Q-1

Essentials of the automatic block system on double line - (GR 9.01)

(1) where trains on a double line are worked on the Automatic block system -

(a) the line shall be provided with continuous track Circuiting or axle counters,

(b) the line between two adjacent block stations may, when required, be divided into a series of automatic block signalling sections each of which is the portion of the running line between two consecutive stop signals, and the entry into each of which is governed by a stop signal, and

(c) the track circuits or axle counters shall so control the Stop signal governing the entry into an automatic block Signalling section that -

(i) the signal shall not assume an 'Off' aspect unless the line is clear not only upto the next stop signal in advance but also for an adequate distance beyond it, and

(ii) the signal is automatically placed to 'On' as soon as it is passed by the train.

(2) unless otherwise directed by approved special instructions, the adequate distance referred to in sub-clause (i) of clause (c) of sub-rule (1) shall not be less than 120 metres.

(3)(a) under special instructions, one of the automatic stop signal between two stations in the automatic block signaling territory in each direction may be made as modified semi-automatic stop signal;

(b) the mid-section modified semi-automatic stop signal so provided shall be interlocked with the signals of the station ahead through track circuits or axle counters or both and shall be controlled by the Station Master of the station ahead, the relevant indications whether the signal is in normal automatic mode or modified semi-automatic mode shall be available to the Station Masters at both the ends;

(c) Advanced starter signal of the station in rear shall be interlocked with the mid-section modified semi-automatic stop signal in such a way that when working with 'A' sign extinguished, the Advanced starter shall assume 'off' aspect or be taken 'off' only when the line is clear upto an adequate distance beyond the mid-section modified semi-automatic stop signal; similarly the mid-section modified semi-automatic stop signal shall assume 'off' aspect automatically or be taken 'off' only when the line is clear upto an adequate distance beyond the Home signal of the station ahead;

(d) during abnormal conditions like fog, bad weather impairing visibility, the mid-section modified semi-automatic stop signal may be worked by extinguishing 'A' marker in the manner prescribed under special instructions and this action shall also ensure that the 'A' marker of the Advanced starter signal of the station in rear and Home signal of the station in advance shall also be extinguished;

(e) the adequate distance mentioned under clause (c) shall not be less than as prescribed under sub-rule (2);

(f) during normal conditions, mid-section modified semi-automatic stop signal shall work as normal automatic stop signal.

(4)(a) when the Loco Pilot finds mid-section modified semi-automatic stop signal with 'A' marker extinguished in 'ON' position, he shall stop his train in the rear of the signal and inform this fact to the Station Master of the station ahead on approved means of communication as prescribed under special instructions;

(b) the Station Master of the station ahead may authorise the Loco Pilot to pass the mid-section modified semi-automatic stop signal working with 'A' marker extinguished in 'ON' position through approved means of communication after ensuring conditions and procedure prescribed under special instructions;

(c) in case the Loco Pilot is unable to contact the Station Master of station ahead, he shall pass the signal at 'ON' after waiting for five minutes at the signal and proceed cautiously and be prepared to stop short of any obstruction, at a speed not exceeding ten kilometres an hour upto the next Signal and act as per aspect of this signal; and

(d) the Loco Pilot shall report the failure of mid-section modified semiautomatic stop signal to the Station Master of the station ahead.

Duties of driver and guard when an automatic stop signal on double line is to be passed at 'On'(GR 9.02.)

(1) When a Driver finds an Automatic Stop signal with an 'A' marker at 'On', he shall bring his train to a stop in the rear of the signal. After bringing his train to a stop in the rear of the signal, the Driver shall wait there for one minute by day and two minutes by night. If after waiting for this period, the signal continues to remain at 'On', he shall give the prescribed code of whistle and exchange signals with the Guard and then proceed ahead, as far as the line is clear, towards the next Stop signal in advance exercising great caution so as to stop short of any obstruction(as per SR 9.02-1(a) -not exceeding 15 KMPH).

(2) The Guard shall show a Stop hand signal towards the rear when the train has been so stopped at an Automatic Stop signal, except as provided for in sub-rule (4).

(3) Where owing to the curvature of the line, fog, rain or dust storm, engine working the train pushing it, or other causes, the line ahead cannot be seen clearly, the Loco Pilot shall proceed at a very slow speed, which shall under no circumstances exceed 10 kilometres an hour. Under these circumstances, the Loco Pilot, when not accompanied by an Assistant Loco Pilot, and if he considers necessary, may seek the assistance of the Guard by giving the prescribed code of whistle.

(4) When so sent by the Driver, the Guard shall accompany him on the engine cab, before he moves forward, to assist the Driver in keeping a sharp look-out.

(5) When an automatic Stop signal has been passed at 'On' the Driver shall proceed with great caution until the next Stop signal is reached. Even if this signal is 'Off' the Driver

shall continue to look out for any possible obstruction short of the same. He shall proceed cautiously upto that signal and shall act upon its indication only after he has reached it.

Part of SR 9.02(5)(a) After passing an Automatic Stop signal at 'ON' the Driver of the train hauled by any locomotive shall ensure that minimum distance of 150 metres or two clear OHE spans is maintained between his train and the preceding train if any or any obstruction on the line ahead. However, in the case of EMU train the minimum distance of 75 metres or one clear OHE span shall be maintained between EMU train and a preceding train if any or any obstruction on line ahead. However, during dense fog, after passing an Automatic Stop Signal at 'On' (Red), the Loco pilot/Motorman of the train hauled by any locomotive including EMU train shall, while moving at a speed not exceeding 10 kmph, should ensure that he maintains a reasonable distance at which he is able to observe the flashing tail lamp of the train ahead or the obstruction, as the case may be.

