नाम
Name : _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

अनुक्रमांक
Roll No : _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

प्राप्तांक
Marks Awarded :

पाठ्यक्रम
Course : _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

दिनांक
Date : _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

अनुदेशक के आद्यक्षर
Instructor's Initial :

Study of Intermediate Block Signalling (IBS)

I. Brief description of IBS: Intermediate Block signalling (IBS) is an arrangement of signalling on double line section, as a substitute for class C station, required for the purpose of splitting a double line block section into two portions. The trains are dealt in such a way that the headway between two trains is reduced for increasing section capacity. To avoid the expenditure on the block instruments, station building and cost of recurring expenditure on operating staff etc., IBS is provided. The section between the LSS of the station and up to the overlap of IBS called rear section is monitored by means of an axle counter or continuous track circuit. The entry and exit points are provided at the LSS and at the overlap of IB Stop Signal respectively. The LSS governs the entry of the Train into the rear section. The entry into the Advance section is governed by the IB Signal which is interlocked with the block instrument. The IB Signal is operated by the Station Master in rear.

II. Study of Train Working Under IBS System

1) a) Take OFF the LSS for one direction by reversing the LSS knob and record your observation. Whether the LSS can be taken OFF? **Yes/No**

b) Try to take off IBS by reversing the knob. Can IBS be taken OFF? **Yes/No**

c) Now take line clear and take OFF IBS. Can IBS be taken OFF? Y**es/No**

Inference:

LSS can be taken OFF without obtaining _____ on the block instrument, but for taking OFF IBS _____ is to be obtained from the block station in advance.

2) Now allow the train to enter into rear section with LSS OFF and record your observations

(a) Entry of the train into the rear section_____ the LSS to ON and a buzzer sounds along with _____ indication on the panel. (**K1,K2, Replaces**)

(b) Buzzer stops and indication disappears as soon as the _____ is normalized (**LSS/FSS knob**)

(c) The axle counter indication changes from _____to _____on the IBS panel. (**Green, Red**)

3) Now allow the train to pass the IBS at OFF and enter into the Advance section and record your observations.

(a) Entry of the train into the advance section_____ the IBS track replacing the IBS to ON and actuates a buzzer with _____indication on the IBS panel. (**K2, K3, Actuates**)

(b) The buzzer and indication are suppressed by restoring the IBS knob to _____ position

(c) The axle counter indication changes from _____ to _____ on the IBS Panel (**Red, Green**)

4) Record your observations for further changes if any and set the instrument to TOL. Receive the train by taking OFF home signal and normalize the block instrument.

III. Study of working of two trains into the block section

1) (a) Take OFF LSS, allow the train to enter into Rear section

(b) Take Line Clear from Advance station and take OFF IB signal, let train enter into Advance section

(c) After the rear section is cleared, now allow the second train to enter into the rear section with the earlier train in Advance section and record your observations:

i) Is it possible to take OFF LSS for the second train? **Yes/ No**

ii) Does the buzzer sound when the train enters the rear section? **Yes/ No**

iii) Does any indication appear in the panel? **Yes/No**

iv) How the indication is suppressed?

v) Is it possible to take OFF IBS for the following train with first train in Advance section due to some reason? If not why? **Yes/No**

IV. Study of Resetting the system when the train passes IBS at ON

1) Allow a train to pass the IBS at ON and record your observations:

(a) Is it possible to take OFF LSS for another train? If not, why?

(b) Is it possible to take OFF IBS? If not, why?

2) Now receive the complete train at advance station and try to take 0FF the LSS at rear station.

(a) Is it possible to take OFF LSS at rear station?

(b) Does the visual indication K1 in the panel at rear station disappear? If not how long it continues?

(c) Write in brief how the system is brought to normal again.

V. Study of Resetting the system in case of axle counter failure

Simulate an axle counter failure by pressing the button provided on the left side corner behind the IBS panel and record your observations:

1) In case of Axle counter failure, the axle counter green indication in the IBS panel changes to _____ (**Red**,**Yellow**)

2) To reset Axle counter, the rear station SM informs advance station SM, who in turn after verifying the complete arrival of the last train, presses the _____ button, resulting in _____ indication appearing at rear station and the rear SM then presses ___ button simultaneously.

(**PB2, Co-operation, PB3**)

3) This action resets the axle counter by incrementing one number in the _____counter

(**PB1, PB2**)

VI. IB signal blank

1) The power failure or IBS blank is indicated to the rear station by means of a _____ indication in the panel along with a _____

2) SM suppresses the buzzer by pressing _____ button

(**K4, Buzzer, acknowledgement**)

BLOCK DIAGRAM OF IBS WORKING

Signature of the trainee