

MOCK CAT**SECTION – I****Directions for questions 1 – 5: Answer these questions on the basis of the following information.**

In an exhibition, there is a train (toy) with 24 bogies, numbered 1 to 24. Each bogie has 2 seats only. It moves all over the exhibition in circular path and reaches to the same point. It stops at 5 places before coming to the starting point, that is, it stops at the same place the 6th time. The information about the stops is as follows:

- The stops were considered as stop 1, stop 2... and again stop 6 (the starting point).
- At nth stop, only the doors of bogies whose numbers are multiples of $(6 - n)$ will be opened. That is, at stop 1, only the doors at $[(6 - 1) = 5]$ 5 multiples will be opened and at stop 6, all the doors will be opened.
- Assume that all the bogies are full of passengers and the two persons in the same bogie should not get down together at the same stop, but if the door of any bogie is opened at any stop, and if there is a person in that bogie, he has to get down at that stop.

- How many persons get down at the starting point after 1 revolution?
 (1) 6 (2) 7 (3) 8 (4) 9 (5) 10
- What is the maximum number of persons that get down at any stop?
 (1) 9 (2) 12 (3) 14 (4) 16 (5) None of these
- Suppose, if it is written 12 on two bogies, i.e., on the 13th bogie also, it was written 12 by mistake and 13 was written on 14, 14 on 15 23 on 24th, and the doors will be opened according to the number, which was written on the bogies; then which bogie from the beginning of race the maximum change in its stop value. (Stop value of a bogie is sum of the number of the stop, where the first and second person of that bogie gets down).
 (1) 13th (2) 16th (3) 20th (4) 24th (5) cannot be determined
- Suppose that there are two friends among the passengers. They want to sit in the same bogie, and they want to get down at the adjacent stops. In how many ways can they select their bogies out of 24 bogies?
 (1) 12 (2) 14 (3) 16 (4) 8 (5) 20
- Suppose that some extra bogies are added and numbered, 25, 26 How many extra bogies can be added such that the number of persons getting down at last stop doesn't change? (Assume that even if some extra bogies are added, the occupancy is 100 %.)
 (1) 1 (2) 4 (3) 9 (4) 16 (5) 24

Directions for questions 6 – 10:

In an examination, there are 3 sections, each containing 5 questions. In the 1st section, each correct answer carries 10 marks and wrong answer fetches 3 negative marks. Second and third sections carry 8 and 6 marks per correct answer respectively, and the negative marking per wrong answer is 2 and 1 for 2nd and 3rd sections respectively. Anyway, if a question is not attempted, it results '0' marks.

Answer the following questions.

6. Which of the following score is not possible for any student to obtain?
(1) 108 (2) 112 (3) 113 (4) 114 (5) 115
7. If any student gets 120 out of 120, the score will not be considered, what are the maximum possible marks that a student can obtain?
(1) 118 (2) 114 (3) 110 (4) 108 (5) 119
8. A student answered 11 questions correctly. Out of these, at least 3 were from 1st section and almost 4 were from the second section and he did not correctly answer the same number of questions in any two sections. How many different scores can he obtain?
(1) 12 (2) 14 (3) 16 (4) 18 (5) 20
9. If a funny student wants to secure the same score in the 1st and 2nd section and he wants to answer at least one question incorrectly, what is the maximum possible score that he can obtain?
(1) 113 (2) 110 (3) 103 (4) 114 (5) 11
10. A student obtained 98 marks in total. How many questions did he answer correctly?
(1) 10 (2) 11 (3) 12 (4) 14 (5) cannot be determined

Directions for questions 11 – 13: Answer these questions on the basis of the following information.

In CAT 2006, there were 3 sections; Quant, DI and Verbal. Each section carried for 100 marks, that is, the total marks were 300. There were total 1.7 lac students who appeared in the test, out of those, who obtained at least 22 in quant, 28 in DI and 36 in verbal received IIM-A calls. Many students of Achiever CAT coaching centre received IIM-A calls, out of those, 6 were my best friends Rajan, Sravan, Subham, Gopi, Krishna and Padma; secured 122, 116, 118, 134, 110 and 108 marks respectively.

11. How many of my friends definitely obtained at least 40 marks in at least 1 section?
(1) 1 (2) 2 (3) 3 (4) 4 (5) 5
12. What was the maximum possible score in quant section of any of my friends?
(1) 64 (2) 66 (3) 70 (4) 72 (5) cannot be determined

13. If only Gopi and Krishna secured more than 40 marks in quant, what was the maximum possible individual section score of any of my friends in any section?
 (1) 70 (2) 72 (3) 74 (4) 80 (5) cannot be determined

Directions for questions 14 – 18: Answer these questions on the basis of the following data.

The weather report of 10 cities is given below.

City	Forecast	Humidity (%)	Climate type	Maximum Temperature	Minimum Temperature	Time of sunrise	Time of sunset
Hyderabad	Cloudy	64	Cool	38	24	5:12	18:15
Bangalore	Rainy	76	Cool	37	21	5:14	18:20
Chennai	Sunny	35	Very hot	40	26	5:08	17:50
Delhi	Rainy	80	Cool	36	22	5:42	19:05
Mumbai	Rainy	72	Cool	38	25	5:45	19:20
Kolkata	Sunny	58	Hot	40	28	5:06	18:00
Chandigarh	Cloudy	72	Cool	36	20	5:50	19:40
Ludhiana	Cloudy	83	Cool	36	19	5:52	19:50
Vizag	Sunny	49	Very hot	42	28	5:15	18:12
Pune	Rainy	64	Cool	40	24	5:35	19:10

Given that

Duration of the day = time of sunset – time of sunrise

Average temperature = $\frac{1}{2}$ (minimum temperature + maximum temperature)

14. What is the maximum possible difference between durations of day of any two cities?
 (1) 1 hr 18 min (2) 1 hr 20 min (3) 1 hr 8 min
 (4) 1 hr 16 min (5) 1 hr 30 min
15. What is the minimum possible difference between the average temperature and the minimum temperature of a cool and rainy city?
 (1) 6° C (2) 6.5° C (3) 7.5° C (4) 8° C (5) 10°
16. How many cities, which are either rainy or cloudy, have duration of day more than 13 hrs and temperature difference more than 13°C?
 (1) 4 (2) 6 (3) 8 (4) 9 50 10
17. If a person likes to spend his next day in a city, where the previous day's climate was cool and humidity more than 75 and the average temperature was less than 30°C and the duration of day was more than 13 hr 25 min, which city will he have to choose to spend his next day?
 (1) Bangalore (2) Delhi (3) Chandigarh (4) Ludhiana (5) Hyderabad

18. If we give 10 points to a cloudy city, 15 to a rainy and 25 to a sunny city to get forecast value, and 15 to cool, 25 to hot and 35 to very hot city to get climate value,
Humidity value = humidity (%) and temperature value = average temperature. and City value = sum of all these
Which city has the greatest city value?
(1) Hyderabad (2) Bangalore (3) Delhi (4) Vizag (5) None of these

Directions for questions 19 – 23:

For a certain CAT, 100 days batch in a CAT coaching centre TCY has been started. The lecture on math syllabus has been scheduled as shown below. If topic 'A' is based on topic 'B', 'B' should be finished before 'A'.