(b) In special circumstances like flood etc., or if necessary to assist a disabled EMU train the following EMU train may be drawn closer to the preceding EMU train, exercising great caution.

Q- 2

Consequential train accidents : Include train accidents having serious repercussion in terms of either one or many or all of the following:-

(a) loss of human life,
(b) human injury,
(c) loss of Railway property,
(d) interruption to Rail traffic.

Train accident under following classification will be termed as consequential train accidents:-

Collision :	All cases under category A-1 to A-4.
Fire :	All cases under category B-1 to B-4.
Level crossing :	All cases under category C-1 to C-4.
Derailment :	All cases under category D-1 to D-4.
Miscellaneous :	All cases under category E-1.

Indicative Accidents :- In real term they are not accidents but are serious potential hazards and include all cases of train passing signal at danger, averted collision, breach of block rule coming under classification F, G and H.

RULES AND REGULATIONS FOR WORKING OF TRAINS DURING TOTAL INTERRUPTION OF COMMUNICATIONS ON DOUBLE LINE SECTION (S.R. 6.02.3)

1. In the event of total interruption of communications occurring between two stations on a double line section, i.e. when 'Line Clear' cannot be obtained by anyone of the following means stated in order of preference viz.:

- Block Instruments; Track circuits or Axle Counters;
- Telephones attached to the Block Instruments;
- Station to station fixed telephones wherever available;
- Fixed telephone such as Railway auto phones & BSNL/MTNL phones;
- Control Telephone;
- VHF sets under special instructions, but not as the sole means of communication on sections where passenger trains run.

The following procedure shall be adopted for train passing.

2. Before any train is allowed to enter a block section in advance, it shall be brought to a stop and the Driver and the Guard of the train shall be advised of the circumstances by the Station Master on duty.

3. The Station Master shall give an authority T/C 602 for working of trains during total interruption of communication on double line section to the Driver of each train which shall include:-

   (a) An Authority to Proceed without Line Clear.

   (b) A caution order restricting the speed to 25 kilometres per hour over the straight and to 10 kilometres per hour when approaching or passing any portion of the line where the view ahead is not clear due to curve, obstruction, rain, fog, or any other cause;

   (c) An authority to pass the last Stop signal in the 'On' position.

4. In the event of a Driver approaching or passing any portion of the line where the view ahead is not clear, a railway employee with hand signals must be sent in advance to guide the further movement of the train. A sharp look out ahead should be kept and the engine whistle freely used.
5. No train shall be allowed to enter the block section until there is a clear interval of 30 minutes between the train about to leave and the train which has immediately preceded
6. Fixed Signals with the exception of the last Stop signal may be taken 'Off' for the reception and departure of trains. The first Stop signal shall, however, be taken 'Off' only after the train has been brought to a stand outside it
7. A tunnel should be entered only after it has been ascertained that it is clear. If there is any doubt on this point, the train should be piloted by a railway employee equipped with hand signals and detonators
8. The Guard shall keep a sharp look out in the rear and be prepared to exhibit a hand danger signal to prevent the approach of a train from the rear and to protect it if necessary
9. When a train is stopped in the block section the Guard shall immediately exhibit a hand danger signal towards the rear and check up that the tail board or the tail light is correctly exhibited. If the stoppage is on account of accident, failure, obstruction or other exceptional cause and the train cannot proceed the Driver shall sound the prescribed code of whistle to apprise the Guard of the fact whereupon the Guard shall protect the train by placing one detonator at 250 metres from the train on the way out and two detonators, 10 metres apart, at 500 metres from the train, irrespective of the gauge. When train is detained outside

signals and if the detention exceeds or is likely to exceed 10 minutes it shall also be protected accordingly. In the absence of the Guard the duty of protecting the train shall devolve on the Driver.

10. No train shall be backed. In exceptional circumstances when it may be unavoidable to back a train, the train shall be backed only after providing protection by placing one detonator at 250 metres and two detonators, 10 metres apart, at 500 metres in rear of the point up to which the train is to be backed.
11. Before entering a tunnel, the head lights, side and tail lights and other lights (where provided) shall also be lit.
12. When approaching the station ahead, the Driver must bring his train to stop outside first Stop signal and sound continuous whistle (or any other code prescribed by special instructions), if no one from the station turns up within 10 minutes, the train shall be protected as per para 9 above and the Driver may send his Assistant Driver immediately thereafter, to the station or the cabin to inform the Station Master or Cabinman of the fact that the train is waiting at the signal for its admission into the station. In the absence of the Assistant Driver, the Guard after protecting the train, shall give this information.
13. The Drivers of all trains shall make over the 'Authority to Proceed Without Line Clear' to the Station Master of the station at the other end of the affected section. These shall be kept by the Station Master in his safe custody for inspection by the Transportation Inspector of the section, who shall prepare a report on the working of trains and shall forward the same alongwith his report to the Divisional Railway Manager within 7 days of communication.
14. A record of all trains passed over the blocked section on 'Authority to Proceed Without Line Clear' during the course of total interruption of communications, shall be maintained on the Train Signal Registers at both the stations concerned.
15. Trains must continue to work on this system until anyone of the means of communications, mentioned in Rule(1), is restored by the competent authority.
16. As soon as anyone of the means of communications has been restored the Station Master must send a message to the Station Master at the other end of the section on the form T/I 602.

