserving blame, whose antonym is blameless which means innocent of wrongdoing.

23.(D) RED HERRING means a dried smoked herring, which is turned red by the smoke.An argument to divert attention best described the meaning of RED HERRING.

24.(D) If something ends in smoke, it produces no concrete or positive result. This expression refers to the boasting by a person, of having put in a lot of efforts by him, for a particular cause or to attain a result which is very difficult to be done by any person.

25.(C) The proper sequence is

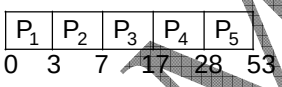
R : On a particular August morning I set out quite early. It was quite pleasant and cool to begin with.

S : I carried with me enough food to meet my simple needs and was there for able to keep away from the towns.

Q : I walked like the young with quick steps covering eight miles in two hours in the morning.

P : But as the day progressed, and with the warmth of the day, the rate of walking fell.

26.(B) Average waiting time = (0 + 3 + 7 + 17 + 28)/ 5 = 11



27.(C) In - order traversal must be alone to produce a sorted array of numbers from sorted Binary Insertion Tree.

28.(B) If statement will not be satisfied, hence moved to else part & print as per option (B).

29.(C) Pointers are not at all used for accessing arrays or string elements.

Rather, arrays & strings can be implemented using pointers.

30.(D) Most probable statement will be if (x < = 1) return 1;

In respond to factorial implementation through revision .

31.(C) They don't differ but are functionally equivalent.

32.(C) MIME stands for Multipurpose internet mail extension. Supported protocol in sending multimedia containing mails on internet.

33.(D) A constant value can't be incremented directly using Increment operator either as (+ + 128) or (128 + +) $\rightarrow$ (I II equal)

34.(B) Total 50 elemented sections, each containing 20 Rows & 60 columns. (50 × 20 × 60 = 60,000 elements)

35.(B) The above given program code will print the smallest value of an r[ ] [ ] array i.e. (B). As it will check, if (2 < 990), its tree so, '2' value will be assigned to 'z' variable. nextly, check if (3 < 2) i.e. false so come out of the for loop and print z value i.e. 2.

36.(D) Equivalence analysis is not a type of control structure testing .Control structure testing is a group of white-box testing methods.

37.(B) An autocontent wizard is an option which is used to create presentation using suggested content.

38.(A) The Physical layer organizes data into a bit stream for transmission over the physical network media.

39.(A) The Application layer provides an interface so that applications may communicate with the network.

40.(D) A CD-ROM is a pre-pressed compact disc which contains data. The name is an acronym which stands for "Compact Disc Read-Only Memory". Computers can read CD-ROMs, but cannot write on them. It is a type of semiconductor memory. Other types of semiconductor memory are RAM, ROM, Flash memory.

41.(B) Impact printers create an image by using some mechanism to physically press an inked ribbon against the page, causing the ink to be deposited on the page in the shape desired. These printers are typically loud, but remain in use today because of their unique ability to function with multipart forms. Daisy wheel printing is an impact printing technology invented in 1969 by David S. Lee at Diablo Data Systems.

42.(A) An integrated circuit or monolithic integrated circuit (also referred to as an IC, a chip, or a microchip) is a set of electronic circuits on one small plate ("chip") of semiconductor material, normally silicon. This can be made much smaller than a discrete circuit made from independent components.

43.(D) The System/38 was a midrange computer server platform manufactured and sold by the IBM Corporation. The system offered a number of innovative features. This class of computers represented small scale computers.

44.(C) RadioShack Corporation (formerly Tandy Corporation) is an American franchise of electronics retail stores in the United States, as well as parts of Europe, South America and Africa. In 1977, Radio Shack introduced the TRS-80, one of the first mass-produced personal computers that became a big hit.

45.(B) Analog and digital signals are used to transmit information, usually through electric signals. In both these technologies, the information, such as any audio or video, is transformed into

electric signals. Analog technology records waveforms as they are whereas digital signals sample analog waveforms into a limited set of numbers and records them. A digital computer scored over an analog computer in terms of cost, reliability & speed.

46.(C) Analytical Engine, generally considered the first computer, was designed and partly built by the English inventor Charles Babbage in the 19th century. It was exhibited in the year 1855.

47.(D) The main benefit behind laser printers is probably its efficiency and speed at printing. They furnish highest potential production. They are highly optimized and barely emits any sound. The main drawback is that they are a lot more costly. They utilize complicated technology. Double printing cannot be simultaneously performed in laser printers.

48.(B) In computer architecture, a bus is a communication system that transfers data between components inside a computer, or between computers. This expression covers all related hardware components (wire, optical fiber, etc.) and software, including communication protocol.

49.(C) As modern computers are small computers, became more powerful, they could be linked together to form networks, which eventually led to the development of the Internet. Modern computers are very reliable, cheap and fast but they are not infallible.

50.(A) Hard drive latency is the time that it takes a hard drive to load information from a sector.. Maximum rotational latency is the time it takes to do a full rotation excluding any spin-up time (as the relevant part of the disk may have just passed the head when the request arrived).