Topic	Number of classes required	Based on
Number Theory	4	–
Ratio and Proportion	3	Percentage
Profit and Loss	2	Ratio and Proportion
Progressions	1	Algebra
Percentage	2	Average
Inequalities	1	Algebra
Algebra	3	Number theory
Time and Distance	3	Ratio & Proportion
Time and Work	2	Percentage
Geometry	5	Algebra
Probability	4	Permutations and Combinations
Volumes	2	Areas
Permutations and combinations	3	Algebra
Average	1	Number theory
Areas	2	Geometry

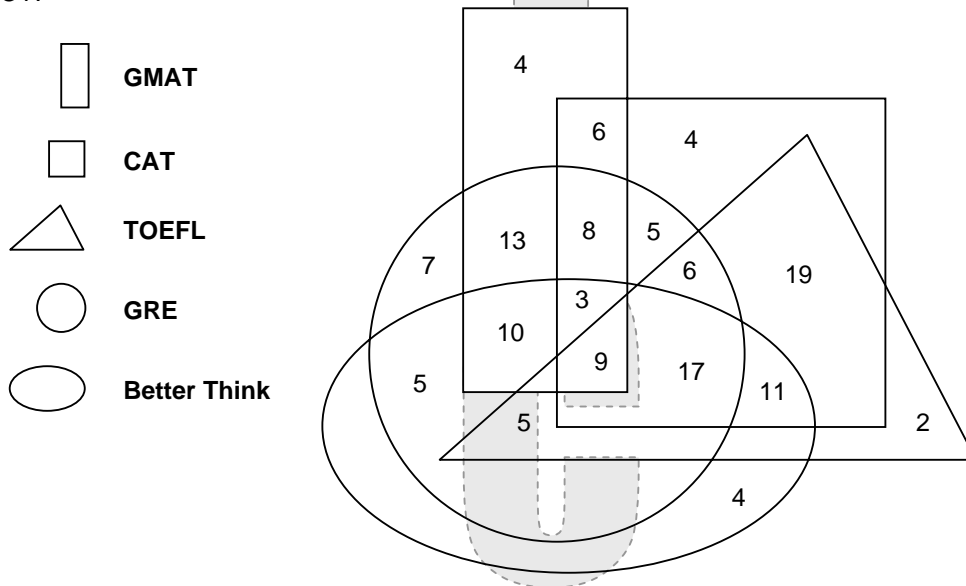
Every week, there will be 5 math classes, 1 daily from Monday to Friday. Assume there is no holiday and all topics are covered according to the above schedule. Answer the following questions.

19. How many topics have to be definitely covered before volumes?
(1) 3 (2) 4 (3) 5 (4) 6 (5) 7
20. After 22 math classes, what is the minimum possible number of topics pending?
(1) 4 (2) 5 (3) 6 (4) 7 (5) 10
21. What is the minimum number of math classes required to cover any 9 topics?
(1) 17 (2) 18 (3) 19 (4) 20 (5) 22

22. Which of the following topics should not be the last topic to teach?
 (1) Probability (2) Areas (3) Profit and Loss
 (4) Time and Distance (5) Time and Work
23. What is the minimum possible number of topics that can be covered in the first 19 math classes?
 (1) 5 (2) 6 (3) 7 (4) 8 (5) 9

Directions for questions 24 – 27: Answer these questions on the basis of the following information.

The following Venn diagram represents the number of teacher teaching different batches in a coaching centre TCY.



24. Of the teachers who do not teach CAT, how many teachers teach either GRE or GMAT?
 (1) 46 (2) 54 (3) 60 (4) 62 (5) None of these
25. How many teachers teach at least 2 subjects?
 (1) 117 (2) 123 (3) 133 (4) 140 (5) None of these
26. Of the teachers who don't teach GRE batch, how many teachers do not teach GMAT and TOEFL batches, but teach CAT batch?
 (1) 4 (2) 6 (3) 19 (4) 29 (5) None of these
27. If all the teachers who teach TOEFL batch also teach GRE batch, the number of teachers teaching GRE batch is
 (1) 120 (2) 130 (3) 100 (4) 102 (5) cannot be determined

Directions for questions 28 – 30: Answer these questions on the basis of the following tables.

The following table represents the number of students from different cities appearing for different competitive exams after their graduation. (Figures are in 000's)

City Code	City	Students
HYD	Hyderabad	13.2
B'LORE	Bangalore	6.4
CHE	Chennai	5.7
DEL	Delhi	13.8
MUM	Mumbai	16.4
LUD	Ludhiana	4.5
CHD	Chandigarh	5.5

Percentage share of different coaching centres in the cities

	HYD	B'LORE	CHE	DEL	MUM	LUD	CHD
TCY	20	20	15	20	25	25	20
TIME	35	25	20	20	15	20	25
CL	15	30	25	25	25	20	30
IMS	10	10	15	15	15	20	10
CF	20	15	25	20	20	15	15

Percentage share of all the students in different exams

	HYD	B'LORE	CHE	DEL	MUM	LUD	CHD
GRE	45	30	35	40	25	30	40
CAT	20	25	20	15	30	20	25
GATE	15	10	10	15	20	20	15
GMAT	10	20	15	20	10	15	10
CIVILS	10	15	20	10	15	15	10

28. Considering all exams in all cities together, the students in which coaching centre constitute the least percentage share?
 (1) Time (2) CL (3) IMS (4) CF (5) TCY
29. In which of the following cities the difference between GRE students and GMAT students is the highest?
 (1) B'LORE (2) DEL (3) LUD (4) CHD (5) HYD
30. In how many of the given cities is it possible that all students of GATE and CIVILS are from one coaching centre alone?
 (1) 2 (2) 3 (3) 4 (4) 5 (5) cannot be determined

SECTION – II

Directions for questions 31 – 35: Each question is a logical sequence of statements with a missing link, the location of which is shown parenthetically. From the five choices available you are required to choose the one which best fits the sequence logically.