Line Clear shall not be obtained or given by means of communications restored until both the Stations are satisfied that all trains and engines etc. despatched from their stations have arrived complete at the other stations. When the trains referred to in para (16) above arrive complete at the stations, after restoration of 'communication' their No. and their arrival time will be communicated to the other Station Master concerned under exchange of Private Numbers. Thereafter .an intimation about this shall be given to Section Controller also, on controlled sections, if communication with the Section Controller has also got restored, and normal working resume. If however, communication with Section Controller has not got restored along with restoration of communications between two stations, the Section Controller shall be advised of the position immediately on restoration of communication with him.

Q: 3

Million of passengers travel daily by rail to various destinations in connection with their variety of needs like education, business, entertainment, excursion, medical treatment, etc. The passengers are from almost all sectors of society and profession, who expect an efficient

transport system. Likewise a faster and economic mode for goods transport is also required to carry various essential and other commodities from one to another part of country. Railway plays pivotal role in transport. The volume of passenger and goods traffic is too high to be managed through manual systems. The IT applications on Railways have not only provided a tool to manage the high quantum of traffic but also helpful in providing quality and faster services. The mission is to achieve customer satisfaction which is possible through transparent and customer friendly IT applications.

FOIS (Freight Operation Information System) is an On-Line Real-Time system based on absolute current State of Art Technology and efficient Communication system.

- A management tool to optimize utilization of costly assets and resources by improving the distribution of Rakes/Wagons & Locos, and also scheduling and Routing Traffic in an optimized cost effective manner.
- Provides Continuous Cargo Visibility and enables the Freight customers to have instant access to information regarding the current status of their consignments in transit for just in time inventory.

Features

- Global tracking of consignments in real time Rakes or individual wagons.
- The insight and pipeline of consignments thus captured on the entire Railway network is made available for timely planning and just in time inventory management.
- Facilitate acceptance (customer's Orders), billing and cash accountal of freight traffic from identified nodal customer centers which may not necessarily be the handling terminals.
- Extension of such facilities to customer's premises and introduction of e-commerce, benefiting both IR and trade & industry, by eliminating manual transactions which necessarily add to the burden of logistics management.
- Providing requisite Foundation for a total logistics system furnishing real time information of the chain of physical distribution, an essential element in reducing inventory costs.

Rake Management Systems (RMS) and Terminal Management Systems (TMS) are two important two sub systems of FOIS.

Rake Management Systems (RMS) –features are as under:

- Rake based consignment tracking and pipeline
- Train / Rake operation
- Train and Stock Interchange
- Wagon wise Stock Holding
- Terminal Handling performance
- Loco holding, outage and power on-line
- Invoice based consignment tracking
- Invoice based loading originating tonnage and revenues
- Statement of missing Wagons/wrongly delivered

Terminal Management Systems (TMS) –features are as under :

- Computerized booking and delivery of consignment

- Station Accounting
- RR generation / Transmission
- E-demad /E-payment
- Improved Customer Interface

Control Office Application (COA) is comprehensive software for the automation of Control charting at a railway divisional control office. COA is intended to replace the tedious manual plotting of running trains on a chart. The application requires the controllers to enter data related to the train operations as they receive information from the control points or stations. The benefits of COA include- better planning and decision-making in train operations and thus contribute to increased operational efficiency.COA is designed to form the core application to drive the existing allied systems like FOIS, ICMS and. NTES

COA covers the following core functionalities:

- Train Ordering
- Detailed Train Information
- Manage Train Movement (Abnormal Working, Stabling, Banker Movement)
- Report Unusual Occurrences.
- Management of Maintenance Blocks
- Caution Orders
- Plot Graph (Advance and actual).
- MIS Reports
- View Station Layout.

Coaching Operations Information System (COIS) is a module of ICMS (Intergraded Coaching Management System) which provides detailed. real-time information for planning. executing and monitoring the passenger services operations. Since the system is aware of the plans, it requires minimal data input.

- Captures events on Coaches/Rakes,
- Generates Reports for Management of Coaching Stock.
- Data input predominantly at Division/Station/Coaching Yard level
- Maintain database pertaining to the information Rake Links, Yard Infrastructure, Coach Master, Train Schedules etc.
- Time-tabling Module for simulating the suitable timings for running of all kinds of trains, simulating the best available path for planning a train, keeping in view all variables, simulating optimum utilization of rake link, generating all time-tabling documents.

Crew Management System (CMS): The system is available at crew booking point. It manages the crew including guards of passenger as well as freight service. It provides on line information about crew availability. It records crew sign 'on' and sign 'off' and maintain current status of crew such as leave, sick, PME, rest, training etc which is available at any point of time. Crew is booked by sending SMS alert about expected time of their next trip.

Kilometerage performed by crew, total duty hours, over-time hours is calculated by system. Information about staff due for rest, medical check-up, refresher course, learning road etc is readily available in the system. It has been proved very useful in optimum utilization of crew and control on payment of over-time allowance, thereby increasing the productivity

Q: 4

Punctuality is calculated on the basis of the arrival time at destination or handing over at inter change points. It meets the built in feature of the time table such as the allowances provided for the trains. A thumb rule is that trains are expected to make up 75% of the traffic & loco allowances.

All trains which terminate and if running on schedule is given a grace of 15 minutes at destination. In the event of the train received late at inter change point, no further grace is provided and the train be considered as **NLT** if it does not loose any further time.

For trains which originate on the zonal railway and handed over to adjoining railway or passing through have no cushion (grace) provided i.e. these trains have zero tolerance as far as punctuality is concerned.

Suggest steps to improve punctuality in Indian Railway.

- Realistic timings based on actual field trials.
- Ensuring that the trains run on MPS.
- In the event of late running a conscious efforts should be made by the crew/station staff and particularly by the control office to make up time by utilizing the allowances provided.
- The operating department should ensure that blocks for asset maintenance are optimally utilized to ensure minimum failure of assets.
- Temporary speed restrictions should be maintained so that early relaxation is possible. To the extant possible engg. machine should be utilized to speed up the work under taken and relax speed restrictions.
- Review of time table should be done periodically. Any new trains proposed should not be charted in isolation but should to be taken in totality and should be taken into consideration of the trains preceding/following to have adequate running time. Frequent precedence or crossing in the case of single line section, decelerate the train and also has a negative influence on the crew.
- Bad runners should be identified based on seasons such as monsoon, winter and fair weather. Timings of bad runners should be modified at the first possible review of time table. Bad runners should also be monitored by having foot plate inspection at an appropriate level.
- Right powering based on the load of the train and through power to be encouraged.

Q: 5

Line capacity indicates the number of trains that can run in a section in 24-hours Calculation Formulae: A number of formulae to calculate line capacity is in use however, Charting formula is the most accurate having practical approach. Number of goods paths reduces in practical train working due to track maintenance blocks. Charted line capacity of a section with maintenance block is 5/6 of that without maintenance blocks.

Augmenting line capacity:. It can be improved mainly by increasing speed of goods trains, evenly spacing the block stations/signals, smaller block sections of equal length, reduction in block operation time, token-less block working, panel interlocking, automatic signaling etc.

(a) Speed of goods trains: which further depends on hauling power of loco, trailing load, lay out of section, type of signaling, standard of interlocking, track structure etc.

(b) Asset maintenance: Quality control while maintaining locomotives, rolling stock, signals, track and bridges help in increasing speed of trains thereby improving line capacity.

(c) Efficiency of staff: Driving skills, better workmanship in loco shed, and Operating staff efficiency at stations, yards, cabins and control office. Judicious planning, analysis and monitoring etc. help in optimum utilization of line capacity.

After attaining 80% line capacity utilization, Infrastructure inputs (Long term action) are required to be planned viz., up gradation of signaling/interlocking system, better track structure, introduction of high speed rolling stock, more powerful locomotives, splitting of lengthy block section. Priority to Line Capacity works should be accorded.

Q: 6 (a)

Private Freight Terminals

- Objective: To promote private investment in development and handling of freight terminals. This policy aims to stimulate development of privately owned freight terminals not on Railway land for dealing with Railway traffic including parcel traffic and containers. This will help in providing world class logistics facilities. This will enable rapid development of network of freight handling terminals with the participation of Private sector and enhance the presence and share of railways in the overall transport chain. It will help to divert traffic so far predominantly moving by road to rail and attain increased rail freight volumes by offering integrated, efficient and cost effective logistics and warehousing solutions to users.
- Railway will provide necessary connectivites for which funding will be done by the private party
- In the Zonal Railway, CTPM is the nodal officer for dealing and processing the application for PFT and Executive Director (Freight Marketing) is the nodal officer at Railway Board. CTPM will examine all aspects of eligibility criteria and operational feasibility of the proposal. After that, it will be put up by CTPM to CCM and COM for seeking In Principle approval. CCM(FM) would be the nodal officer in the Railway after commissioning of PFT.
- Party has to deposit Rs 10 lakhs as application fee while submitting the application. Party has to deposit Rs 10 lakhs as security deposit within 1 month of granting approval for setting up of a PFT by Railways. Upon successful completion of PFT 99% of the security deposit will be refunded within 30 days issue of notification of the PFT.
- PFTs can be Brown field PFT ,ie conversion of existing siding into a PFT or it can be Greenfiled PFT i.e a new freight handling terminal. Brownfield PFT should be completed within 1 year and Greenfiled PFT within 3 years after grant of final approval otherwise approval granted can be canceled and application fee and security deposit forefeited.
- The revenue sharing with Railways will start after 5 years of notification of PFT for Greenfield terminals and 2 years for Brown field PFTs. There will no wharfage charges only demuurage charges will be levied as per extant rules. The company will be free to fix various charges for the value added services being provided to the customers

Q: 6 (b)

Works Programme

- Every year Railway processes various works to improve or replace or create new infrastructure for fixed assets and rolling stock under Demand No 16.
- The proposals are forwarded by different departments in the division to their respective departments in head quarters or are developed at HQrs itself.
- At HQrs the proposals are scrutinized and prioritized and forwarded by the respective PHODs for selection by GM.
- After the selection is done by GM then the proposals are concurred by Accounts and then forwarded to Board where the final selection is done. The works sanctioned by Railway Board appears in the Pink Book after the presentation of the Railway Budget.
- Railway Board has developed a software 'IRPSM' (Indian Railway Projects sanction and management) for processing these proposals. This has helped in tracking the proposals as well as possible to closely monitor them
- Operating department proposes works to be sanctioned under Plan head 16: Traffic facilities and Plan Head :15 Doubling . The works that are proposed under Plan Head Traffic facility are mostly those work which will enable smooth and efficient movement of the traffic like provision of IBS, Raising the standard of interlocking , extension of platforms, yard remodeling, additional loop lines , long haul loops , provision of shunting neck, sand hump etc. Under Plan Head 15: Doubling, capacity enhancement works like double line/third line /fourth line etc are proposed
- The proposals which are more than 1 crore under Plan Head Traffic facilities needs sanction by Railway Board.
- Those works which are below 1 crore are processed with GMs approval.
- The proposas are to be submitted to Railway Board in a time bound manner details of which are given every year to the Zonal Railways.