31. Recently, I had difficulty with one of my tyres so I went to the tyre store to get it replaced. Much to my chagrin, the service attendant identified a small problem with another tyre, which indicated the front end was out of alignment. He explained that if I did not correct the alignment, I would soon be replacing yet another tyre. Needless to say, realigning the front end of my car cost money, but the investment actually saved me additional costs in the future. The attendant (salesperson) did not cause the problems; he simply identified the problem and offered a solution, (_____) We do not create problems; we identify them and offer solutions through our goods and services.
- (1) which in any case was his duty to do
 - (2) which we ought to do in the first place
 - (3) which is exactly what the professional does
 - (4) and saved me a lot of hassle
 - (5) but isn't that what all of us are bound to do if we are true professionals?
32. Woolf's focus on society has not been generally recognized because of her intense antipathy to propagandists in art. (____). Even when Woolf is fundamentally sympathetic to their causes, she portrays people anxious to reform their society and possessed of a message or program as arrogant or dishonest, unaware of how their political ideas serve their own psychological needs. (Her *Writer's Diary* notes: "the only honest people are the artists." whereas "these social reformers and philanthropists...harbor...discreditable desires under the disguise of loving their kind...") Woolf detested what she called "preaching" in fiction, too.
- (1) Her detestation of the apathetic is palpable.
 - (2) She disregards their objectives, howsoever noble they might have been.
 - (3) She feels that they unnecessarily force their views and judgments down the peoples' gullets.
 - (4) The pictures of reformers in her novels are usually satiric or sharply critical.
 - (5) There are several instances in her writings to prove the point.
33. Feynman on religion is interesting mainly because he clearly feels the need to tread very carefully for fear of offending too many people. He divides religion up into three parts: the metaphysical (creation myths and so on), the ethical and the inspirational. His analysis is that science undermines the metaphysical part but has no effect at all on the ethical, because, in fact, (____). He laments the fact that the undermining of the metaphysical takes a lot of air out of the sails of the inspirational part, but his view is that the picture of the universe presented by science is pretty inspirational itself.
- (1) science has nothing to do with the ethics of religion
 - (2) scientists have pretty much the same ethical values as everyone else
 - (3) ethics and inspiration are irretrievably intertwined
 - (4) scientific laws do not seek to confront ethical values
 - (5) science does not moralise as ethics do

34. In contrast to the early discoveries of exoplanets, we now find that less than 1 in 5 exoplanets are to be found very close to their stars, a few orbiting with a period of 5 to 50 days (_____). This supports the idea that they are formed at Jupiter-like distances from their host star. Dependent on the details of the early solar system, most giant planets probably spiral inwards towards their star until they reach a point where a lack of frictional forces stops their further migration.
- (1) much closer to their host star than mercury is to our sun.
 - (2) and a few others even more distant than Jupiter is to our sun.
 - (3) while most others are almost at the edge of the host star's planetary system.
 - (4) the majority having spherical orbits at Jupiter-like distances.
 - (5) but most giant planets are orbiting at large distances from their host stars.
35. In times past a liberal education set off a free man from a slave or a gentleman from labourers and artisans. It now distinguishes (_____) or from the trivialities which are no training at all. Such an education involves a combination of knowledge, skills, and standards.
- (1) scholarly learning from the loading of abstract concepts by the hoi polloi
 - (2) maturation of minds from conceptual enlightenment
 - (3) whatever nourishes the mind and spirit from the training which is merely practical or professional
 - (4) practical skills from compartmentalized learning with narrow focus
 - (5) pursuit of knowledge per se from the dissemination of anachronistic ideas

Directions for questions 36 – 40: Identify the incorrect sentence or sentences.

36. A. As well as causing stress, bad breath can be exacerbated by stress.
 B. One study showed that when teachers used more complex speech, very young children learn to create more complex sentences themselves.
 C. The storm reached its crescendo shortly before three a.m. in the morning.
 D. At the beginning of 1998 the World Bank established a special internal audit committee to examine problems of corruption in its lending policies.
- (1) B, C and D (2) A, B and C (3) A and B (4) C and D (5) None of these
37. A. A spa is a spring whose water has the highest temperature than the water in the surrounding area.
 B. It is not too much to say that had there been no IMF; there would have been no East Asia crisis.
 C. The police reached the place and when they left, 40 persons had been injured and 70 arrested.
 D. If you go on to let your dog chasing cars, he will get run over one day.
- (1) A, C and D (2) B, C and D (3) A, C and B (4) B and C (5) None of these

38. A. The question of when man started cooking his food has not been answered by anthropologists with any definiteness.
 B. There has not been sufficient rain this year.
 C. Dr. Friedman, who is a leader of the laissez faire school, goes farther than most other observers, particularly in accusing the Fund of laying the ground for the crisis.
 D. The Neanderthals appeared in Europe during the three interglacial periods.
 (1) A and B (2) B and C (3) C and D (4) A and D (5) None of these
39. A. Many teenagers will turn off their friends and family to help them decide about college.
 B. The increasing popularity of the motorcycle as a convenient, economical form of transportation has been just short of astounding.
 C. An NGO friend had arranged the visit to a village where his project had begun working.
 D. It is believed that the under privileged people have registered no progress in the last four and a half decades.
 (1) A and D (2) A and C (3) B and D (4) C and D (5) None of these
40. A. The devastating news of my son's death kept coming back to me in different ways, each one as if were hearing it for the first time.
 B. What a surprise one morning when she walked into the grocery store where I worked and convinced my boss to let me off long enough for her to take me to lunch.
 C. The ministers of the local churches called for hour of prayer on the town square.
 D. When the hour ended, as if on magical command, a soft rain began to fall.
 (1) B, C and D (2) A and B (3) B and C (4) C and D (5) None of these

Directions for questions 41 – 45: In each question below a set of four statements is given, followed by five answer options to categorise these statements as facts, inferences, and judgments. Consider the statements and decide which of the choices out of the four given is true.

F: Fact: If it relates to a known matter of direct observation, or an existing reality or something known to be true.