Q: 6 (c)

Station Working Rules: In addition to General & subsidiary rules, station working rules are also framed to take care of local conditions. Based on the local conditions of the station, the provisions made for working the trains briefly describing the layout and operational features specifically for that station is mentioned in STATION WORKING RULE.

It is prepared for each block station and signed by Sr.DOM/DOM jointly with Sr.DEN/DEN. In case of Interlock station, Sr.DSTE/DSTE also to sign. There are following parts of the SWR:

- General description
- Procedure for working of trains at station and siding served by the station.
- Description of S & T gears & Telecommunication
- Appendixes including details on working of level crossing gates.
- Working rule diagram indicating complete lay out of the station including the non-interlocked sidings worked within the station limit.
- Displaying of all signaling features

- Should indicate gradient.
- Holding capacity of all individual lines.
- Names of the adjacent stations & distance
- Locations of the cabins etc. including block instruments.
- Any other information necessary in the day-to-day operation

Q: 6 (d)

Interlocking means an arrangement of signals, points and other appliances, operated from a panel or lever frame, so interconnected by mechanical locking or electrical locking or both that their operation must take place in proper sequence to ensure safety. This arrangement of interlocking at stations is made defunct for some period, when so required, for periodical maintenance / overhauling of signals, points and other appliances; or while remodelling the lay out; or any construction work. During such period of disconnection the station is called non-interlocked, and the activity of running trains is termed as **non-interlocked** (NI) working .

- Special safety precautions have to be observed during NI, because the working of signals & points is free from each other.
- All the points are manned.
- Clamping & padlocking is ensured prior to permitting any movement over a point.
- The maximum speed is restricted to 15 kmph.
- Senior supervisors of S&T and Operating department supervise the NI

Q: 6(e)

Freight train examination is an essential activity in safer running of trains. After examination by competent mechanical staff in nominated yards, necessary Brake Power Certificate (BPC) is issued. At present 3 types of BPCs are in vogue, viz. Intensive, Premium Closed –Circuit.

Item	Premium	Closed Circuit
Stock Type	Only air brake empty stock	Only air brake empty stock (preferably off POH/ROH /New Wagons)
Validity	12 days (multiple loading/unloading) + 3 days grace period	(a) 7500 Kms/ 35 days or 6000 Kms/ 30 days, whichever is earlier. (b) 6000 Kms/20 days for BLC rakes
Minimum Brake Power % at the time of examination	95%	100%
Issuing Yard	Nominated "A" category C&W depot	Nominated "A" category C&W depot
Advantage	Premium rakes can ply freely without any restriction of circuit	CC rakes can run within defined circuit only.

Q: 6(f)

Time tabling of passenger carrying trains

- Passenger trains are planned based on demands from general public and their representatives, associations etc. Based on physical surveys and commercial statistics, trains are augmented and if required additional trains are introduced.
- Schedules of trains are worked out with due consideration of terminal facilities, line capacity and path to fulfil passenger requirements. Often, due care is taken while finalizing the timings to depart the train in the evening and arrive destination in the morning, enabling the passengers an overnight journey.
- Priority is given to intercity trains which ideally be of super fast nature. Also, trains connecting to metro cities, state/national capital, religious places are given due consideration.
- In order to ensure optimum utilization of coaching stock and lie-over, trains are planned on platform return and Return BPC (RBPC). Wherever the To and Fro running time is more than 96 hrs or distance exceeding 3500Kms, time slot of minimum 6 hrs need to be allotted at the other end for secondary maintenance.
- Stoppages should be scientifically planned so that the requirement of the passengers of the section are adequately covered.

Q: 6(g)

Corridor blocks

- Corridor blocks are generally provided in the time table to maintain the tracks, OHE and other related infrastructure works.
- Maintenance of railway assets is very much essential on the safety point of view.
- Section wise corridor blocks are mentioned in the Working Time Tables.
- In cases, where 4 hrs. block could not be made available, two blocks of $2^{1/2}$ hrs. are provided preferably in day time. In cases, where two such blocks could not be made available in day time, one block each is given in day and night.
- In Mumbai Suburban section mega blocks are operated during night time and Sundays & Holidays.

Q: 6(h)

Railways is facing difficulties in movement of goods trains due to non availability of path in most of the sections with increase in freight traffic demand and emphasis to reduce operations cost, increasing the through put per train is necessary, which can be achieved by –

- Better pay load to tare ratio
- Increase in axle load
- Increasing No of Wagon per train

Long Haul is a combined train consists of two standard size Goods trains, running on a single path /line clear, thereby saving one path. These trains are running under "***Python***" nick name and

yield better speed since long loops are not available at most of the places and thus running to longer lead in single stretch. This is a method of running higher number of trains in congested sections; however it involves detention in yards while formation of long haul train.

Q: 7 (a)

Power plan: provides information about requirement of locomotives to work freight trains over a territory (Division/Zone), and it is prepared once in a year. It is prepared as under:

- Avg. no. of trains run on each section per day for last year are worked out, separately for single and multiple locos. Light Engines are also added.
- An additional 5% engine kms. are added for anticipated traffic growth.
- Loco requirement for ART, ARME and other locos which remain in outage (but not included in calculation of average kilometers) to be added in the bare requirement.
- Add 10% for major repair allowance.
- Mail/Exp/Passenger Loco requirement to be worked out on the basis of loco link.
- For shunting services, separate inferior power plan is prepared.

Q: 7 (b)

राजभाषा अधिनियम को पारित किया गया था 1963 मई 10, जो से लागू है। उक्त 1965 जनवरी 26 3 धाराएं है जिसमें से धारा 9 अधिनियम में कुल/पूर्ण है। इस धारा के अनुसार कुछ सबसे महत्व 3 कागजात हिंदी और अंग्रेजी में द्विभाषी रुप से एक साथ जारी करना अनिवार्य है। ऐसे कागजात द्विभाषी दारी ररुप से जारी करने की जिम्मे राजभाषा नियम अर करने वाले के अनुसार धारा 12 के नियम 1976 अधिकारी की होगी।

रेलवे में राजभाषा के प्रयोग को निम्नानुसार बढाया जा सकता है :

i. सभी विभागों के लिए यह अनिवार्य है कि वे अपने कार्यालय में राजभाषा कार्यान्वय समितियों का गठन कराए और संबंधित कार्यालय के कार्यालय प्रमुख को इस समिति का अध्यक्ष नामित किया जाए।

ii. समितियों में उचित अनुपात में अहिंदी भाषी अधिकारियों को प्रतिनिधित्व दिया जाए तथा जहां तक हो सके कोशिश की जाए कि किसी भी समिति में आधे सदस्य अहिंदी भाषी हों।

iii. समिति की बैठक प्रत्येक तिमाही में एक बार अवश्य की जानी चाहिए।

iv. जो कर्मचारी हिंदी संबंधी प्रतियोगिताओं में पुरस्कृत किए जाते है उन्हें राजभाषा कार्यान्वय समिति की बैठकों में आमंत्रित किया जाए।

v. हिंदी के संदर्भ, साहित्य, टाइपराइटरों, डेस्कों, आशुलिपिकों आदि को उपलब्ध कराया जाए और प्रशिक्षण की व्यवस्था की जाए।

vi. प्रशिक्षण संस्थानों में हिंदी माध्यम से प्रशिक्षण देने की व्यवस्था की जाए।

vii. क तथा ख क्षेत्र में कार्यरत हिंदी माध्यम से प्रशिक्षण देने वाले प्रशिक्षकों को कुछ समय के लिए ग क्षेत्र में भेजा जाए।

viii. हिंदी दिवस/पखवाड़ा/मास मनाया जाए।

ix. त्रिभाषी सूत्र का अनुपालन सुनिश्चित किया जाए।

x. हिंदी में उत्कृष्ट कार्य करने के लिए विभिन्न प्रोत्साहन योजनाएं लागू की जाएं।

xi. अधिकारियों एवं कर्मचारियों को प्रतिवर्ष उनके द्वारा किए गए कार्य के आधार पर नकद पुरस्कार दिए जाएं।

xii. हिंदी में आशुलिपि और टाइपिंग के लिए प्रोत्साहन भत्ता दिया जाए।

xiii. हिंदी शिक्षण योजना के अधीन पवीण, पवीण एवं प्राज्ञ परीक्षाएं उत्तीर्ण करने पर मिलने वाली प्रोत्साहन राशि में बढ़ोत्तरी की जाए।

xiv. राजभाषा के प्रयोग को बढ़ाने के लिए समय समय कार्यालय में हिंदी बैठकों का आयोजन किया जाए ताकि हिंदी के कार्य की समीक्षा की जा सके।

xv. राजभाषा के प्रयोग को बढ़ावा देने के प्रयोजन से हिंदी कार्यशालाओं का आयोजन किया जाए।

xvi. हिंदी प्रशिक्षण को अनिवार्य किया जाए।

Part-B-I (Establishment)

(a) Staff Benefit Fund (SBF):

The SBF is administered at HQ level for the benefit of non-gazetted staff by a committee consisting of CPO as Chairman & members nominated by recognized unions and the Personnel Officer/LW looked after as Secretary. The object of the fund are as under:

- To provide the aid for the education of employees ward;
- Recreation & amusement for the staff and their children;
- Relief of distress amongst the members of the staff and their families such as sickness or maternity leave to the families of the staff as are not covered by the medical attendance & treatment rules.

The source of fund of SBF is receipts from fines, all receipts from forfeited provident fund, bonuses, an annual grant from the Railway revenues at a par capita rate of Rs 26 in receipt of each non-gazetted Railway staff, unpaid wages beyond three years etc.

(b) Workmen's Compensation Act:

This Act is enforced into effect from 1-7-1924, an employer is liable to discharge his liability to a workman or his dependents, for accident arising out of and in the course of his employment on account of either death or disablement whether permanent, partial or temporary. It is applicable to all Railway employee including casual labour and also labour deployed by the contractors for carrying out works but excluding those employed in the administrative, district and divisional offices and those mentioned in Schedule-II of the Act and will not also apply to the staff in foreign territories. The following type of cases are excluded for the payment of compensation:

- Injury does not result in total or partial disablement for the period not exceeding three
- days'
- Workman having been at the time of accident under the influence of drink or drug;
- Willful disobedience of workmen to an order expressively given or to a rule expressively framed for the purposes of securing safety and not used safety devices.