J: Judgment: If it is an opinion or estimate or anticipation of common sense or intention.

I: Inference: If it is a logical conclusion or deduction about something, based on the knowledge of facts

41. 1. The pharma companies in India often conduct controversial clinical trials exploiting the ignorant and illiterate volunteers.
 2. Minister of State for Health Panbaka Lakshmi raised this issue in the Parliament ordering an inquiry against "Shreen Cancer Institute of Tamil Nadu".
 3. Full length debate followed in the Parliament and the Union Cabinet constituted a Central drug authority to check and monitor the illegal clinical trials by the drug makers.
 4. There have been many instances of drugs being tested without consent. It is maintained by the Enquiry Proceedings that Sun Pharma's Letrozole was illegally tried on 400 women.
 (1) IFFJ (2) IFIF (3) IFFF (4) IFIJ (5) JFJF

42. 1. The Director of the Tata Institute of Social Sciences opines that in India the socio-economic profile shows dismal picture, as the majority of volunteers are poor, illiterate, and prone to exploitation by the drug makers.
2. In the last ten years, the pharma industry has grown in size but the regulatory staff of the Central Drugs Standard Control Organisation (CDSCO) remains the same; a team of only 10 professionals to monitor the drug abuse.
3. There is no publicly accessible national data available in the country to check the drug abuse and often medical devices are not notified by the drug makers.
4. Violations under the Drugs Abuse Act are a punishable offence but the drug makers are aware of the loopholes of the Drugs Act and they often go unpunished.
- (1) IFIJ (2) JFJF (3) IJFI (4) IFFJ (5) FFFI
43. 1. In the fourth budget speech of Mr. P Chidambaram, there was almost nothing for industry, except for the lowering of peak rate of customs duty, and a hike in dividends distribution tax.
2. The logic of the Finance Minister must have been that since both industry and stock markets had been on the path of growth, there was no need to concede more sops to them.
3. The Sensex reacted sharply and it plummeted 540 points on the budget day.
4. The Finance Minister stated that the farm sector had grown by a mere 2.3% compared to the desired level of 4% in the 10th plan, and found wisdom in Nehru's comment that "everything else can wait, but not agriculture"
- (1) IJIF (2) JIFF (3) JIIF (4) IIFJ (5) IIFF
44. 1. The Union Budget 2007 has proposed Means-cum-Merit Scholarship Scheme to check the growing drop out rate of children in the schools situated in rural and tribal areas.
2. The pro-poor philosophy was evident in the budget of 2007 as the Finance Minister proposed hike in divided distribution tax, and imposed fringe benefit tax on the salaried people.
3. Inflationary pressure compelled the Finance Minister to reduce the peak rate of custom duty to match the lower Asian levels though the dual excise duty structure on cement worried the Finance Minister.
4. The logic behind the duty cut was explained as the Finance Minister said "I have put these revenues to good use to promote growth, equity and social justice."
- (1) FJII (2) FIIF (3) IFFJ (4) IJFI (5) FFJF
45. 1. Moody's Investors' Service, in its latest analysis of the country's budget 2007, pointed out the profound dilemmas of poverty and lack of inclusion though the economic growth rate is unprecedented.
2. Moody's may not be out of place in believing that in providing higher allocations to education, health and infrastructure, the thrust of the fiscal planners is to achieve "shining India" feeling.
3. The reduction of indirect taxes and excise duties is not an effective anti-dote to the inflationary pressures and rising prices are a serious jolt to the growing economy.

4. The 2007-08 Budget confirms the helplessness of the policy makers who admit that higher interest rates and increasing market volatility may dampen the spirit of the investors.

(1) IJF

(2) FJIF

(3) FJJI

(4) FIIF

(5) FIIF

Directions for questions 46 – 60: Read through the following passages and answer the questions that follow.

PASSAGE – I

No one can deny the fact that the Indian Institute of Technology Madras is one of the most prominent professional colleges in Asia awarding an engineering degree. It is set in a reserve forest and its green lawns and beautiful scenery is captivating. A nature lover like William Wordsworth would have written many paeans if he had visited the charming site. It has one of the best pools in Chennai and is immune to the quota crunch. However, for other Indian Institutes of Technology, the quota conundrum continues to have a nightmarish impact on the quality learning. For the country's seven IITs, including Madras, that have pioneered the country's brand growth and strength, there seems no respite from the already acute battle to maintain standards of excellence in the face of acute faculty shortage. Where leading foreign technical colleges offer a 1 : 6 faculty student ratio, most IITs just manage to maintain a 1 : 12 ratio, while struggling to cope up with attrition syndrome and find quality faculty. The Dean of IIT Madras, Prof V.G. Idichandy, in a recent interview, admitted that it was hard to maintain even a 1: 14 ratio due the paucity of faculty. Interestingly, not many people today opt for teaching, as the compensatory package stands nowhere in comparison not only to that in the western world, but also to what falls into the kitty of those in India who look for openings in the business world. Moreover, the selection procedure as stipulated by the UGC is stringent. Ironically, the sylvan surroundings of most IITs are fast turning into concrete jungles when students want to explore greener pastures abroad. IIT-Kanpur, which has a 1: 14 faculty student ratio, recently mooted a proposal to hire teachers from the European Union. However, this proposal is presently buried in the jungle of files, as no positive response is forthcoming from the government, though relentless efforts are being made by the Deans and the Directors of the IITs to attract young and talented NRIs serving in foreign universities to work in the Indian Institutes of Technology. The faculty members who attend international conferences and seminars are directed to identify innovative young students willing to teach in India. What a paradoxical situation! The young graduates of IITs are going abroad on a heavy pay package and the Directors of IITs are looking for teachers from abroad. IIT-Bombay Director Misra shakes his head in horror as he recounts the woes of his faculty. IIT-Bombay functions with a teacher student ratio of 1: 12, while an ideal as per the HRD ministry stipulation is 1: 9 ratio. The other alarming fact is that many faculty members retire each year, as the retiring age is not being increased in spite of memos submitted to the government.

Several senior IIT faculty members opine that teaching in the present set up is a difficult task. With a monthly salary of Rs. 30,000 and a Rs. 500 annual increment for learned professors, it is hardly a wonder that these portals of education should be gasping for quality teachers. It is pertinent to note that an average IIT graduate gets a much better pay package in the job market than drawn by the IIT Director. No wonder, only a sprinkling of students go through the rigorous route of doctorates, fellowships to join IIT as faculty members. Teacher salaries in EU and US are at least 20 to 25 times those of IIT teachers. The lucrative offers from the corporate

sector are a lead to faculty shortage in the IITs. The central government has stipulated the salary structure and it is extremely tortuous to recruit faculty from abroad. To avert these crises, some institutes have started offering emeritus positions to its retired faculty. The crisis will further escalate with the implementation of the 27% OBC reservation, as there will be an additional rush of students to all the IITs. More teachers are required to cater to the new intake and the liquidity crunch is hampering the ongoing research work in these IITs.

In 1990, Illinois Institute of Technology was crumbling; close to insolvency. The school sent out an SOS to its alumni and in five years \$270 million were contributed to save the school. Harvard and Princeton have also built multi-million dollar endowments for research and survival. Unfortunately the IIT's have no US-style Alumni Relations Department. It is the right time for the alumni to donate to their alma mater. Mr. Sarin donated Rs. 1.5 crore, NRI tycoon Mr. Vindo Gupta sent \$4 million, Infosys mentor Narayana Murthy has donated Rs. 25 crore to IIT Kanpur. These philanthropic acts will go a long way to save the IITs. Otherwise the future is dismal.

46. Which of the following best illustrates the situation that is equivalent to closing of the Indian Institutes of technology?
- (1) The IITs are desperately struggling to maintain standards of excellence in spite of liquidity crunch and under central government interference.
 - (2) The sylvan surroundings of most IITs are turning into concrete jungles, as the students prefer to explore greener pastures abroad to working in the prestigious IITs on a low salary package.
 - (3) Where the engineering colleges of the west offer 1: 6 faculty student ratio, the IITs cannot even maintain a 1: 12 ratio as senior teachers retire every year and new talent is unwilling to join on a low salary.
 - (4) The 27% OBC reservation policy of the government is likely to lead to further exacerbation of the already dismal teacher taught ratio and a likely closure of a few IITs.
 - (5) The efforts of the directors of the IITs to recruit talented teachers from the European Union and the US have given little respite, and have not been eminently successful, though the IITs continue to be the portals of quality education.
47. What can be best inferred from the passage about the working of Indian institutes of Technology?
- (1) The prominent Institutes of Technology are maintaining the standards of excellence though the odds are heavily stacked against them.
 - (2) The Deans and the Directors of IITs are exhorting the members of the faculty to attend international conferences and seminars and be on the lookout for new talent willing to take the plunge into the field of education.
 - (3) The young and talented Non Resident Indians employed in foreign universities are being inspired to return to India to work in the IITs.
 - (4) The Indian Institutes of Technology have started employing superannuated teachers to meet the crisis of growing shortage of teachers.
 - (5) The IITs are bound to find it difficult to maintain the standards of excellence as the faculty student ratio has declined to 1: 14 with the senior teachers retiring every year and new quota regime of OBC likely to increase the intake of students.

48. The author cites the example of alumni of IIT US in order to
- (1) save the IITs from closure and accelerate their pace of research
 - (2) emphasise the need for two way interactive and mutually beneficial exchange between the alumni and the alma mater
 - (3) suggest an alternative to tide over the liquidity crunch faced by the institutes
 - (4) prove that all alumni have a moral responsibility to contribute to the development and survival of their alma mater.
 - (5) highlight the philanthropic achievements of the alumni in USA.
49. What most easily describes the organization of the passage?
- (1) The passage rues the absence of a support mechanism for a cause and discusses why nothing much is expected in view of the presence of certain variables.
 - (2) The author uses a study to put forth his own argument.
 - (3) The passage paints a dismal picture of the future of certain institutes of excellence and uses evidence to prove the point.
 - (4) The passage expresses apprehensions based on clinching evidence showing symptoms of a malady.
 - (5) The author presents various facets of a problem without any conclusion.
50. What does the phrase 'the sylvan surroundings of most IITs are fast turning into concrete jungles' mean in context of the passage?
- (1) The growing pollution in and around IITs.
 - (2) The shortage of students in IITs.
 - (3) The shortage of faculty in IITs.
 - (4) The lack of maintenance of green environment.
 - (5) The students seeking greener pastures abroad.

PASSAGE – II

It can fairly be asserted that the words 'feminist' or 'feminism' are political labels indicating support for the aims of the new women's movement, which came into vogue in the modern age. The feminist criticism has become a political discourse; a critical and theoretical practice committed to the struggle against patriarchy and sexism. The job of a feminist critic is cumbersome, as she has to evaluate different political views within the feminist group of people; a correct feminist criticism must be thus relevant to the study of the social, institutional and personal power relations between the sexes. Kate Millet in her 'Sexual Politics' observes that "the essence of politics is power" and the task of feminist critics is to expose the way in which male domination over females continues. Feminists have politicized existing critical methods, and feminist criticism has grown to become a new branch of literary studies. Feminists call themselves radical critics and strive to become cultural critics. Like socialists, feminists can thus afford to be pluralistic in their choice of literary methods and theories contrary to the established norms of criticism.

It is maintained that all ideas including feminist ones, are polluted by patriarchal ideology. No wonder Mary Wollstonecraft was inspired by the male-dominated ideas of the French Revolution and Simon de Beauvoir was deeply influenced by Sartre's phallogocentric categories when she wrote 'The Second Sex.' No one can refuse J.S. Mill's laudable efforts to analyze the oppression of women simply because he was a male liberal. What matters is, therefore, not so much whether a particular theory was formulated by a man or a woman, but whether its effects can be characterized as sexist or feminist, in a given situation. Interestingly, there are no purely female intellectual traditions available from the history of criticism but this fact should not be depressing. What is important is whether we can produce a feminist impact in the present scenario. Feminists often accuse male intellectuals of stealing women's ideas. This has irritated so many critics. Spender's "Women of ideas and what men have done to them" is a testimony of clear intellectual dishonesty. He has projected woman as 'a creature of the shadows and silence' Today there is a widespread patriarchal effort to silence women on the one pretext or the other. Males still feel that women lack intelligence to face the defining moments of decision and are fit only for the kitchen.

The problem with Spender's approach is that it casts women as eternal victims of male play. While it is true that many women have been victimized intellectually, emotionally, and physically by men, it is also true that some have managed to counter male power. Many women have turned Freudian psychoanalysis into a source of truly feminist analysis of sexual difference and the construction of gender in patriarchal society.