(c) Child Care Leave:

Introduction of child care leave to Central Governments women employees having minor children may be granted by an authority competent to grant leave for a maximum period of 730

days during their entire service for taking care of upto two children, whether for rearing or to look after any of their needs like examination, sickness etc.
CCL shall not be admissible if the child is 18 years of age or older. The purpose of introducing CCL is to help women employees to take better care of their children and family.

(d) **Major and minor penalties:** The penalties shall be given for good and sufficient reasons as mentioned in DAR

Minor penalties includes

- Censure;
- Withholding of his promotion for specified period;
- Recovery from his pay of the whole or part of any pecuniary loss caused by him to the Govt of Rly Administration by negligence or breach of orders;
- Withholding of privilege passes or PTOs or both; reduction to lower stage in the time scale of pay for a period not exceeding three years without cumulative effect and not adversely affecting pension;
- Withholding of increments of pay for a specified period with further directions as to whether on the expiry of such period this will or will not have the effect of postponing the future increments of his pay.

Major penalties includes

- Reduction to a lower stage in the time-scale of pay for a specified period with further
- directions as to whether on the expiry of such period the reduction will or will not have the effect of postponing the future increments of his pay;
- Reduction to a lower timescale of pay, grade, post or service, with or without further directions regarding conditions of restoration to the grade or post or service from which the Railway servant was reduced and his seniority and pay on such restoration to that grade, post or service;
- Compulsory retirement;
- Removal from service which shall not be disqualification for future employment under the Govt or Rly Administration;
- Dismissal from service which shall ordinarily be a disqualification for future employment under the Govt or Rly Administration;

Provided that in cases of persons found guilty of any act or omission which resulted or would have, ordinarily, resulted in collisions of railway trains, one of the penalties shall ordinarily be imposed and in cases of passing Railway signals at danger, one of penalties ordinarily be imposed and where such penalty is not imposed, the reasons therefore shall be recorded in writing.

(e) Leave encashment:

An encashment of leave is one of the retirement benefits granted by Govt to their retiring employees. Under this scheme the benefit of encashment of unutilized leave on average pay at the credit of employee at the time of retirement, shall be admissible subject to a maximum limit of 300 days.

Recently, serving employee can also avail leave encashment once in every two years, total six times in service (maximum 10 days at an occasion). Employee has to avail atleast one day leave and should also avail privilege pass/PTO.

(f) Hours of Employment Rules:

To regulate hours of employment, period of rest and payment of overtime of various categories of Railway servants. These rules are not applicable to those, who are governed by other Act such as Factory Act etc.

Railway employees are governed by HOER, and classified under any one of the following 4 categories:

- Intensive- Job involves strenuous manual labour, physical / mental strength. Period of inaction not > 6 hrs in 24 hours cycle or 1 hour in shift of 8 hours. e.g. Section Controllers
- Essentially intermittent- Job involves period of inaction >6 hours including 1 rest period of 1 hour/ 2 rest periods of 30 minutes each. e.g. Gateman/caretaker
- Excluded- Supervisory job, whose hours of work are adjustable e.g. Stenos.
- Continuous – Staff not classified as Intensive, EI, Excluded e.g. clerical staff

(g) Minimum Wages Act:

This Act aims securing minimum rates of wages in those categories of employment whose wages are low, in order to prevent exploitation of unorganized labour, irrespective of profit/loss to the organization / employer. On Railways, this Act applies to workmen employed:

- On road constructions and building operations (new as well as repair and maintenance to roads, buildings, bridges, tunnels and overhead tanks);
- In stone breaking and stone crushing;
- In loading and unloading and in ashpit cleaning and
- Casual labour employed on P.Way so far as wages are concerned otherwise governed by HOER.

(h) Crew is an essential part of operations. Requirement of Running staff (Loco Pilots/Guards) has to be review periodically (6 monthly) in order to take care the fluctuations in traffic volume. Review should be carried out every six months i.e 1st April and 1st October by the Power Officers i.e. Sr.DME/Sr.DEE of the division. After obtaining associate finance vetting and DRM's approval these proposals are sent to HQRs for further scrutiny by the JA Grade Officers Evaluation Committee.

It is based on fortnightly crew hours (goods traffic) and crew link (passenger traffic). Futher , requirement for traffic fluctuation at 10% is added to arrive bare requirement. Leave and trainee reserved are also added. 10 Hrs rule, periodic rest. Night working and other safety measures are also taken care of.

After the evaluation of the proposals by the JA Grade committee as detailed above, these proposals after necessary corrections are sent for the approval of COM, CPO, FA&CAO & then to GM for sanction.

Part-B-II (Accounts)

(a) **Railway Budget** is the quantitative expression of proposed plan of expenditure and earning. It also reflects receipts / expenditure and review of previous year and proposal for meeting the requirement of coming year.

- Annual Financial Statement i.e. an estimate of Receipts and expenditure for the year.
- Budget is a Constitutional requirement.
- As per Article 112(1) of the Constitution it should be laid before both Houses of Parliament for consideration and sanction of voted portion. Charged expenditure-Appropriations sanctioned by President.
- Type of budget – Capital, Revenue, Performance, Responsibility, Zero-based

(b) **Work charged posts** - Number of regular posts are decided on the basis of routine work load of the organization. Many times, special work/ project is assigned to the department which needs additional manpower. For this purpose, there is provision for creation of temporary posts, the salary of which is charged to the subject work/ project. Such work charged posts are charged to D&G provision available against estimate of such works for managing the establishment. These posts are extended every year, from 1st July to 30 June next year, based on the available budgetary provision for the concerned department.