Being female does not guarantee a feminist approach. It must be noted that all books written by women on women writers exemplify anti-patriarchal commitment. A female tradition in literature or criticism is not necessarily a feminist one. Since patriarchy has always tried to silence and repress women and women's experience, rendering such experiences visible is clearly an important anti-patriarchal strategy. On the other hand, women's experience can be made visible in alienating, deluding, or degrading ways: politically naïve and theoretically unaware. The Marxist view of the necessary dialectical relationship between theory and practice also applies to the relationship between female experience and feminist politics.

Thus, considered in this perspective, patriarchal oppression consists of imposing certain standards of feminism on all biological women, to prove that the chosen standards for femininity are natural. Thus, a woman who refuses to conform can be labeled both as feminist and unnatural.

51. Which of the following statements is the author most likely to agree with?

- (1) The objective of all feminist criticism is ultimately to fight against patriarchy and the hierarchical structure of society.
- (2) True feminist criticism is not so much relevant to the study of sex-antagonism than it is to a political feminist agenda.
- (3) Feminist critics follow the pluralistic approaches in the evaluation of patriarchal literature.
- (4) The patriarchal ideology is radical in nature, committed to the study of social and institutional relations between the sexes, but has occasionally come under attack from feminists.
- (5) Feminist criticism is a political programme like Marx's communism, committed to exalt the ideas of reversing male domination in the society.

52. What can be best inferred from the statement “A female tradition in literature or criticism is not necessarily a feminist one”?
- (1) There ought to be a clear understanding of the difference between the biological, and the political and ideological terms.
 - (2) All feminist ideas are not polluted by patriarchal ideology. There are others concerned with the discrete theorization of female-centric ideas.
 - (3) Feminists are placed in marginalized positions due to patriarchal resistance, though they act as cultural critics like socialists.
 - (4) Feminine tradition in literature represents social constructs, feminist suggests patriarchal repression.
 - (5) Feminism refers to political commitment representing the struggle against all forms of sex based ideology but female tradition exemplifies anti-patriarchal stance.
53. Why according to the passage, does feminist criticism need to achieve the political liberation of women?
- (1) The feminist critics and theorists expose and ridicule the dominant male ideology of the modern age. So it's a reaction against male domination.
 - (2) The essence of all politics is power; and all power comes with liberty. So what is at stake is the empowerment of women.
 - (3) Feminism aims to redress the socio-political imbalances and secure the legitimate rights of women.
 - (4) Feminists are concerned about the cultural transformation in the society and secure for the oppressed segments of society, a legitimate place of pre-eminence.
 - (5) Feminist criticism needs to achieve the political liberation of women to show their commitment to the struggle against patriarchy and sexism.
54. What most easily describes the organization of the passage?
- (1) The author puts forth the features of feminist criticism in the modern perspective, linking it up with focused literature, developing a contrast in the process.
 - (2) The author puts forward his own ideas about the growth of feminist criticism committed to the struggle against patriarchy and sexism in a methodological style.
 - (3) The author gives a political discourse on the subject of feminist criticism and establishes a theory relevant to the study of the social and institutional power relations between the sexes.
 - (4) The author presents a study, discusses its political nature, provides various facets of feminist psychology, and highlights its relevance in the context of women emancipation from male domination.
 - (5) The author presents a study about feminism, explores its relevance, and then critically evaluates its growth.

55. The phrase 'a creature of the shadows and silence' has been used by the author to show
- (1) an introvert and moody person
 - (2) a person who is alienated from the mundane affairs
 - (3) a secluded existence, out of touch with the world around.
 - (4) an attempt to silence women and their independent bent of mind
 - (5) a chauvinistic view not shared by the author

PASSAGE – III

Art as a disclosure of the deeper reality of things is a form of knowledge. It is imitation, as Aristotle observed in the Poetics, not of outward nature but of inner reality. Poetic objectivity is not photographic realism and Aristotle is right when he avers categorically that Poetry is more philosophy than history. The mind of the artist is always at work, aiming at a definite purpose. He discerns within the visible world something more real than its outward appearance, some idea or form of the true, the good or the beautiful, which is more akin to the spirit itself than to the visible things. This idea or form, this meaning or value is not an added grace or refinement, but the very heart of the object itself. Poetic truth is a discovery, not a creation. Croce denies that poetry reveals the nature of reality. It is an expression of a personal mood and the poet deceives himself if he claims that in his receptive mood he knows and in his creative mood he expresses the nature of reality. Poetry is essentially self-expression. Even Croce admits that art is intuition and intuition is always of the real external universe. It follows that poetic intuition also gives us a kind of knowledge. Besides, art can be said to give us subjective impression. Even science and common sense do not give us knowledge, the sensible is not real. The man with the sight knows more than the blind man. Even conceived, we cannot be sure that our apprehension of reality is knowledge of reality. The sensible act is independent of the observer. The color of the rose exists only for one who has the human sense of sight. The scientific picture of the universe again depends on our ways of knowing. Fragrance, colors are relative to the observer. All knowledge, perceptual or conceptual, is the meeting ground of the subject and object.

Poetic truth is different from the scientific truth since it reveals in its qualitative uniqueness and not quantitative universality. It does not speak of material qualities that can be measured but inward graces that can be felt only. The truths of poetry cannot be set out in elaborate arguments but are conveyed more subtly. To behold the vision is to be convinced of the truth. Deepest poetry has the widest appeal. What the scientists do when they discover a land is to give a new ordering to observed facts. The artist is engaged in a similar task. He gives a new meaning to our experience and organizes it in a different way due to his perception of subtler qualities in reality.

The greatest gifts of art are peace and reconciliation. Every beautiful statue has a certain air of repose; every great poem conveys a sense of peace. It is no use discussing a work of art by the standards of intellect and dismissing its characters and events as purely imaginary. The particular persons and events in a play may not be existent and yet the play may have an external meaning and a value. The imagined persons and events may be fictions and yet they help us to understand reality. Fanciful forms may reveal a quality of life. After all the play is the thing and the rest are shadows. It is the function of the artist to induce in us a sense of the

significance of life. It is not the function of the art to give a detailed justification of particular events. It only gives a sense of the meaningfulness of life, evokes in us ideas of larger beauty, justice and reality of the universe. The artist does not turn his back on the realities of the world. He knows its sorrows and sufferings as well as its virtues and its victories, the wrongs and cruelties are there but there is no need for alarm. The universe is sound at the core. The darkness of the world is painted but it does not depress us. When we read a great play like Hamlet or King Lear of Shakespeare, it seems the mysteries of the world are nearly revealed to us. The poet shares the knowledge, which he has accumulated in the whole span of life. The outward world may be calamitous but the mind is left restful.

The author of the Bhagavad-Gita tells us that the superior soul is he who experiences the intensest pain and pleasure without being affected by them. Only such seasoned souls can see life always. Our sweetest songs are of our saddest thoughts. We give in a song what we learn in suffering.

Aesthetic appreciation demands the exercise of the whole mind and not merely of the logical understanding. We cannot truly appreciate if we are not aided by a higher insight. We must share the world, which the artist presents to us. Schopenhauer suggests that the artists send us their eyes and we see with them. Appreciation requires sympathy and understanding though not belief and agreement. We often become disinterested and contemplative. Aesthetic creation and enjoyment are both non-intellectual actions.

He craves for inward truthfulness, utter sincerity, and not conventional propriety. He is fighting for the reshaping of his society on sounder lines and society judges all acts according to well common standards. It regards men as machines and all of us slaves of a mechanical system of ideas.

56. Which of the following does the author mention to support his theory of imitation?
- (1) All art imitates life and the mind of the artist is constantly working to impose a pattern on the amorphous matter, a holistic picture of the tangible parts.
 - (2) Poets and artists, imitate the external appearance. This process involves objectivity of observation though it is presented in their subjective expressions.
 - (3) Poetic truth is subjective in nature and poets seek inspiration from the visible and invisible phenomena.
 - (4) Art is an inner call of the spirit, an expression of self based on inspiration from within.
 - (5) An artist is always a slave to his emotions and passions; his realisation of external reality is imaginative description of the hidden truth; an imitation of an imitation.
57. Which of the following best illustrates the distinction between poetic truth and scientific truth?
- (1) Poetic truth is a creation, scientific truth is discovery; poetry reveals the nature of reality, and science observes the conceptual matter.
 - (2) Poetic truth is uncertain and unverified, scientific truth is definitive, being based on objective observations and experimentation.
 - (3) Poetic truth is a source of aesthetic pleasures; the scientific truth increases our understanding of life and gives us a heightened sense of reality.

- (4) Poetic truth is subjective and relative, whereas scientific truth is objective and absolute.
- (5) Poetic truth, expressed through images and symbols, has wider appeal, as it unravels the hidden mysteries of life and universe; the scientific truth is the result of observation and experimentation, making it quantifiable and measurable.
58. What can be best inferred from the passage about the role of an artist?
- I The artist is always engaged in the apprehension of reality, depiction of pains and tragedies, and ordering of disparate experiences of life and existence.
 - II The quest of an artist is for truth. The artist is highly imaginative and intuitive; his heightened sense of imagination gives a new meaning to experience.
 - III The perception of reality of an artist is subjective in nature; it cannot be tested or measured by intellect or reason.
- (1) I only (2) I and II (3) II only (4) II and III (5) III only
59. How does the author proceed to establish the role of a poet/artist in materialistic society vis-à-vis that of a scientist?
- (1) It is the poet and the artist who fuels imagination and the scientist who endeavours to fulfill the poetic dreams.
 - (2) The author critically evaluates the role of art in life in establishing reality and truth through intuition and objective experiences.
 - (3) The author examines the poetic process and the scientific process to explore the fundamental truth of the conceptual and the perceptual world on mutually complementary basis.
 - (4) The author investigates the function of art in life and concludes that art is essentially self-expression, the quest of subjective and impressionistic reality, as against science that is an expression of the objective truth.
 - (5) The author examines poetic art objectively, is concerned about sensitivities and the intuitive insights of the artist who explores the inexplicable mysteries of the external universe, and expresses them in subtle forms rather than coherent logical forms of the scientist.
60. The passage answers all the below given questions except
- (1) Can art and science be judged on a common yardstick of objectivity and quantifiability?
 - (2) Does the pain and sufferings of the world render the poet and the artist restless?
 - (3) Does the apparent suitability of art in all its forms offer a real assessment of life?
 - (4) Is art objective in providing knowledge of the universe like science?
 - (5) Does art need intellect or imagination?

SECTION – III

61. Find the number of digits in 1001^{1001} .
 (1) 3004 (2) 1001 (3) 3003 (4) 3030 (5) 3000
62. What will be the co-ordinates of centroid of a triangle if co-ordinates of orthocenter and circumcentre of the triangle are $(-2, 4)$ and $(4, 1)$ respectively?
 (1) $(-2, -2)$ (2) $(-1, 1)$ (3) $(2, 2)$ (4) $(-2, 2)$ (5) $(2, -2)$
63. A fast bowler requires energy of E units per ball bowled, when he bowls at a speed of V m/sec. If $E = V^3 - 22V^2 + 125V$, find the maximum number of overs bowled by him, given that total energy supplied for the day is 3000 units and the bowler does not bowl any no or wide ball.
 (1) 150 (2) 120 (3) 60 (4) 25 (5) 20
64. ABCD is a cyclic quadrilateral with three angles in the ratio $1 : 2 : 3$. If both its diagonals are shorter than the diameter of its circumcircle, what is the measure of the smallest angle of the quadrilateral?
 (1) 36° (2) 45° (3) 60° (4) 90° (5) cannot be determined
65. If N is a natural number having total number of divisors 18, which of the following can't be the number of divisors of N^2 ?
 (1) 35 (2) 51 (3) 44 (4) 45 (5) 48
66. If $[N]$ denotes the greatest integer less than or equal to N , then $\left[\frac{1}{2} + \frac{1}{100}\right] + \left[\frac{1}{2} + \frac{2}{100}\right] + \left[\frac{1}{2} + \frac{3}{100}\right] + \dots + \left[\frac{1}{2} + \frac{75}{100}\right] =$
 (1) 75 (2) 23 (3) 24 (4) 25 (5) 26
67. If a square and a regular hexagon have the same area, the ratio of their perimeters is
 (1) $1 : 2$ (2) $\sqrt{3} : 2$ (3) $\frac{1}{2} : 5^{1/2}$ (4) $4^{1/4} : 3^{1/4}$ (5) none of these
68. An A.P, containing consecutive integers, starts with $N^2 + 1$. The sum of first $2N + 1$ terms of the A.P will be
 (1) $N + (N + 1)^3$ (2) $(N - 1)^3 + N^2$ (3) $(N - 1)^3 + N^3$ (4) $N^3 + N^2$ (5) $(N + 1)^3 + N^3$
69. In the equation $x^2 + ax + b = 0$, the coefficients a and b are real. If one of the roots is $2 + \sqrt{3}$, what is the value of a ?
 (1) $2 - \sqrt{3}$ (2) $\sqrt{2} + 3$ (3) $\sqrt{3}$ (4) none of these (5) data insufficient