(c) **Single Tender** – A single firm or contractor is invited to undertake a work based on scheduled rates. This type of tender is resorted to where only one firm is holding monopoly for supply of material or carrying out a specialized nature of work. Since there is no likely hood of response from any other firm/individual the firm/individual holding monopoly is invited to take up the work under this system.
In addition work can be taken up under this system in case of emergency for restoration of through communication in case of accident or disturbance of communication due to natural calamity. The powers delegated to various officials and their associate finance officers whose concurrence is to be obtained as per SOPGEN.

Limited tender – tender notice is sent to the contractors / firms on the approved list for that particular work. If in the public interest, it is considered not practicable or advantageous to call for open tenders, limited tenders may be invited with finance concurrence and approval of competent authority. Reason for inviting limited tenders should be recorded

(d) **Operating Ratio** is the ratio of gross working expenses to gross earning. It is an index of financial efficiency. It shows the amount expended by railways to earn a rupee. Lower the ratio better the index.

➢ ***Gross working expenses include the expenditure on-***

- Repair and maintenance of Permanent Way and Works, loco, coaches, wagons, plants & equipments.
- Operation expenses of Rolling stock and equipments
- Operating expenses of traffic, commercial, fuel
- Staff welfare, PF, Pension etc.

- Appropriation to DRF & Pension fund.

➢ ***Gross earning includes Passenger earning, Goods earning & Sundry other earnings.***

(e) Admitted and Objected debit – Accounts during the regular inspection at station points out irregularities which at time entail recoveries from the station staff etc. These shortages are brought to the notice of the commercial department (through error sheet) for necessary action and effecting recoveries from the staff responsible for these irregularities. These debits are taken into account in the station balance sheet for monitoring of recoveries. When such debit is accepted for recovery by the staff/ commercial department, these are termed as **Admitted debit**. These have to be cleared by payment in cash, recovery through paysheet or 'write-off' by competent authority.

The Debit which are disputed/ not accepted by the Commercial department / staff then such debit is termed as not-admitted debit or **Objected debit**. Station staff has to endorse 'not admitted' on the error sheet issued by Accounts office alongwith the reason. If, such reason is not accepted by Accounts, the 'not admitted debits' are cleared as 'admitted debits'.

(f) Public Accounts Committee

The Committee on Public Accounts is constituted by Parliament each year for examination of accounts showing the appropriation of sums granted by Parliament for expenditure of Government of India, the annual Finance Accounts of Government of India, and other Accounts laid before Parliament.

- The Committee consists of not more than 22 members comprising15 members elected by Lok Sabha and not more than 7 members of Rajya Sabha elected by that House in like manner are associated with the Committee. The Chairman is appointed by the Speaker from amongst its members of Lok Sabha.
- The Examination of the Appropriation Accounts relating to the Railways, Defence Services, P&T Department and other Civil Ministries of the Government of India and Reports of the Comptroller and Auditor-General of India. In scrutinising the appropriation Accounts and the Reports of the Comptroller and Auditor-General thereon, it is the duty of the Committee to satisfy itself:
  - that the money shown in the accounts as having been disbursed were legally available for and, applicable to the service or purpose to which they have been applied or charged;
  - that the expenditure conforms to the authority which governs it; and
  - that every re-appropriation has been made in accordance with the provisions made in this behalf under rules framed by competent authority.
  - To ascertain that money granted by Parliament has been spent by Government within
  - the scope of the demand.

- The representatives of the Ministries appear before the Committee when examining the Accounts and Audit Reports relating to their Ministries.

(g) Originating earning -Railway is a transport-service provider. Revenue earned in the form of freight for transportation of goods, parcel, luggage and passenger fare including various charges applicable (such as wharfage, demurrage, terminal charges and other various charges/surcharges) from time to time. Revenue earned through booking of traffic from the stations / terminals, located on its own territory is *Originating earning* of the Zonal Railway.

Apportioned earning is the division of freight earning amongst the various zonal railways on the basis of distance travelled. The freight is charged either at loading station (Paid traffic) or at the destination station (to-pay traffic), however the distribution of freight among the zonal railways enroute is done in proportion to the distance travelled on the respective zonal railways.

(h) Expenditure control in Railways- It is exercised on working expenses / expenditure as under: -

- Working expenses - Revenue budget allotment under various head / sub-head (proportionate budget) is maintained by Accounts office. The expenditure against it is recorded and reviewed every month so that proportionate allotment is not exceeded.
- Works expenditure- Expenditure on works under various grants (eg capital, DFC, DF, OLWR, etc) is monitored continuously, so that actual expenditure does not exceed budgetary allotment. It is also compared with estimated cost as shown in works programme.
- Budget allotment and estimated cost is entered in register / computer before incurring expenditure. Expenditure status is advised to spending units and ensure that expenditure is not in excess to the estimate or quantum of work executed.
- Quarterly review of work is advised to Railway Board.
- Pace of expenditure viz-a-viz budget grant is also watched at different stages of budget viz. August Review, Revised Estimates, Modification Stage, Appropriation Accounts.