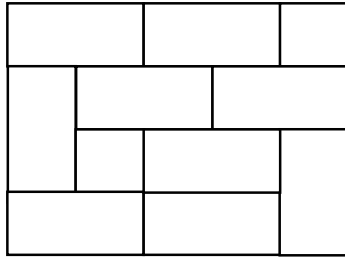
70. If the area of a triangle is given by $\frac{1}{2}xy$, where x and y are the values (in sq. units) on x -axis and y -axis respectively. What will be the maximum possible area of the triangle formed and satisfying the equation $5x - 2y \leq 30$?
- (1) 50 (2) 100 (3) 45 (4) 90 (5) data insufficient
71. a, b, c are consecutive natural numbers and
 $x = \text{LCM}(a!, b!, c!)$
 $y = \text{HCF}(b!, c!)$
 $z = \text{LCM}(a!, b!)$
 Which of the following is/are true if $a < b < c$?
- I. $x = z$
 II. $x = cy$
 III. $x + y + 2z$
- (1) only I (2) I and II only (3) only II (4) I and III only (5) all the three
72. Let S be the set of integers $\{4, 12, 20, 28, \dots, 516\}$ and S' be the subset of S such that the sum of no two elements of S' is 520. The maximum possible number of elements in S' is
- (1) 30 (2) 31 (3) 32 (4) 33 (5) 35
73. Let $P(x) = kx^3 + 2k^2x^2 + k^3$. Find the sum of all possible real numbers k for which $(x - 2)$ is a factor of $P(x)$.
- (1) -8 (2) 16 (3) 4 (4) 32 (5) None of these
74. If a_1, a_2, a_3 are the first three terms of an arithmetic progression containing 100 terms, what is the possible common ratio when a_2, a_1 and a_3 are in geometric progression?
- (1) -2 (2) 2 (3) 1
 (4) both (1) and (3) (5) impossible

Directions for questions 75 – 76:

Two circular tracks of radii 2 km and $2\sqrt{3}$ km intersect each other at A and B. The distance between the centers of the two circular tracks is 4 km. Ravi and Kavi start running from point A in the opposite directions on different tracks with speeds 20 kmph and v kmph respectively. Ravi runs on the track having smaller radius and crosses Kavi for the first time at B.

75. The ratio of the speeds of Ravi and Kavi is
- (1) $5 : 4\sqrt{3}$ (2) $4 : 5\sqrt{3}$ (3) $2 : \sqrt{3}$
 (4) either (2) or (3) (5) either (1) or (3)

80.



A rectangle, having perimeter 72 cm, is divided into 9 congruent rectangles and two congruent squares. The edge of square is the same as one of the edge of the smaller rectangle. What is the perimeter and area of the smaller rectangle?

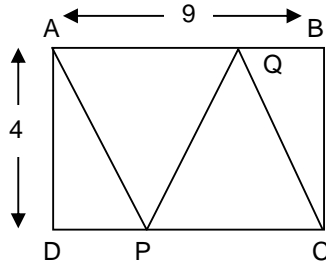
- (1) 24 cm, 36 cm² (2) 24 cm, 32 cm² (3) 12 cm, 32 cm²
 (4) 12 cm, 36 cm² (5) data insufficient

81. In how many ways can we distribute 5 different toys among 7 children when any child can get any number of toys?

- (1) 7⁵ (2) 5⁷ (3) 35 (4) 5! (5) 7!

82. If three segments inside a rectangle are equal as shown in the figure given below, what will be the total length covered by an ant from A to C through APQC?

- (1) 5 (2) 12 (3) 18
 (4) 15 (5) 20



83. If p and q are the roots of $x^2 + px + q = 0$, then

- (1) p = 1 (2) p = 1 or 0 (3) p = -2 (4) p = -2 or 0 (5) p = 1 or -2

84. What is the angle between minute and hour hands of a clock when it shows 3 past 20?

- (1) 30° (2) 20° (3) 10° (4) 15° (5) 25°

85. The S.P. of 20 articles is equal to the C.P. of 21 articles. What is the profit or loss percent?

- (1) 4.25% profit (2) 4.25% loss (3) 5% profit
 (4) 5% loss (5) 4.75% profit

86. If $x + r = 1$, $p + 1 = n$, $r + n = k$, $r = 8$ and $x + p + k = 30$, the value of k is

- (1) 17 (2) 22 (3) 23 (4) 15 (5) 11

Directions for questions 87 and 88: Answer these questions on the basis of the following information.

The proportion of A, B and C in a solution is in the ratio 3 : 5 : 7. A and B are mixed in the solution such that new ratio becomes 7 : 5 : 3.

87. What fraction of A is mixed in the solution?

(1) $\frac{40}{9}$

(2) $\frac{20}{9}$

(3) $\frac{9}{20}$

(4) $\frac{13}{3}$

(5) $\frac{9}{40}$

88. What fraction of B is mixed in the solution?

(1) $\frac{7}{5}$

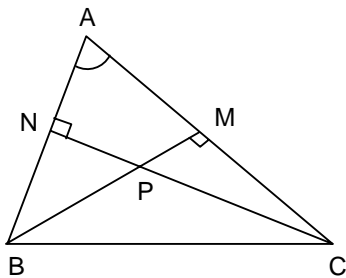
(2) $\frac{7}{4}$

(3) $\frac{5}{3}$

(4) $\frac{3}{4}$

(5) $\frac{4}{3}$

89.



In $\triangle ABC$, BM & CN are perpendiculars on sides AC and AB respectively. If $AM : CM = 1 : 3$, $MP = 3$ and $BP = 13$, what is the value of AM?

(1) $3\sqrt{4}$

(2) 6

(3) 8

(4) $\sqrt{8}$

(5) 4

90. Which is the least number having exactly 24 factors?

(1) 1152

(2) 2304

(3) 384

(4) 3456

(5) none of these